

ADDIS ABABA UNIVERSITY
SCHOOL OF COMMERCE



**FACTORS AFFECTING THE IMPLEMENTATION OF E-
GOVERNMENT PROCUREMENT: THE CASE OF
GOVERNMENT ORGANIZATIONS IN ETHIOPIA**

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JUNE, 2024

ADDIS ABABA, ETHIOPIA

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GOVERNMENT PROCUREMENT: THE CASE OF GOVERNMENT
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BY

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**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE MASTER OF ART DEGREE IN LOGISTICS
AND SUPPLY CHAIN MANAGEMENT**

ADVISOR: BUSHA TEMESGEN (PhD)

JUNE, 2024

ADDIS ABABA, ETHIOPIA

DECLARATION

I declare that this thesis is entitled "Factors Affecting the Implementation of e-Government Procurement: The Case of Government Organizations in Ethiopia." It is my original work. I have undertaken the research work with the guidance and support of my advisor. This study has never been submitted for any degree or diploma program at any other institution, and all sources of materials used for the thesis have been duly acknowledged.

Wubet Girma

Signature _____

Date _____

CERTIFICATION

This is to certify that Wubet Girma carried out the research thesis titled "Factors Affecting the Implementation of e-Government Procurement: The Case of Government Organizations in Ethiopia" and submitted it as a partial fulfillment of the requirements for the award of the degree of Master of Arts in Logistics and Supply Chain Management at Addis Ababa University.

Therefore, I hereby declare that no part of this thesis has been submitted to any other university or institutions for the award of any degree of diploma.

Advisor: Busha Temesgen (PhD)

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This is to certify that Wubet Girma completed the research thesis titled "Factors Affecting the Implementation of e-Government Procurement: The Case of Government Organizations in Ethiopia" and submitted it as a partial fulfillment of the requirements for the award of the degree of Master of Arts in Logistics and Supply Chain Management at Addis Ababa University.

It also demonstrates that the thesis complies with all university regulations and standards.

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ACRONYMS

AACRA	Addis Ababa City Road Authority
EGP	Electronic Government Procurement
E-Procurement	Electronic Procurement
EPPPA	Ethiopian public procurement and property agency
LPT	Last Planner Theory
ICT	Information Communication Technology
IT	Information Technology
SPSS	Statistical Packages for Social Science
TAM	Technology Acceptance Model
TOE	Technology-Organization-Environment

ABSTRACT

This study focuses on the factors affecting the implementation of e-government procurement (e-GP), specifically examining government organizations in Addis Ababa. It investigates the impact of implementation strategy, supplier acceptance, and functional requirements on the effective implementation of e-GP within these organizations. The study employed an explanatory research design. The target population consisted of 122 e-GP users, specifically the procurement directorates of government organizations utilizing the system. A simple random sampling technique, a form of probability sampling, was used to select the targeted government organizations. As a result, 93 government organizations in Addis Ababa that had adopted e-GP were selected. Primary data were gathered via questionnaires and analyzed quantitatively using the Statistical Package for Social Sciences (SPSS). The analysis indicates that functional requirements and supplier acceptance are critical factors that positively impact e-GP implementation, while the implementation strategy shows a negative relationship with e-GP implementation. The study recommends the inclusion of all functional requirements and adequate supplier engagement for successful adoption of e-GP and it also suggests a thorough review of the current implementation strategies to identify areas that may be contributing to the negative impact on e-GP implementation. Additionally, it suggests that future researchers should investigate other predictor variables such as resource, management commitment, employee and etc not covered within the scope of this study.

Keywords: *Electronic government procurement, implementation strategy, supplier's acceptance, functional requirement*

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

In recent times, technology has become a cornerstone driving many organizations in the competitive business world. It achieves this by reducing costs through paperless transactions, cutting transactional time, and enhancing transparency via transaction automation (Muyumba & Phiri, 2017). This technological advancement extends to e-procurement, which involves the use of internet technology in goods and service procurement, streamlining the process through various IT aspects (De Boer, Harink & Heijboer, 2002).

According to Kamau and Kihara (2017), procurement systems have evolved in both the private and public sectors, transitioning from manual processes to electronic government procurement systems due to advancements in ICT. Lindskog (2012) stated that public procurement serves multiple purposes beyond securing the best deals, such as achieving economic, societal, and political goals

Traditional procurement methods are cumbersome compared to e-procurement, which saves resources in terms of cost and time (Zunk et al., 2014). E-procurement enables access to a wider market and streamlines purchasing processes, emphasizing efficient procurement management (Presutti, 2003).

Transparency, accountability, and integrity are fundamental principles of good governance, which e-procurement systems aim to uphold (Wittig, 2003). Governments worldwide leverage information technologies to enhance transparency, often employing electronic procurement and contracting systems (Hochstetter, 2023).

The implementation of e-GP involves deploying web applications to enhance procurement efficiency and transparency at a national level (Wu Chebil et al., 2021). Ideally, e-GP systems should cover pre-award and post-award phases, along with supporting features. Studies suggest that e-GP implementation enhances vendor competition, reduces procurement cycle time, and improves coordination between government departments (Mamun, 2018).

According to the E-Government Procurement Strategy of Ethiopia and Action Plan (2018), there are several problems in the public procurement sector in Ethiopia. These include challenges in procurement planning and implementing plans, lack of transparency in the procurement process, delays in procurement evaluation and contract award processes, lack of accountability, poor contract management, inconsistency in using procurement standards, poor data management, lack of access to procurement information, and poor coordination between and among procuring entities. To address these issues and improve governance, effectiveness, and socio-economic development through enhanced transparency, efficient processes, and competitiveness, Ethiopia has initiated an e-GP system. Despite progress, the effectiveness of e-GP implementation faces challenges due to various factors.

This study examined factors affecting e-GP implementation and proposed solutions to serve as best practice guidelines.

1.2 Statement of the Problem

Over the last two decades, various studies have examined both successes and challenges in e-GP. One of the successes of e-procurement is the ability to select commodities from electronic catalogs and facilitate direct orders, thereby reducing the need for extensive involvement from procurement departments. Furthermore, organizations across the globe have increasingly adopted supply chain innovations through the use of information system applications (Hassan et al., 2020).

Weerasinghe (2022) emphasizes the crucial benefits of implementing e-GP, including cost reduction, decreased corruption, increased transparency in procurement processes, and significant time and financial savings. Studies by Olusegun (2017), Ndunge (2016), and Asare & Prempeh (2017) have examined e-procurement challenges and critical success factors, but research specifically addressing these issues in Ethiopia is limited. Existing studies, such as those by Teklu (2020) and Shiferaw-Mitiku and Yessuf (2019), have primarily focused on single government organizations or pilot initiatives, leaving a gap in comprehensive, context-specific research.

Research from various countries highlights differing emphasis on factors such as ICT infrastructure, public procurement regulations, and management commitment. There is inconsistency in findings regarding functional requirements, with some studies focusing on

technological infrastructure while others emphasize broader cultural, security, and legal factors. Similarly, factors influencing supplier acceptance show variability, with different studies emphasizing management support versus cultural, security, and legal frameworks.

In Ethiopia, the absence of comprehensive data on e-GP performance, inconsistent metrics, variability in implementation practices, and gaps in the regulatory framework pose significant challenges. Furthermore, empirical research tailored to the Ethiopian context is scarce, often focusing on single case studies rather than a broader range of government organizations.

Preliminary informal interviews conducted in some government organizations implementing e-GP systems reveal gaps related to implementation performance, particularly concerning supplier acceptance, implementation strategy, and functional requirements of the system.

To address these gaps and inconsistencies, this study investigates the factors affecting the effective implementation of e-GP in government organizations in Addis Ababa. Specifically, it examines supplier acceptance, implementation strategy formulation and execution, and alignment with functional requirements. By identifying and addressing these factors, the study aims to contribute to the improvement of e-GP implementation strategies, ultimately enhancing procurement efficiency and transparency in government organizations.

1.3 Research Questions

To address the gaps and inconsistencies in the existing literature mentioned in the statement of the problem regarding the effective implementation of e-GP in government organizations, this study addressed the following research questions.

- How supplier acceptance affects the successful implementation of e-GP within government organizations?
- What is the effect of implementation strategy in the implementation of e-GP in government organizations?
- What is the effect of functional requirements on the implementation of e-GP in government organizations?

1.4 Research Objective

1.4.1 General Objective

The general objective of this study is to examine the factors affecting the implementation of e-GP in government organizations in Ethiopia.

1.4.2 Specific Objectives

The specific objective of this study is;

- To determine the influence of supplier acceptance on the implementation of e-GP in government organizations.
- To assess the effect of implementation strategy on the implementation of e-GP in government organizations.
- To ascertain the effect of functional requirements on the implementation of e-GP in government organizations.

1.5 Scope and Limitation of the Study

1.5.1 Scope of the Study

This study focused on factors affecting the implementation of e-government procurement, specifically examining government organizations in Ethiopia. The study concentrated on three factors believed to affect the implementation of e-GP: implementation strategy, the functional requirement of the system, and supplier acceptance. Moreover, this study was limited to government organizations in Addis Ababa, with a special focus on the procurement departments of these organizations. The researcher restricted the study to selected government organizations based in Addis Ababa city, excluding regional government organizations. The proposed research was quite justified, and the outcomes can be applied to other government organizations because government organizations are governed by the same set of rules, regulations, and policies. The study reviewed available literature on e-GP implementation and collected primary data using questionnaires.

1.5.2 Limitation of the Study

This research was limited and focused on randomly selected government organizations in Addis Ababa. While conducting this study, the researcher encountered challenges such as a lack of

research studies and availability of sufficient current literature on the topic. Additionally, respondents were reluctant to share sensitive information, while others misinterpreted the intentions behind the research and refused to provide accurate information for fear of disclosure, despite assurances of confidentiality. Furthermore, obtaining timely responses from the respondents was another limitation encountered during the research.

1.6 Significance of the Study

The study's findings will benefit a wide range of stakeholders by identifying and addressing factors hindering effective e-government procurement (e-GP) implementation. It will expand the body of knowledge, serve as a foundation for future research, and offer practical insights and recommendations to improve e-GP project management and execution. Policymakers will gain valuable information to inform policy formulation and strategic decisions, enhancing the performance, flexibility, and transparency of public procurement. Additionally, development partners will benefit by understanding how to ensure effectiveness and efficiency in e-GP initiatives, enabling more targeted support and resource allocation for such projects.

1.7 Definition of terms

Procurement

This is the process for an organization to obtain products or services from external parties (market supply) to ensure that production and business activities are smoothly carried out (Audino, 2022).

Public procurement

Public procurement is a central instrument to assist in the efficient management of public resources (Burton, 2005).

E-Procurement

This refers to the use of electronic methods in every stage of the purchasing process from identification of requirements through payment and potentially to contract management (Davila et al., 2003).

E-GP

The definition of e-GP used for the current cost-benefit analysis is that of a comprehensive end-to-end implementation system covering at least some features of planning, award, and implementation of public contracts (N. Dubosse, 2023).

Implementation

Implementation is more than just an activity; it is an activity that is planned and designed to achieve the activity's goals (Usman, 2021).

Implementation Strategy

A discrete method or technique used to enhance the adoption, implementation and sustainability of an evidence-based intervention (B.J. Powell, et al.,2015).

Functional Requirement

Functional requirements specify the software functionality that the developers must build into the product to enable users to accomplish their tasks, thereby satisfying the business requirements (Zhang, 2013).

1.8 Organization of the Study

This study was organized into five main chapters. Chapter one of the study presented the general introduction, including the background of the study, statement of the problem with basic research questions, objectives of the study, significance of the study, limitations of the study, and definition of terms. The second chapter was dedicated to the review of related literature. The third chapter presented the methodology of the study, describing the type and design of the research pursued, detailed descriptions of participants/samples, data sources, data collection tools and procedures, and methods of data analysis. The fourth chapter covered the results and discussions about the research topic based on the results of the third chapter. Here, the results/findings of the study were summarized and discussed with the use of related literature review. Finally, the fifth chapter explained the summary, conclusion, and recommendation part of the study.

CHAPTER TWO

RELATED LITERATURE REVIEW

2.1 Introduction

This chapter reviewed the literature of other scholars on general concepts of e-government procurement and factors affecting the implementation of e-government procurement in organizations. The review also covered theoretical, empirical, and conceptual studies in the area, focusing attention on the research problems investigated by other studies.

2.2 Theoretical Literature Review

2.2.1 E-Government Procurement

To reduce the issues related to the manual procurement process, numerous governments have focused on establishing e-government procurement (Premathilaka & Fernando, 2018). The e-procurement system allows government agencies across the country to electronically procure goods and services from suppliers. It shifts the traditional manual procurement process to an Internet-based electronic system. This transformation benefits suppliers by enabling them to showcase their products online, manage and process government purchase orders, and receive payments from government agencies through the e-procurement system (Nawi et al., 2016).

The introduction of e-GP has a great benefit for organizations. First, it has led to a reduction in the time spent in completing procurement processes through manual delivery of orders and payments. It has also led to the reduction of errors that arise from the exchange of papers during the procurement process (Van, Herselman, & Van, 2010).

2.2.2 E-GP Implementation

Padhi & Mohapatra (2010) indicated that the implementation of e-government procurement initiates an effective, efficient, transparent, and equitable procurement environment. Adopting E-government procurement will facilitate the procurement process by reducing paperwork, reducing the duration of procurement, and lower costs for transactions. Therefore, e-procurement implementation supports expanding both internal and external communication and business deals in the government sector. Moreover, adopting e-procurement to the government will help to

grant more bid participants and create huge competition between the bidders will help to decrease the incompleteness in the procurement process.

The implementation of e-GP is also crucial for the success of government organizations as it enables them to compete and dynamically respond to rapidly changing markets while upholding fundamental principles of good governance, including transparency, accountability, and integrity (De Boer et al., 2002).

According to the E-Government Procurement (E-Procurement) Strategy of Ethiopia and Action Plan (2018), the implementation of e-Government Procurement (e-GP) in Ethiopia has been associated with various benefits. These benefits include transactional benefits, value for money, efficiency gains, accountability, transparency and governance. The transactional benefits of e-GP implementation include savings in procurement costs, estimated to be between 5-20% of the procurement value, which can be utilized for other socio-economic programs. Value for money is achieved through increased quality supplies, reduced cost of procurement, reduced transactional costs, increased competition, and standardization. Efficiency gains are achieved through the reduction of procurement cycle time, easy access to the market and tender opportunities, timely payments, standardization, and dematerialization. Accountability is strengthened by enhancing transparency, providing audit trails, and making officials more responsive and accountable to their responsibilities. Transparency is achieved through clearly parameterized eligibility criteria and evaluation parameters, performance measurement, and providing efficient access to accurate, timely and comprehensive management information. Lastly, e-GP can improve public governance by allowing the implementation of the key principles of public procurement effectively in a synergetic balance enhancing all facets of good governance.

Benefits of e-GP Implementation.

Efficiency

E-GP can enhance efficiency in developing countries by reducing corruption, speeding up procurement processes, increasing transparency, and enabling cost savings through improved electronic transaction mechanisms (Zulkarnain Zulkarnain, I. 2023). Studies conducted in Malaysia, e-GP implementation reduced procurement cycle time from 45 days to 10 days (Abdullah & Abdul Samad, 2012). However, the actual implementation performance of e-GP has

faced some challenges in other countries as well, such as in India, where the slow processing of tenders and lack of standardization hindered the effectiveness of e-GP implementation (Upadhyay & Singh, 2016).

Transparency

Governments use electronic procurement and contracting systems to achieve a transparent process in acquiring properties or services (Mabillard, V. and Pasquier, M., 2016). In some countries like South Korea e-GP implementation provided access to procurement information and reduced corruption (Lee & Lee, 2011). However, in Kenya, a lack of transparency in the evaluation process hindered the effectiveness of e-GP implementation (Kamau & Kihara, 2017).

Equity

Equity in e-GP implementation involves ensuring that the procurement process is fair and open to all suppliers. E-GP implementation enhances equity by widening the market and providing equal opportunities to suppliers. E-GP implementation in Singapore widened the market and provided equal opportunities to suppliers (Kwok & Lee, 2008). However, in South Africa, there are concerns about the implementation of the e-GP system, where a lack of support for small businesses hindered the effectiveness of e-GP implementation (Chinyoka & van der Poll, 2016).

Value for money

A study by Kipkemoi and Ngugi (2017) found that e-procurement implementation significantly reduces procurement costs and increases efficiency. Additionally, a study by Choudhury et al. (2016) found that e-procurement implementation can lead to better supplier selection and better prices, resulting in better value for money.

Accountability

Dada and Egbetokun (2017) found that e-procurement can enhance accountability in public procurement by improving auditability, traceability, and transparency. A study by Osei-Kyei and Chan (2017) found that e-procurement implementation can improve accountability by enhancing stakeholder involvement and participation in the procurement process.

Finally, e-GP implementation involves implementing all the necessary features of the e-GP system, such as pre-award and post-award phases. Complete e-GP implementation enhances efficiency, transparency, equity, and fairness on governance in the procurement process. In other

countries, e-GP implementation has also enhanced these aspects of the procurement process, such as in Bangladesh, where e-GP implementation improved procurement efficiency, transparency, and accountability (Mamun, 2018). However, there are concerns about the implementation of the e-GP system in other countries as well, such as in Sri Lanka, where a lack of training for stakeholders hindered the effectiveness of e-GP implementation (Gunawardena & Abeyratna, 2017).

2.2.3 Factors Affecting e-Government Procurement Implementation

A variety of factors may affect an organization's effort to implement e-GP. Some factors in this proposal are classified into three categories. These are implementation strategy, supplier's acceptance and technical functionality of the system.

Implementation strategy

The implementation strategy for e-government procurement involves a phased approach that rolls out across government institutions in a gradual and flexible process. This approach helps to mitigate risks involved in implementing too many components of the reform at once (Ochara, 2010).

Roadmap and time frames are important elements in the phased approach to reform. It is recommended to start the process with a comprehensive assessment of the current institutional conditions, including an analysis of the current governance system, ICT infrastructure, incentives structure, legal framework in place, and human resources available. The analysis should also cover the training needs and potential implementation challenges. The system should only be rolled out once it has been pre-tested with real data, the software and integration processes, recording of real transactions and producing report work in practice (Luft, J. and Shields, M. D., 2003).

Hassanien and Dale (2008) developed a framework for e-government procurement (e-GP) implementation in developing countries. The study emphasized the importance of setting realistic time frames and deadlines that take into account the unique challenges and constraints of developing countries. The study recommended that e-GP implementation be conducted in stages, with each stage building on the previous one and with clear timelines and deadlines for each stage.

Allocation of resources is also a crucial factor for successful implementation. Large IT projects require substantial investments in equipment, training and infrastructure, and involve high risks of delays and failure, because of the interdependency of the various project components. Therefore, it is important to favor a pragmatic step-by-step approach to reform, based on a detailed assessment of existing conditions and needs (Casals, A., 2004).

Clear communication is yet another important factor in ensuring that all stakeholders understand the process, the expected outcomes, and their roles and responsibilities in the implementation. Effective communication strategies and plans are essential to foster transparency, accountability, and stakeholder engagement throughout the implementation process (Luft, J. and Shields, M. D., 2003).

Hassanien and Dale (2008) also discussed the importance of clear communication in e-GP implementation. The study emphasized the need to communicate clearly and transparently with stakeholders, including suppliers, contractors, and citizens, to ensure their participation and support. The study recommended that organizations develop communication plans that include clear and concise messages about e-GP programs and services and that they use multiple communication channels to reach their target audiences.

Supplier's Acceptance

According to a study by Wang and Zeng (2018), supplier acceptance of e-GP refers to "the degree to which suppliers are willing to use e-GP systems to participate in government procurement activities." This includes the supplier's willingness to use the e-GP system to submit bids, receive notifications, and complete transactions online.

Several studies have identified factors influencing supplier acceptance of e-GP, including willingness, participation, perceived usefulness, ease of use, and trust in the e-GP system. Incorporating technological solutions can streamline the acceptance process, enhance transparency, and minimize potential errors (Chopra and Meindl, 2020).

For instance, Mohd Ali et al. (2016) conducted an empirical investigation of factors influencing supplier acceptance of e-procurement in Malaysia and this study identifies factors such as trust, perceived usefulness, and perceived ease of use as significant predictors of supplier acceptance of e-GP.

Similarly, Ondieki and Odongo (2019) highlighted the importance of supplier participation and engagement in e-GP systems and identified factors such as trust, perceived usefulness, and compatibility as significant predictors of supplier adoption of e-GP.

Understanding supplier acceptance is vital for government organizations implementing e-GP systems, as it can help identify barriers to adoption and inform strategies to increase supplier participation. By leveraging digital platforms and effective communication and collaboration between buyers and suppliers, government organizations can enhance the acceptance process, improve supplier relationships, and achieve better overall performance within the supply chain (Monczka et al., 2015).

Functional requirement of the system

According to Sommerville (2006), the technical functional requirements specification of a system should be both complete and consistent. Completeness means that all services required by the user should be defined. Consistency means that requirements should not have contradictory definitions. In practice, for large, complex systems, it is practically impossible to achieve requirements consistency and completeness. One reason for this is that it is easy to make mistakes and omissions when writing specifications for complex systems. Another reason is that there are many stakeholders in a large system. A stakeholder is a person or role that is affected by the system in some way. Stakeholders have different and often inconsistent needs. These inconsistencies may not be obvious when the requirements are first specified, so inconsistent requirements are included in the specification. The problems may only emerge after deeper analysis or after the system has been delivered to the customer.

Technical factors are at the core of many software failures causes, resulting from improper application of software engineering theory principles and techniques (Dhlamini, Nhamu & Kachepa, 2009), uncertainty in the task and procedure (Gupta, 2008), and improper use of software/hardware technologies during system development (Sommerville, 2006).

Boehm (1991) identified software risk factors including developing the wrong functions, developing the wrong user interface, 'gold-plating', a continuing stream of changes in requirements, shortfalls in externally furnished components, shortfalls in externally performed tasks and performance shortfalls.

According to Lu and Shields (2003), e-procurement system software should have several key features, including the ability to automate the procurement process, provide a user-friendly interface, integrate with existing systems, and provide real-time data access.

The integration of the e-GP system with other existing systems is a crucial factor in its successful implementation. According to Ochara (2010), one of the major challenges in implementing e-GP in Kenya was systems integration, which required significant investments in time and resources.

Another factor of the functional requirement of the system is report-generating capability: The ability to generate reports is an essential feature of any e-GP system. According to Casals (2004), an e-GP system should have the capability to generate various types of reports, such as procurement status reports, supplier performance reports, and contract compliance reports. By ensuring that the e-GP system has these features, organizations can enhance their procurement processes, reduce transactional time, and increase transparency.

Doing the acceptance testing, end-users may find some of the required needs and capabilities they expected to find in the newly installed system omitted (Board for Software Standardization and Control, 1995).

2.3 Theory

This section reviewed theories related to the study. The theories included for this study are the Technology Acceptance Model (TAM), Last Planner Theory (LPT), and Technology-Organization-Environment (TOE) Framework.

2.3.1 Technology Acceptance Model (TAM)

TAM is a widely used theoretical framework for understanding individuals' acceptance and use of technology. It posits that perceived ease of use and perceived usefulness are key determinants of users' attitudes and intentions towards adopting a new technology (Davis, F. D., 1989).

In e-GP implementation, suppliers' perceptions of the system's ease of use will influence their acceptance. If suppliers find the e-GP system easy to navigate, understand, and operate, they are more likely to accept and adopt it. Factors such as user-friendly interfaces, clear instructions, and intuitive processes contribute to perceived ease of use.

Suppliers' perceptions of the usefulness of the e-GP system will also impact their acceptance. If suppliers perceive that e-GP offers benefits such as increased efficiency, reduced transaction

costs, improved access to procurement opportunities, and enhanced transparency, they are more likely to accept and adopt the technology.

TAM suggests that perceived ease of use and perceived usefulness influence users' attitudes and intentions toward adopting a new technology. Similarly, suppliers' attitudes toward e-GP and their intentions to use it for procurement activities are influenced by their perceptions of ease of use and usefulness.

2.3.2 Last Planner Theory (LPT)

Last Planner, for project management and implementation, has been developed by Ballard (Korinek & Mendoza, 2013). It focuses on collaborative planning and proactive management of constraints to enhance project performance.

By applying the Last Planner Theory principles, stakeholders involved in e-GP implementation can engage in collaborative planning sessions to identify dependencies, constraints, and potential risks. This collaborative approach allows for more effective coordination and alignment of activities throughout the implementation process.

Last Planner Theory principles emphasize the proactive identification and management of constraints that may impact project execution. Constraints could include factors such as regulatory requirements, technical limitations, resource availability, and stakeholder resistance. By systematically identifying and addressing these constraints, implementation teams can anticipate challenges and develop mitigation strategies to ensure smoother progress. Pull planning can help prioritize implementation tasks based on their criticality and interdependencies. By adopting a pull planning approach, organizations can optimize resource utilization, minimize delays, and improve overall project efficiency.

Last Planner Theory encourages continuous learning and improvement throughout the project lifecycle. e-GP implementation can benefit from a culture of continuous improvement, where implementation teams regularly reflect on their processes, identify areas for enhancement, and implement iterative changes. This iterative approach allows organizations to adapt to evolving requirements, incorporate stakeholder feedback, and drive ongoing optimization of the e-GP system.

2.3.3 Technology-Organization-Environment (TOE) Framework

Tornatzky, L.G. and Fleischer, M. (1990) TOE framework integrates technological, organizational, and environmental factors to explain technology adoption and implementation within organizations.

Functional requirements in e-GP pertain to the specific features and capabilities of the electronic procurement system being adopted. This includes requirements related to user interface design, data processing, security measures, integration with existing systems, and scalability.

Functional requirements address the organizational processes and workflows that the e-GP system must support. This includes requirements related to procurement procedures, approval workflows, vendor management, contract management, and reporting capabilities. It also considers external factors that may impact the adoption and implementation of the e-GP system, such as regulatory requirements, industry standards, market dynamics, and stakeholder expectations.

2.4 Empirical Literature

2.4.1 The relationship between factors affecting the effectiveness of e-GP implementation and e-GP implementation

e-GP Implementation and Implementation Strategy

It is essential to have a clear implementation strategy, particularly for managing large projects like e-procurement initiatives. The strategy for e-procurement implementation is essential in facilitating electronic procurement systems' success. For successful e-procurement implementation, there should be a proper implementation strategy aligned accordingly with the general strategy of the organization (Mohammadi, 2013).

According to Mamun (2018), e-GP is an effective tool for reforming the public procurement system by implementing appropriate policy and legal framework, and effective procurer and supplier activation. For effective implementation of the e-GP system, strong awareness building among stakeholders, capacity-building programs, and technological frame development is required. To ensure sustainability in e-GP change management and leadership are also required.

Functional Requirement and e-GP Implementation

Functional requirements are crucial for the successful implementation of e-GP systems. The e-GP system must meet the functional requirements of the organization for the procurement process to be efficient, effective, and transparent (Padhi & Mohapatra, 2010).

The Asian Development Bank (2013) suggests that the system's various components support different levels of features and functions, which determine the complexities of system development and implementation. The implementation of e-tendering is relatively simple and provides significant value to businesses, but it may involve complex workflows for large procurement entities. On the other hand, e-purchasing is relatively complex, and the basic functionality includes online registration of businesses, purchasing policies available online, buyer authorization management, online quotations and transactions, financial management integration, data warehousing, reverse auctions, and online catalogs. Online contract management primarily aims to improve internal efficiency and transparency, and commonly implemented functionalities include contract performance and payment management, contract variations, completion and final evaluations, guarantees, and contract templates.

Supplier Acceptance and e-GP Implementation

Electronic procurement systems offer several advantages for managing supplier acceptance. e-GP platforms enable the digitization of contract documents and specifications, allowing buyers to electronically communicate the terms and conditions to suppliers in a clear and standardized format (World Bank, 2017). This facilitates faster and more accurate communication, reducing the likelihood of misunderstandings or discrepancies during the acceptance process.

Moreover, e-GP systems often include features such as electronic signatures and digital workflows, which enable suppliers to acknowledge and accept contract terms electronically. Research by Lee et al. (2019) suggests that the use of electronic signatures can streamline the acceptance process, eliminate the need for physical paperwork, and expedite contract execution.

Furthermore, e-GP platforms can facilitate real-time monitoring and tracking of supplier acceptance status, providing procurement officials with visibility into the progress of acceptance activities and enabling timely follow-up as needed (UNCTAD, 2020). This enhances oversight and control over the acceptance process, reducing the risk of delays or non-compliance.

2.4.2 Literatures related to e-GP

Teklu (2020) examined the challenges of e-procurement implementation within the Addis Ababa City Road Authority (AACRA). The main objective of the research was to investigate factors affecting the adoption of e-procurement in AACRA. The study concluded that legal frameworks, management support and employee commitment, information technology infrastructure, and supplier acceptance are critical factors affecting the adoption of e-procurement in AACRA.

Shiferaw-Mitiku and Yessuf (2019) also conducted a study on Challenges and Critical Success Factors for E-Procurement Adoption in Ethiopia. The study aimed to identify perceived challenges and critical success factors for e-procurement implementation and to propose strategies for mitigating these challenges in nine federal-level organizations selected as pilot sites for scaled-down e-procurement initiatives. The study found that manpower retention, inconsistent and disruptive infrastructure, integration with the legacy system, top management and employees' commitment and attitude, supplier integration, security fear, weak and inconsistent support, and poor monitoring and evaluation practices are challenges of e-procurement adaptation in Ethiopia.

An Empirical Assessment was also conducted in Ghana on factors that influence the implementation of E-Procurement in Technical Universities by Asare & Prempeh (2017), and the result showed that ICT infrastructure, public procurement regulations, management commitment and staff competence are factors that influence the implementation of e-procurement.

Ndunge (2016) conducted a study on e-procurement and its impact on the performance of government ministries in Kenya. The research aimed to assess the organizational performance and challenges encountered during the implementation of e-procurement in these ministries. The study identified challenges such as lack of ICT infrastructure among suppliers, inadequate top management support, and concerns related to computer fraud and associated risks hindering the implementation and adoption of e-procurement.

Olusegun, B. (2017) in their study of Investigating Factors Affecting E-Government Procurement (EGP) Acceptance Decision Among Nigerian Small And Medium Enterprises revealed that lack of flexibility, complicated processes which are culturally related; unwarranted tampering of documents, lack of confidentiality, partial data display which are security issues as well as uncertainty about the enforceability, different national approach and issue of electronic

signature which are legal issues could affect SMEs acceptance decisions of e-GP. In essence, the findings revealed that culture, security and legal framework affect e-GP acceptance decisions and that cultural factors are the most predictor of e-GP acceptance decisions of SMEs in Nigeria.

Weerasinghe, W. L. G. D. et al. (2022) conducted research on critical success factors in the implementation of electronic government procurement (e-GP) in Sri Lanka. The study aimed to identify the key factors influencing the successful implementation of e-GP in public sector organizations. The research found that technological and environmental context variables significantly impact the implementation of e-GP in government organizations in Sri Lanka.

Teo et al. (2008) conducted empirical research in Singapore to investigate factors influencing the adoption of E-Government Procurement (e-GP). Their study focused on the role of business-to-business e-commerce, particularly e-procurement, among companies in Singapore. They explored how Internet-based technologies are transforming the procurement function, enhancing organizational competitiveness, and identified challenges to adoption. Their findings underscored the critical role of the Internet as the primary technological driver influencing E-Government Procurement initiatives.

Despite the different views exhibited among and between different scholars in determining factors affecting the implementation of e-GP, their major concern areas found to be similar. Hence, different variables are described below under the conceptual framework of the study.

2.5 Conceptual Framework

The study seeks to consider several variables and how they are related. The independent variables in this case are the factors affecting the implementation of e-government procurement. A conceptual framework below shows that implementation strategy, supplier's acceptance and functional requirement of the system are independent variables and lead to affect the implementation of e-government procurement. The dependent variable is e-government procurement implementation. It is considered dependent since the success of any e-government procurement system depends on the outcomes from very many factors. Several single factors acting individually have a collective impact on the success of e-GP implementation. The figure below shows the conceptual framework relationship between independent variables and dependent variables.

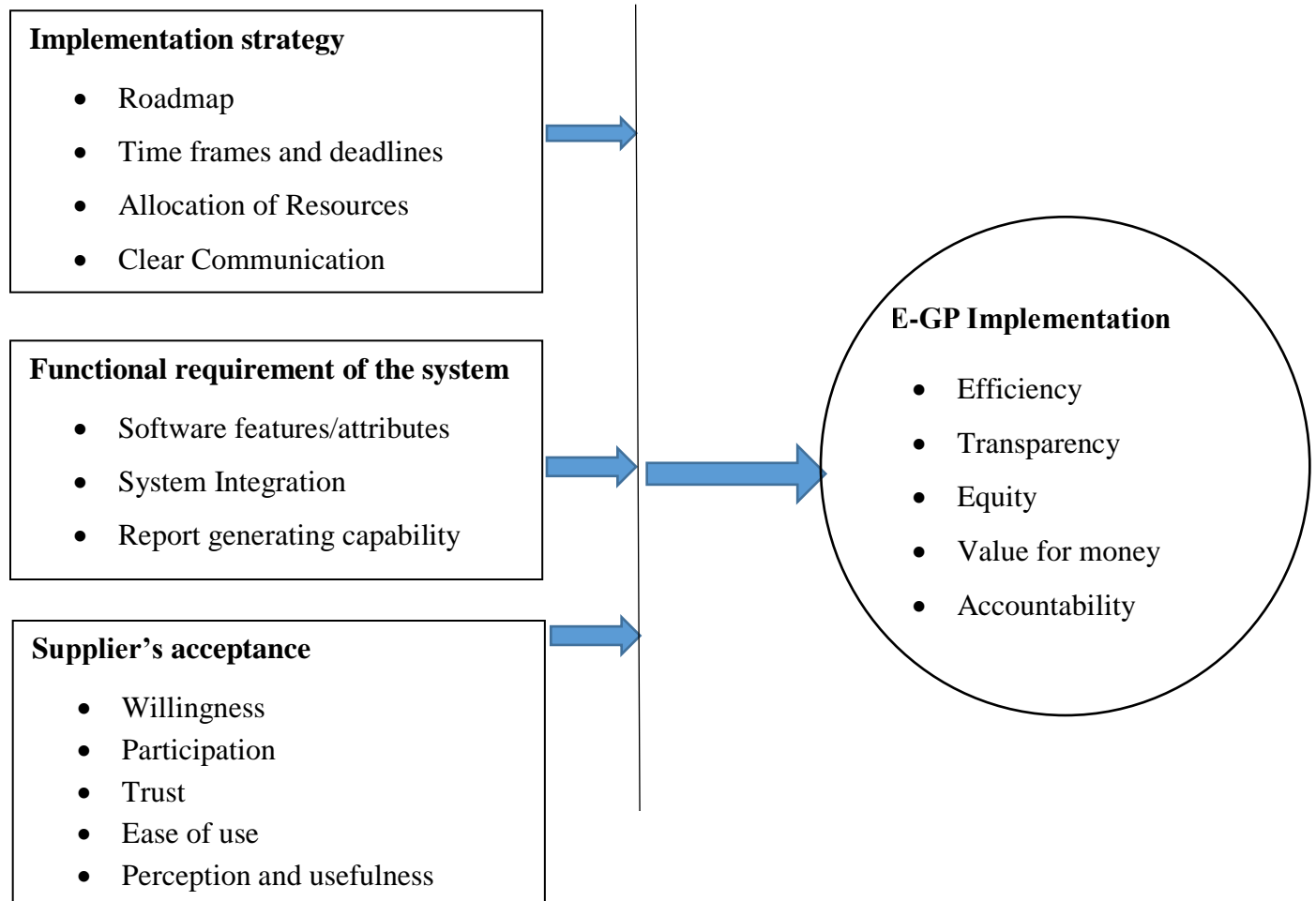


Figure 1: Conceptual Framework

Source: own (2024)

2.6 Summary of Literature Review and Research Gap

E-government procurement has gained significant importance in both academic and professional circles in recent times. However, despite the recognized benefits, the implementation of e-government procurement has been slow and early adopters have faced numerous disappointments. This highlights the presence of obstacles that need to be addressed in order to maximize the chances of success. In recent years, e-government procurement has become increasingly important in professional and academic circles. Nevertheless, despite the acknowledged advantages, e-government procurement adoption has been sluggish, and early adopters have encountered several setbacks. This emphasizes the existence of challenges that must be overcome to increase the likelihood of success. Prior studies carried out in diverse settings have pinpointed multiple pivotal elements that impact the triumphant implementation of

electronic government procurement, including lack of infrastructure, Top management support, legal framework, and workforce proficiency. It is important to note that in Ethiopia earlier research has been carried out either on single government organizations or only on pilot-targeted government institutions. Furthermore, to the knowledge of the researcher, no prior study has been conducted as far as the study target area is concerned.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter provided the methods used to conduct the study. It described the research design and approach, population, sample size, and sampling techniques, and also included data collection and analysis methods

3.2 Research Design

Research design is defined as a master plan that specifies the methods and procedures for gathering and analyzing the required data. A research design is essentially a study's structure or plan that serves as a guide for gathering and interpreting data. It is a set of instructions for completing a study. The blueprint for data collecting, measurement, and analysis is the research design. It is, in fact, a map that is typically created to guide the investigation (Gibaldi, 2009).

In this study explanatory research design was employed. Explanatory research aims to determine causal relationships between variables, investigating which factors produce specific effects (Yin, 1994).

3.3 Research Approach

The selection of the research approach depends on the research problem, research questions and the objectives of the research. According to Kothari (2004), there are three approaches to conduct research: qualitative, quantitative and mixed approaches. The quantitative approach involves the generation of data in quantitative form which can be subjected to rigorous quantitative analysis in a formal and rigid fashion. A qualitative approach to research is concerned with the subjective assessment of attitudes, opinions and behavior. Research in such a situation is a function of researcher's insights and impressions. The mixed approach utilizes the strengths of both qualitative and quantitative research. qualitative research brings in open-ended data without predetermined responses while quantitative research brings in closed-ended data (Creswell, 2009).

3.4 Population, sampling techniques and sample size

3.4.1 Population of the Study Area

The target population, as described by Adams et al. (2007) and Neuman (2011), represents the overarching group from which the researcher aims to draw conclusions. For this study, the target population comprises all government organizations in Addis Ababa that have implemented e-government procurement.

Based on data from the Ethiopian public procurement and property agency (EPPPA) e-GP portal (www.egp.ppa.gov.et), it was identified that a total of 122 government organizations had recently implemented e-government procurement. Therefore, the study population comprised 122 government organizations, with a specific focus on their procurement divisions.

3.4.2 Sampling Technique

There are two main types of sampling techniques: probability and nonprobability sampling. Probability sampling involves random selection, ensuring that all subjects in the target population have an equal chance of being selected (Maree, 2012; Wretman, 2010). Probability sampling is often associated with survey and experimental research strategies. On the other hand, nonprobability sampling involves case selection methods other than random selection (Singleton, 1993).

Therefore, in this study, the researcher employed a simple random sampling technique, which is a form of probability sampling. A simple random sampling technique ensured that each unit in the target population had an equal chance of being selected. This helped to ensure that the sample was representative of the target population, which was particularly important in research studies that required generalization of findings to the larger population. Subsequently, questionnaires were distributed to the procurement divisions in government organizations.

3.4.3 Sample Size and its Determination

The sample size is the segment or a subset of the population to which the researcher selected with due care and intended to generalize the result of the study to the entire population. In this study, a simple random sampling design was employed to determine the sample size and address the research objectives. The reason behind using simple random sampling was that in simple random sampling, all individuals had an equal chance of being selected.

Since the objective of the study focuses on factors affecting the implementation of e-GP, the sample frame comprises e-GP implementers, totaling 122 government organizations. To determine the sample size, the researcher used Taro Yamane's formula (1967), which calculates the sample size as:

$$n = \frac{N}{1 + N(e)^2}$$

Where **n** is the sample size,

N is the population size, and

e is the level of precision or sampling error = (0.05)

$$n = \frac{122}{1 + 122(0.05)^2} = 93$$

Thus, the sample size was determined to be 93 organizations, representing 76% of the total population. This methodology aimed to select a sample that accurately reflected the diversity of government organizations within the population, allowing for the generalization of study results.

3.5 Data Sources and Data Collection Methods

3.5.1 Techniques of Data Collection Tools

There are various methods available for data collection in research, with the choice of methodology depending on the research problem and underlying research philosophy. The instruments used for collecting the required data for this study were structured self-administered questionnaire. This survey instrument was designed to gather standardized data on factors affecting the implementation of e-GP in government organizations. Self-completed questionnaires were administered to procurement employees of targeted government organization. Questionnaire was preferred because it is an efficient and economical way of gathering data from a large number of respondents anonymously (encourage respondents to provide genuine information) as well as relatively easy to analyze the data (Kotari, 2004; Zohrabi, 2013).

There are three key sections to the questionnaires. The first section focused on the respondents' personal information, such as their educational level, sorts of job descriptions and experience, and so on. The second section of the questionnaire focused on gathering information from respondents concerning factors that affect e-GP implementation through a closed-end questionnaire. The third portion of the questionnaire looks at gathering information from sample respondents regarding e-GP implementation with closed ended questionnaires.

To administer the survey, questionnaires were distributed to 93 government organizations. Questionnaires were sent to designated officers via email and telegram. Additionally, a drop-and-pick method was employed, involving in-person visits to selected government organizations to distribute and collect paper-based questionnaires.

3.5.2 Source of Data

In conducting this study, the researcher made use of both primary and secondary data. The primary data were collected from employees working in government organizations. For background discussion and literature review, secondary sources of data were used from various publications, different journals, books, articles related to the subject under study, and other online materials.

3.6 Validity and Reliability

3.6.1 Validity

Content validity of the questionnaire was assessed based on established criteria following Kerlinger & Lee (2000). According to these authors, validity can be examined through content and construct validity. Content validity ensures that the survey items effectively cover the dimensions relevant to the research problem. In this study, the instrument underwent revision after receiving feedback from subject matter experts, including 2 university lecturers and e-GP users. Their feedback primarily focused on refining the questionnaire layout, simplifying technical jargon, and refining item phrasing to enhance clarity and reduce response bias. The modifications aimed to ensure that the questionnaire accurately captured respondents' perspectives on e-GP implementation. Ultimately, 93 questionnaires were distributed to the targeted respondents.

3.6.2 Reliability

The Cronbach's Alpha Test of Reliability was applied to test the reliability of the paradigms describing the variable of the study. The results were as follows: Implementation strategy, Suppliers Acceptance, and Functional requirement of the system had an Alpha score of 0.738, 0.806 and 0.727 respectively.

Nunnally and Bernstein (1994), pointed out that a score greater than 0.7000 indicate internal consistency that is high from the scale items. The general rule of thumb is that a Cronbach's alpha score of .7000 and above is acceptable, .80 and above is good, and .90 and above is excellent. The reached alpha scores from the test simply indicate acceptable levels of reliability of the measures. The table below shows the cronbanch reliability test results based on the data.

Table 1: Result of reliability analysis for the questionnaire

Contribution Factors	Number of attribute	Cronbach's alpha
Implementation strategy	9	0.738
Suppliers Acceptance	6	0.806
Functional requirement	6	0.727
EGP Implementation	8	0.789
Overall reliability	29	0.765

Source: Survey Data, 2024

3.7 Data Analysis Method

The data received from the respondents analyzed with the help of statistical software program: statistical package for social sciences (SPSS) version 25 to code, enter and compute the measurements of the multiple regressions of the study. The descriptive statistical results presented by tables, frequency distributions and percentages to give a condensed picture of the data. This was achieved through summary statistics, which includes the means, standard

deviations values which are computed for each variable in this study. Finally, the results of both descriptive statics results were presented by appropriate figures and tables.

3.8 Ethical Consideration

Research Ethics

Ethical clearance was obtained from the Logistics and Supply Chain Management Department of College of Commerce prior to fieldwork. Respondents was informed also clearly about the purpose of the study, the right to participate voluntarily, the right to ask questions including personal address of the researcher, the right to get the copy of the study, and the right to have their privacy respected; the right not to respond to question that they didn't want to respond too. On top of these, every necessary care has been taken not to put participants at risk of social, psychological, physical and economic harm.

CHAPTER FOUR

RESULTS, DISCUSSIONS AND INTERPRETATION

4.1 Introduction

This chapter provides the research findings based on the data collected from the field. The structure of this chapter is based on the research questions. All questionnaires returned by the respondents were used in data analysis.

4.2 Response Rate

Of the 93 questionnaires distributed, 75 were completed and returned, resulting in an 80.6% response rate. This high response rate is considered representative and aligns with Mugenda and Mugenda's (2012) assertion that a 50% response rate is sufficient for analysis and reporting. The questionnaires contained close-ended questions and were administered through a drop-and-pick-up-later approach, as well as using email and telegram.

4.3 Demographic Characteristics of the Respondents

In the questionnaire survey, each respondent was asked 5 questions regarding their demographic profile including gender, age, educational background, current positions and frequency of using the system. This section provides an analysis of the demographic characteristics of the respondents based on frequency analysis.

Table 2: Demographic Characteristics

Variable	Category	Frequency	Percent
Gender	Male	53	71
	Female	22	29
	Total	75	100
Age	21-30	13	17.3
	31-40	46	61.3
	41-50	14	18.7
	51 and above	2	2.7
	Total	75	100
Educational Level	Diploma	4	5.3
	Bachelor Degree	40	53.3
	Master's Degree	31	41.3
	Total	75	100
Position of respondents	Finance and Procurement Team Leader	2	2.7
	Procurement Team Leader	9	12
	Senior Procurement Officer	37	49.3
	Procurement Officer	24	32
	Total	75	100
Frequency of using the system	Daily	56	74.7
	Weekly	17	22.7
	Monthly	1	1.3
	Quarterly	1	1.3
	Total	75	100.0

Source: Survey Data, 2024

As the study result shows, the number of male respondents is greater than that of female respondents, with 71% being male and 29% being female. Specifically, out of 75 respondents, 53 are male while the remaining 22 are female. This indicates a higher proportion of male respondents compared to female respondents.

The age distribution results of the respondents show that among them, 17.3% were aged between 21 and 30 years, 61.3% were aged between 31 and 40 years, 18.7 were aged between 41 and 50 and 2.7 % were aged over 51 years. This indicates that there is a significant presence of younger workforce within the government organizations using e-GP systems and it shows younger employees tend to have different attitudes, expectations, and aptitude towards technology compared to older employees.

Regarding educational background of the respondents of those who responded to the questionnaire, 40 respondents (53.3%) hold a BSc degree, 31 respondents (41.3%) hold an MSc degree, and 4 respondents (5.3%) hold a diploma. The analysis reveals that the respondents are well-educated, implying they likely understood and responded to the questionnaire better than those with less educational background.

The job positions of the respondents show that among them, 2.7% are Finance and Procurement Team Leaders, 12 % are Procurement Team Leaders, 49.3 % are Senior Procurement Officers, 32% are Procurement Officers, and the remaining 4% hold other positions. This distribution indicates that the majority of respondents are Senior Procurement Officers, which signifies that the study has successfully targeted individuals with significant experience and responsibility in the procurement sector.

Respondents were requested their frequency of system usage. Accordingly, the result shows that 74.7% use the system daily, 22.7% use it weekly, 1.3% use it monthly and 1.3% use it quarterly. This distribution indicates that a significant portion of the respondents are frequent users of the e-government procurement system, with the majority using it on a daily basis. The high daily usage suggests that the system plays an integral role in their daily activities and is essential for routine procurement tasks. This frequent interaction implies a level of familiarity and proficiency among the users, which is crucial for the efficient operation of the procurement process. The low percentages of weekly, monthly, and quarterly users emphasize the system's importance in the respondents' regular workflows.

4.4 Descriptive Statics Results, Discussion and Interpretation

The weighted average categories for each result are shown in the Table below and each result is interpreted with the degree of agreement for each factor calculated accordingly.

- 1.00-1.79 Strongly Disagree =Very un influential
- 1.80-2.59 Disagree =Un influential
- 2.60-3.39 Neutral = moderately influential
- 3.40-4.19 Agree =Influential
- 4.20-5.00 Strongly Agree =Very Influential

Table 3: Respondents Perception on Implementation Strategy of e-GP (N=75)

Statement	Mean	Std. Deviation
The roadmap provided for the implementation of the e-GP system is easily understandable.	2.81	1.009
The e-GP implementation strategy in my organization has a clear timetable	2.97	.915
Adequate resources have been allocated for e-GP implementation.	2.79	.934
There is effective communication regarding the e-GP implementation within my organization	2.81	.940
All procurement activities in my organization are conducted through the e-GP system	2.75	1.140
There is continuous assessment of EGP implementation in my organization.	2.67	1.057

The Ethiopian Public Procurement and Property Agency (EPPPA) have adequate skilled EGP implementation team to run EGP implementation.	2.80	.885
There is collaboration among stakeholders from various departments or units within my organization throughout the e-GP implementation process	2.75	.840
There is continuous capacity-building programs provided in my organization to ensure that staff members are equipped with the necessary skills and knowledge to effectively use the e-GP system.	2.52	.891
Grand Mean	2.76	

Source: Survey Data, 2024

The findings of the implementation strategy reveal a moderate overall perception among respondents, with a grand mean score of 2.76 indicating a moderate level of satisfaction. The highest mean score of 2.97 for the clarity of the timetable suggests that respondents find the implementation schedule relatively clear. However, the standard deviation of 0.915 indicates some variation in this perception. The next highest mean scores for the understandability of the roadmap (2.81) and effectiveness of communication (2.81) reflect moderate satisfaction, though the standard deviations (1.009 and 0.940, respectively) indicate a diversity of opinion. Corroborating Luft and Shields' (2003) assertion that clear roadmaps and timeframes are crucial for phased approaches in e-GP implementation and Hassanien and Dale (2008) also mentioned that effective communication is critical for stakeholder engagement and successful implementation.

Conversely, the lowest mean score of 2.52 for continuous capacity-building programs indicates a perceived deficiency in ongoing training and development efforts. The standard deviation of 0.891, although moderate, suggests that this is a consistent concern among respondents, and this concern is supported by Casals (2004), who notes that continuous training is essential for maintaining system effectiveness and user competence. Similarly, the perception of continuous

assessment of e-GP implementation scored relatively low (mean = 2.67, SD = 1.057), indicating a need for more systematic evaluation processes. The mean score of 2.75, SD = 1.140, for the full adoption of the e-GP system suggests inconsistent application across the organization, highlighting potential integration challenges that can undermine overall effectiveness, as suggested by Wang and Zeng (2018) and Ondieki and Odongo (2019).

The results suggest that while there are some positive aspects of the implementation strategy, such as the clarity of the timetable and the skills of the implementation team, significant areas require improvement. The moderate scores for the understandability of the roadmap and the effectiveness of communication indicate that these areas are relatively well-regarded but still have room for enhancement. The variability in responses, as evidenced by the standard deviations, highlights the different experiences and perceptions among respondents, suggesting that the implementation process might not be uniformly effective across the organization.

The low scores for continuous capacity-building programs and continuous assessment of e-GP implementation are particularly concerning, as these are critical for ensuring the sustainability and effectiveness of the e-GP system. The inconsistency in the full adoption of the e-GP system points to potential challenges in integrating the system into all procurement activities, which could undermine the overall effectiveness of the e-GP implementation.

In conclusion, the e-GP implementation strategy in the organization shows moderate success but also suggests significant areas for improvement. Addressing the variability in perceptions and enhancing continuous capacity-building and assessment processes will be essential for achieving a more effective and consistent implementation of the e-GP system.

Table 4: Respondents Perception on Suppliers Acceptance of e-GP (N=75)

Statement	Mean	Std. Deviation
Suppliers actively participate in the e-GP procurement process throughout the bid process	2.53	1.004
There is trust between my organization and suppliers regarding e-GP transactions.	2.73	.977
Suppliers have demonstrated capacity to adapt the e-GP system	2.56	.889
Suppliers have demonstrated willingness to adapt to the e-GP system	2.57	.918
The e-GP portal provides suppliers with current procurement information	3.23	.879
Most Suppliers are aware of EGP services	2.47	.920
Grand Mean	2.68	

Source: Survey Data, 2024

The findings from the study indicate a mixed perception of suppliers' acceptance of the e-GP system. The highest mean score (3.23) for the provision of current procurement information through the e-GP portal suggests that respondents are relatively satisfied with the portal's effectiveness in providing up-to-date information to suppliers. However, the standard deviation of 0.879, while the lowest among the items, still indicates some variation in responses. This aligns with Wang and Zeng's (2018) definition of supplier acceptance of e-GP, which includes the supplier's willingness to use the e-GP system to submit bids, receive notifications, and complete transactions online.

In contrast, the lowest mean score (2.47) for supplier awareness of e-GP services highlights a significant area of concern. The standard deviation of 0.920 suggests moderate variability in responses, indicating that some suppliers may not be sufficiently informed about e-GP services. Mohd Ali et al. (2016) identified factors such as trust, perceived usefulness, and perceived ease of use as significant predictors of supplier acceptance of e-GP, underscoring the importance of supplier awareness and understanding of e-GP services.

Similarly, supplier participation in the e-GP procurement process scored relatively low (mean = 2.53, SD = 1.004), with a high standard deviation indicating diverse experiences and levels of participation among suppliers. Ondieki and Odongo (2019) suggested the importance of supplier participation and engagement in e-GP systems and identified trust, perceived usefulness, and compatibility as significant predictors of supplier adoption of e-GP. Supplier capacity (mean = 2.56, SD = 0.889) and willingness (mean = 2.57, SD = 0.918) to adapt to the e-GP system are also low, suggesting that while some suppliers are capable and willing to adapt, there is room for improvement in encouraging broader and more consistent adaptation. The trust between the organization and suppliers regarding e-GP transactions (mean = 2.73, SD = 0.977) is moderate, indicating that trust levels are neither particularly high nor low but still show some variability. .

The overall perception of suppliers' acceptance of the e-GP system is moderate, as reflected by the grand mean of 2.68. The high score for the e-GP portal's provision of current procurement information is a positive finding, indicating that this aspect of the system is functioning well. However, the low scores for supplier awareness, participation, capacity, and willingness to adapt to the e-GP system point to significant challenges that need to be addressed.

The variability in responses, particularly for supplier participation and trust, suggests that experiences with the e-GP system are not uniform across all suppliers. This indicates a need for targeted efforts to enhance supplier engagement and build trust in e-GP transactions. Improving supplier awareness of e-GP services is critical, as it is foundational for increasing participation and adaptation.

In conclusion, while there are positive aspects of the e-GP system, such as the provision of current procurement information, significant efforts are needed to improve supplier awareness, participation, and trust in the system. Addressing these areas will be crucial for achieving a more effective and comprehensive adoption of the e-GP system among suppliers.

Table 5: Respondents Perception on Functional Requirement of e-GP

Statement	Mean	Std. Deviation
e-GP system is easy to use	2.75	1.015
e-GP system integrate with other existing systems or platforms within my organization like IFMS	2.41	1.015
e-GP system is reliable in handling procurement transactions	3.08	.912
e-GP provides real time reports to users at different levels with different format i.e excel, pdf.	2.76	.998
e-GP has features that provide notifications or alerts to users based on specific events or conditions.	3.12	.986
e-GP system has security features for authentication mechanism to verify the integrity of the procurement process	3.07	.949
Grand Mean	2.86	

Source: Survey Data, 2024

The analysis of functional requirements for the e-GP system reveals several key insights supported by existing literature. The highest mean score (3.12) for features providing notifications or alerts indicates respondents find this aspect particularly effective, consistent with Lu and Shields (2003), who highlight the importance of automated notifications in enhancing efficiency and user engagement. The reliability of the e-GP system in handling procurement transactions (mean = 3.08, SD = 0.912) underscores its effectiveness in core functionalities, aligning with Sommerville's (2006) emphasis on system reliability and technical factors in ensuring successful implementation and user satisfaction.

Security features for authentication (mean = 3.07, SD = 0.949) reflecting a positive perception of the system's ability to maintain integrity and trust in procurement processes, corroborated by findings from Ondieki and Odongo (2019), who stress the necessity of robust security mechanisms in e-GP systems.

Conversely, the lowest mean score (2.41) for the integration of the e-GP system with other existing systems, such as the Integrated Financial Management System (IFMS), highlights a significant concern. Ochara (2010) identified system integration as a major challenge in e-GP implementation, requiring significant investment in time and resources, suggesting that improving integration capabilities is critical for seamless operation.

The mean and SD scores for ease of (2.75, 1.015) and provision of real-time reports in various formats (mean = 2.76, SD = 0.998) indicate moderate satisfaction, with high standard deviations reflecting varied user experiences. Lu and Shields (2003) and Casals (2004) emphasized the importance of user-friendly interfaces and robust reporting capabilities in e-procurement systems for enhancing usability and decision-making processes.

The grand mean of 2.86 suggests a moderately positive overall perception of the e-GP system's functional requirements. The higher scores for system reliability, notification features, and security mechanisms are encouraging, indicating respondents generally trust the system's core functionalities. However, the low score for system integration points to a critical area needing improvement. Enhancing integration and addressing the variability in ease of use and reporting features will be vital for increasing overall user satisfaction and system effectiveness.

In conclusion, while the e-GP system performs well in terms of reliability, security, and notification features, there is a clear need for improvement in system integration and ease of use. Addressing these issues will be vital for enhancing the overall effectiveness and user experience of the e-GP system, ensuring it meets the functional requirements comprehensively.

Table 6: Respondents Perception on e-GP Implementation

Statement	Mean	Std. Deviation
Implementation of e-GP increases level of transparency in procurement practices.	3.91	.701
Implementation of e-GP increases level of procurement efficiency.	3.84	.698
Implementation of e-GP improved confidentiality between the buyer and the supplier	3.52	.935
E-GP reduces bureaucracy in procurement process.	3.45	1.119
E-GP offer timely information to support Decision making	3.57	.825
E-GP promote accountability for users	3.53	.811
E-GP enhances market competition by providing equal opportunities to all suppliers	3.93	.811
E-GP facilitates better monitoring and evaluation of procurement activities	3.84	.901
Grand Mean	3.70	

Source: Survey Data, 2024

The findings indicate a generally positive perception of the e-GP system's impact on procurement practices. The highest mean score (3.93) for enhancing market competition suggests that respondents strongly believe the e-GP system provides equal opportunities to all suppliers, thereby fostering a competitive market environment. This aligns with the study, which highlights that e-GP implementation enhances equity by widening the market and providing equal opportunities to suppliers, as evidenced by its success in Singapore (Kwok & Lee, 2008).

The perception that e-GP increases transparency in procurement practices (mean = 3.91, SD = 0.701) aligns with a study conducted by Lee and Lee (2011) in South Korea, which found that e-GP implementation provided access to procurement information and reduced corruption. This is consistent with the broader trend where governments utilize electronic procurement systems to achieve transparency in acquiring goods and services, thereby fostering accountability and reducing opportunities for corrupt practices.

The mean scores for increasing efficiency (3.84, SD = 0.698) and facilitating better monitoring and evaluation (3.84, SD = 0.901) further highlight significant perceived benefits of the e-GP system. This is consistent with findings from Malaysia, where e-GP implementation reduced procurement cycle times significantly, enhancing overall efficiency (Abdullah & Abdul Samad, 2012).

However, the lowest mean score (3.45) for reducing bureaucracy, with the highest standard deviation (1.119), indicates mixed perceptions about the e-GP system's ability to streamline procurement processes. This suggests challenges similar to those faced in India, where slow processing of tenders and lack of standardization hindered e-GP effectiveness (Upadhyay & Singh, 2016). The mean scores for improving confidentiality (3.52, SD = 0.935), offering timely information (3.57, SD = 0.825), and promoting accountability (3.53, SD = 0.811) are moderately high, reflecting generally positive but varied opinions.

The overall high perception of e-GP implementation, as indicated by the grand mean of 3.70, is supported by its recognized benefits in promoting fair and open procurement practices, enhancing efficiency, and increasing transparency. These benefits are crucial for building trust and integrity in procurement processes.

The consistently positive views on the system's efficiency and its role in monitoring and evaluation further underscore its effectiveness in improving procurement operations. However, the mixed perceptions regarding the reduction of bureaucracy highlight an area that may require additional focus and improvement. Streamlining bureaucratic procedures can significantly enhance the overall efficiency and user experience of the e-GP system.

In conclusion, the e-GP system is perceived to have a substantial positive impact on transparency, market competition, efficiency, and monitoring of procurement activities. While the system also supports confidentiality, timely information, and accountability, efforts to further

reduce bureaucratic hurdles could enhance its overall effectiveness. These insights suggest that while the implementation of the e-GP system has been largely successful, there are areas where continued improvements can further optimize its benefits.

4.5 Regression Analysis on the effect of Factors on the Implementation of e-GP

The multiple liner regression model presented in the analysis provides insights into the relationship between the independent variables (implementation strategy, suppliers' acceptance, functional requirements of e-GP) and the dependent variable implementation of e-GP.

Table 7: Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Studentized Residual	.066	75	.200*	.982	75	.347

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Source: Survey Data, 2017

The result obtained from Shapiro-Wilk test indicated that all the variables had a p value greater than 0.05, meaning that the variables involved the study follow a normal distribution; therefore, it can be concluding that the residual value is normally distributed so that the regression analysis procedure have been fulfilled.

Table 8: Collinearity Statistics

	Collinearity Statistics	
	Tolerance	VIF
Functional Requirement	.631	1.585
Suppliers Acceptance	.671	1.490
Implementation Strategy	.636	1.572

Source: Survey Data, 2024

As indicated in the above table all the VIF column values are less 5 and tolerance values are greater than 0.2 respectively, indicating that there is no multi-co linearity influence between the explanatory variables.

Test for outliers

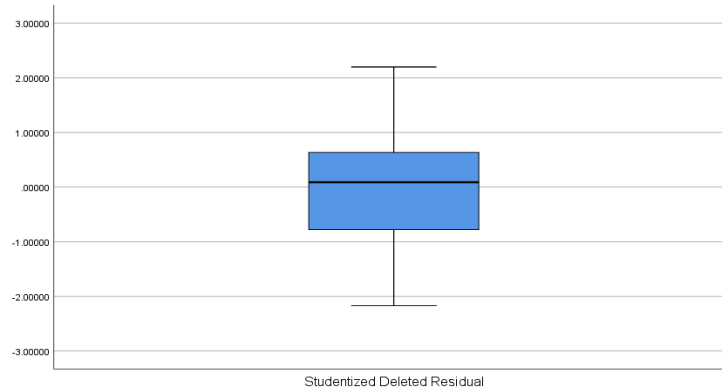


Figure 2: Test for outliers

Source: Survey Data, 2024

In the above figure, there are no circles or asterisks on either end of the box plot, indicating that no outliers are present.

Test of heteroscedasticity

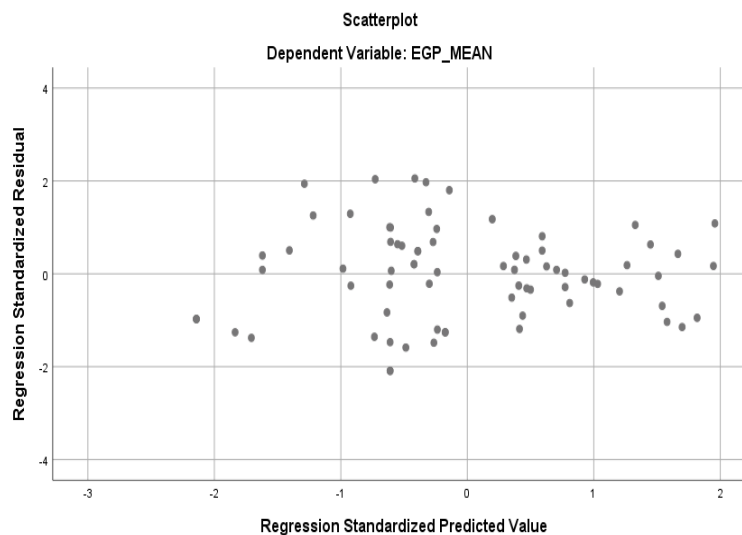


Figure 3: Test of heteroscedasticity

Source: Survey Data, 2024

Based on the scatterplot output above, the points appear diffused and do not form a clear specific pattern, indicating that the regression model does not exhibit a heteroscedasticity problem.

Table 9: ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.469	3	3.490	21.316	.000 ^b
	Residual	11.624	71	.164		
	Total	22.094	74			

a. Dependent Variable: EGP_MEAN

b. Predictors: (Constant), IS_MEAN, SA_MEAN, FR_MEAN

* IS- Implementation Strategy, SA-Suppliers Acceptance, FR- Functional Requirement and EGP- EGP implementation

Source: Survey Data, 2024

Table 9 shows a p-value of .000, indicating that the regression model is statistically significant. This means that the predictors (IS_MEAN, SA_MEAN, and FR_MEAN) collectively have a significant effect on the dependent variable (EGP_MEAN).

Table 10: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.688 ^a	0.474	0.452	0.40463

Source: Survey Data, 2024

According to the findings in the table above, the model has an adjusted r-squared value of 0.452, indicating that the independent variables explain approximately 45% of the variance in the dependent variable. Therefore, further research should be conducted to investigate the other factors which contribute to that 55% of the variance which is not included in the study.

Table 11: Coefficient Result

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.170	.267		8.131	.000
Functional Requirement _MEAN	.345	.093	.403	3.716	.000
Supplier Acceptance _MEAN	.418	.086	.509	4.842	.000
Implementation Strategy _MEAN	-.210	.108	-.210	-1.947	.055

Dependent Variable: e-GP Implementation

Source: Survey Data, 2024

The standardized regression coefficients (beta) indicate that FR (functional requirements) has a coefficient of 0.403 and SA (suppliers' acceptance) has a coefficient of 0.509, suggesting strong positive relationships with the implementation of e-GP. Conversely, IS (implementation strategy) has a coefficient of -0.210, indicating a negative relationship. This implies that as functional requirements and suppliers' acceptance increase, e-GP implementation tends to increase. Conversely, implementation strategy appears to negatively impact e-GP implementation.

The t-statistics and their associated p-values show that the regression coefficients for functional requirements (t = 3.716, p = 0.000) and suppliers' acceptance (t = 4.842, p = 0.000) are statistically significant at the 5% level, indicating that these variables make significant contributions to the model. The coefficient for implementation strategy (t = -1.947, p = 0.055) is not statistically significant at the 5% level, suggesting that there is no strong evidence to conclude that implementation strategy significantly impacts e-GP implementation.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the study, discussion, and conclusions drawn from the findings and finally recommendations for practice and further research on the problem.

5.2 Summary of the Findings

The study surveyed 75 respondents, with 71% male and 29% female. The age distribution was predominantly between 31-40 years (61.3%), followed by 21-30 years (17.3%), 41-50 years (18.7%), and 51 years and above (2.7%). Most respondents held a Bachelor's degree (53.3%) or a Master's degree (41.3%). Job positions varied, with 49.3% as Senior Procurement Officers, 32% as Procurement Officers, and others in leadership roles. The majority (74.7%) used the e-GP system daily, indicating high engagement and familiarity with the system.

Functional Requirements

The analysis revealed that functional requirements have a strong positive relationship with the implementation of e-GP, evidenced by a standardized regression coefficient (beta) of 0.403. The t-statistic of 3.716 and a p-value of 0.000 confirm the statistical significance of this relationship.

This finding underscores the importance of well-defined functional requirements in the successful implementation of e-GP systems in government organizations. The positive relationship between functional requirements and e-GP implementation highlights that when the functional requirements are well-defined, the e-GP system is more likely to meet the users' needs and expectations. This alignment facilitates smoother and more efficient procurement processes within government organizations.

Key features of the e-GP system, such as a user-friendly interface, integration with existing systems, real-time data access, and the capability to generate various reports should be included. Ensuring comprehensive functional requirements can mitigate potential issues, leading to higher user satisfaction and more effective e-GP implementation.

In summary, the significant positive relationship between functional requirements and e-GP implementation indicates that government organizations must prioritize defining comprehensive and consistent functional requirements. Doing so ensures the e-GP system aligns with user needs, thereby facilitating effective and efficient procurement processes.

Suppliers' Acceptance

Suppliers' acceptance was found to have the strongest positive relationship with e-GP implementation, with a beta coefficient of 0.509. The t-statistic of 4.842 and a p-value of 0.000 indicate that this relationship is highly statistically significant.

This finding suggests that the willingness and ability of suppliers to actively engage with the e-GP system are critical for its effective implementation. The high beta coefficient indicates a substantial improvement in e-GP implementation effectiveness as suppliers' acceptance increases.

Active supplier participation significantly enhances the efficiency and reliability of the procurement process. When suppliers find the e-GP system useful, easy to use, and trustworthy, they are more likely to engage fully with the system, submitting bids, receiving notifications, and completing transactions online.

Government organizations can enhance the acceptance process by leveraging digital platforms and fostering effective communication and collaboration between buyers and suppliers. Therefore, the successful implementation of e-GP systems hinges significantly on supplier acceptance, making it a pivotal factor for achieving the desired outcomes in government procurement.

Implementation Strategy

In contrast to the positive relationships observed with functional requirements and suppliers' acceptance, the implementation strategy was found to have a negative relationship with e-GP implementation, with a beta coefficient of -0.210. The t-statistic of -1.947 and a p-value of 0.055 indicate that this negative relationship is not statistically significant, though it is marginally close to the 5% significance level.

This finding suggests that if the current strategy fails to adequately assess and allocate resources, it may lead to delays and failures, reflecting negatively on the overall implementation. Poor

communication can also lead to misunderstandings, lack of support, and resistance from key stakeholders, all of which can undermine the implementation strategy. Inadequate pre-testing and integration processes can lead to unforeseen challenges during actual implementation, contributing to inefficiencies and setbacks. Additionally, if time frames and deadlines are not properly aligned with ground realities, the implementation strategy may falter.

The negative relationship observed in the study implies that the current strategies for implementing e-GP systems may be inadequately designed or executed, potentially hindering the effective adoption and utilization of these systems. Therefore, a thorough review and possibly a re-evaluation of the strategies being employed to implement e-GP systems is necessary to address any deficiencies and enhance their effectiveness.

5.3 Conclusion

Based on the results and discussion, it is evident that the e-Government Procurement (e-GP) system implementation in the organization has shown varying degrees of success and challenges across different aspects. The implementation strategy process received a moderate overall perception among respondents. Areas such as the clarity of the timetable and the skills of the implementation team were positively regarded, while the continuous capacity-building programs and continuous assessment of e-GP implementation scored relatively low, indicating a need for improvement in these critical areas.

Regarding suppliers' acceptance of the e-GP system, there is a mixed perception. While the system effectively provides current procurement information to suppliers, there are significant challenges in terms of supplier awareness, participation, and willingness to adapt to the e-GP system. In terms of functional requirements, the e-GP system was perceived positively in aspects such as reliability in handling procurement transactions and features for notifications or alerts. However, the integration of the e-GP system with other existing systems or platforms was identified as a significant area of concern.

The impact of the e-GP system implementation on various procurement aspects was generally positive, with high perceived benefits in increasing transparency, enhancing market competition, and promoting accountability. However, the reduction of bureaucracy emerged as an area requiring further attention and improvement.

From the summary of findings, it is clear that functional requirements and suppliers' acceptance have a strong positive relationship with e-GP implementation, emphasizing the importance of well-defined functional requirements and active supplier participation for successful implementation. However, the implementation strategy was found to have a negative relationship with e-GP implementation, suggesting the need for a thorough review and re-evaluation of the strategies being employed.

In conclusion, while the e-GP implementation has demonstrated successes in certain areas, there are significant areas for improvement across the implementation strategy, suppliers' acceptance, and functional requirements. Addressing the identified challenges and leveraging the positive aspects will be vital for achieving a more effective and consistent implementation of the e-GP system in government organizations.

5.4 Recommendation

Enhance Functional Requirements

Government organizations should focus on clearly defining and detailing the functional requirements for e-GP systems. This involves specifying the necessary features, performance standards, and user requirements to ensure the system meets the needs of all stakeholders. Additionally, providing comprehensive training for users is essential to ensure they understand how to utilize the functionalities of the e-GP system effectively, which can improve user satisfaction and system utilization.

Improve Suppliers' Acceptance

Foster stronger relationships with suppliers through regular communication and feedback mechanisms. This can help address their concerns promptly and encourage their active participation in the e-GP system.

Streamline procurement processes to facilitate quick and efficient responses from suppliers. This can include simplifying documentation requirements and reducing administrative burdens.

Re-evaluate Implementation Strategy

Conduct a thorough review of the current implementation strategies to identify areas that may be contributing to the negative impact on e-GP implementation. Consider adopting a more flexible and adaptive approach that can be tailored to the specific needs of the organization.

Engage all relevant stakeholders, including end-users, suppliers, and procurement officers, in the strategy development process. Their input can provide valuable insights and contribute to a more effective implementation plan.

Further Research

This research is not exhaustive, and future researchers should investigate other predictor variables such as resource, management commitment, employee and etc. not covered within the scope of this study. Additionally, it is recommended to undertake similar studies in government organizations located outside of Addis Ababa.

Policy Development

Develop policies that support the implementation and continuous improvement of e-GP systems that address issues related to data security, system integration, and user support.

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APPENDIX

APPENDIX A. QUESTIONNAIRE

ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE

LOGISTICS AND SUPPLIES CHAIN MANAGEMENT

APPENDIX: SURVEY QUESTIONNAIRE

Dear Sir/Madam

The intent of this questionnaire is to explore information regarding factors affecting implementation of e-GP in your organization. The information you provide in response to the items in the questionnaire will be used as part of the data needed for a study of the factors affecting the implementation of e-GP in government organization in Ethiopia. The results of the study are anticipated to the understanding and solving of the factors affecting e-GP implementation in government organization for effectiveness implementation throughout Ethiopia.

If you wish to withdraw or have any questions, please feel free to contact Wubet Girma at +251-911-360716 or send an email to: w_girma@yahoo.com. I would like to assure you that the information you provide will be accessible only to the researcher. And please return the questionnaire directly to the researcher. Your involvement is regarded as a great input to the quality of the research results. Hence, I believe that you will enlarge your assistance by participating in the study.

Your honest and thoughtful response is valuable

Thank you for your participation

Kind regards,

Wubet Girma, MSC student

Section A. Demographic Information

Directions:

You will be asked a few demographic questions, no need of writing your name. Please respond by putting ‘✓’ in boxes.

I would like to thank you in advance for your cooperation in filling this questionnaire.

1. Sex: Male Female

2. Age 20 and below: 21-30 31-40
 41-50 51 and above

3. Educational level:

Primary Education Secondary Education Certificate
 Diploma Bachelor Degree Masters Degree

If other, please specify_____

4. Your current position

- Finance and Procurement Team Leader**
- Procurement Team Leader
- Senior Procurement Officer
- Procurement Officer

If other, please specify_____

5. How frequently do you use e-GP as part of your work?

Daily Weekly Monthly Quarterly Annually

Section B: Factor Affecting Implementation of EGP

The table below indicates statements regarding **Implementation Strategy of e-GP**. Please indicate to what extent the statement applies by placing (√) inside the appropriate box Where, 1- (Strongly Disagree), 2- (Disagree), 3-(Not Sure), 4-(Agree), 5-(Strongly Agree).

No.	Statements	1	2	3	4	5
1	The roadmap provided for the implementation of the e-GP system is easily understandable.					
2	The e-GP implementation strategy in my organization has a clear timetable					
3	Adequate resources have been allocated for e-GP implementation.					
4	There is effective communication regarding the e-GP implementation within my organization.					
5	All procurement activities in my organization are conducted through the e-GP system.					
6	There is continuous assessment of EGP implementation in my organization.					
7	The Ethiopian Public Procurement and Property Agency (EPPPA) have adequate skilled EGP implementation team to run EGP implementation.					
8	There is collaboration among stakeholders from various departments or units within my organization throughout the e-GP implementation process					
9	There is continuous capacity-building programs provided in					

	my organization to ensure that staff members are equipped with the necessary skills and knowledge to effectively use the e-GP system.					
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The table below indicates statements regarding **Suppliers Acceptance of e-GP**. Please indicate to what extent the statement applies by placing (√) inside the appropriate box Where, 1- (Strongly Disagree), 2- (Disagree), 3-(Not Sure), 4-(Agree), 5-(Strongly Agree).

No.	Statements	1	2	3	4	5
1	Suppliers actively participate in the e-GP procurement process throughout the bid process					
2	There is trust between my organization and suppliers regarding e-GP transactions.					
3	Suppliers have demonstrated capacity to adapt the e-GP system					
4	Suppliers have demonstrated willingness to adapt to the e-GP system					
5	The e-GP portal provides suppliers with current procurement information					
6	Most Suppliers are aware of EGP services					

The table below indicates statements regarding **Functional Requirements of EGP**. Please indicate to what extent the statement applies by placing (√) inside the appropriate box Where, 1- (Strongly Disagree), 2- (Disagree), 3-(Not Sure), 4-(Agree), 5-(Strongly Agree).

No.	Statements	1	2	3	4	5
1	e-GP system is easy to use					
2	e-GP system integrate with other existing systems or platforms within my organization like IFMS					
3	e-GP system is reliable in handling procurement transactions					
4	e-GP provides real time reports to users at different levels with different format i.e excel, pdf.					
5	e-GP has features that provide notifications or alerts to users based on specific events or conditions.					
6	e-GP system has security features for authentication mechanism to verify the integrity of the procurement process					

Section C: EGP Implementation

The table below indicates statements regarding **Implementation of EGP**. Please indicate to what extent the statement applies by placing (√) inside the appropriate box Where,1- (Strongly Disagree), 2- (Disagree), 3-(Not Sure), 4-(Agree), 5- (Strongly Agree).

No.	Statements	1	2	3	4	5
1	Implementation of e-GP increases level of transparency in procurement practices.					
2	Implementation of e-GP increases level of procurement efficiency.					
3	Implementation of e-GP improved confidentiality between the buyer and the supplier					
4	E-GP reduces bureaucracy in procurement process.					
5	E-GP offer timely information to support Decision Making.					
6	E-GP promote accountability for users					
7	E-GP enhances market competition by providing equal opportunities to all suppliers					
8	E-GP facilitates better monitoring and evaluation of procurement activities					

Additional comments
