ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

FACTORS AFFECTING THE ADOPTION OF E-PROCUREMENT IN PUBLIC
ORGANIZATIONS:

THE CASE OF ADDIS ABABA CITY ROADS AUTHORITY

BY: DAWIT TEKLU

JUNE, 2020

SMU

ADDIS ABABA

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UNDER THE GUIDANCE OF TEMESGEN BELAYNEH (PhD)

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Contents

ABSTRACT

Businesses face many challenges in today's fast-changing uncertain global climate (Lee and Gebauer,2006); Many organizations have turned their attention to Electronic Commerce technology to improve the efficiency of their business processes. The most prominent form of e-commerce system concerning interactions between businesses that have recently received attention is called electronic procurement (e-procurement) system (Hawking and Stein 2004).

The purpose of this research is to examine factors affecting the adoption of e-procurement in AACRA and it is also focuses on the benefits of e-procurement adoption. Both primary and secondary sources of data were used for this study. The primary data was collected with structure questionnaire and interview and the secondary data was held through books, articles, online dissertation, and other publications. The study was done by distributing 136 questionnaires and out of which 121 questionnaires which represented 89% of response rate were gathered. So 121 completely responded questionnaires were utilized for the analysis of the study. Interview was also made with AACRAs' Organization Change & Support Service Directorate Director General and with Directors from Goods Procurement Directorates, Engineering Procurement Directorates and Teams from Goods Procurement. SPSS software 22 version was used to analyze the collected data by using descriptive statistics such as frequencies and percentages and correlation analysis. The findings from descriptive statistics indicate that the Legal Frameworks, Management Support and Employee Commitment, Information Technology Infrastructure and Supplier Acceptance are found factors that affecting adoption of e-procurement in AACRA. In addition the result revealed that if e-procurement could adopt in AACRA, the organization would be benefited. On the other hand the findings from correlation model indicate that availability of government policy, legal frameworks, top management commitment & support, and employee commitment has significant relationship with readiness of the adoption of e-procurement in AACRA. In addition, sufficiency of existing ICT infrastructure, compatibility of existing hardware & software and availability of system used by supplier has also significant relationship with readiness of the adoption of e-procurement in AACRA.

Keywords:

Adoption, Procurement, E-Procurement

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LIST OF ACRONYMS / ABBRIVATIONS

AACRA: Addis Ababa City Roads Authority

B2B: Business to Business

CIPS: Chartered Institute of Procurement and Supply

EDI: Electronic Data Interchange

E-Procurement: Electronics Procurement

GDP: Gross Domestic Products

ICT: Information and Communication Technology

IT: Information Technology

SPSS: Statistical Package for Social Science

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DECLARATION

I, the undersigned, declare that this thesis is my original work and has not been presented for a degree in any other University. All sources of materials used for the thesis have been duly acknowledged.

Dawit Teklu

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St. Mary's University, School of Graduate Studies

June, 2020

ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

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Advisor   **Signature**

St. Mary's University   **June, 2020**

CHAPTER ONE

1. INTRODUCTION

1.1 Background of the study

The most prominent form of e-commerce system concerning interactions between businesses (Business-to-Business /B2B e- Commerce) that have recently received attention is called electronic procurement (e-procurement) system (Hawking and Stein 2004). It automates an organization's purchasing process, reduces transaction costs, improves inter organizational coordination within the supply chain, improves relationships with business partners and offers competitive sourcing opportunities for the buyer organizations (Subramanian and Shaw 2002). The widespread adoption of e-procurement systems by organizations in both private and public sectors will lead to national performance improvement and productivity growth and it has the potential to increase the gross domestic products (GDP) significantly (Hawking and Stein 2004).

A recent study of 137 large contracts in Ethiopia found that it took, on average, 219 days from advertising to contract signature to complete the procurement process of a government financed contract. Also, that 36 percent of the time was spent on administrative reviews and approvals. All processes are manual and most of them are repetitive for off-the- shelf goods. Market research and data management to monitor performance is weak; oversight over procurement activities is weak with low audit coverage. The study shows that there are significant delays in International Competitive Bidding (ICB) contracts for goods, works and consultants for government funded contracts, as well as for bank- financed projects. And according to Ministry of Finance about 53 percent of the Government of Ethiopia's annual budget is expended through procurement. So introducing e-procurement is expected to help manage the expenditure of the huge public fund through public procurement with greater transparency, efficiency and effectively enhancing compliance, providing a procurement platform with equal treatment to all bidders, applying same rule of law, maintains integrity of the government buyers as well as private sector, and the same time raising awareness of the general public about the expenses of the government.

The origin of e-procurement or "electronic procurement'' begins in the 1980s with the development of electronic data interchange (EDI). This development, while ancient by today's

standards, was ground breaking for the time. EDI allowed customers and suppliers to send and receive purchase orders (and invoices as well) using call forward networks, and eventually email. Blog procurify.com.>2014/08/11> e-procurement.

According to CIPS' website E-procurement is; "The combined use of electronic information and communications technology (ICT) in order to enhance the links between customer and supplier, and with other value chain partners, and thereby to improve external and internal processes. E-procurement is a key component of e- business and e-commerce.

According to Federal public procurement & property administration Agency of Ethiopia, only Bahar Dar University and Ministry of Communication and Information Technology have developed systems and started using E-procurement. Both organizations use the system internally for their own procurement purposes. As the system has begun 20 years back, certainly our country is late to develop it. Therefore the country needs to embark on capacity building arrangements and modernize the procurement system by employing the technology.

Addis Ababa City Roads Authority, that is a state owned organization, was established on March, 1998 by regulation No.7/1998 to be administered by board of directors to construct, maintain and administer the road works in Addis Ababa. Contractors, Consultants, Suppliers and Government bodies are strategic partners of the organization.

The Authority financial resource is from the City Administration, Donors and the Federal Road Fund. Its annual budget is above 5 billion Ethiopian Birr of which above 65% of the budget is expended through goods, services, works and consultancy procurement.

So If the Authority introduces E-procurement, it may save a large amount of money with the efficiency gain through the automation of the procurement processes.

Therefore, this study will examine factors influencing the adoption of e-procurement in Addis Ababa City Roads Authority.

1.2 Statement of the Problem

Procurement professionals have seen the benefits of the widespread use of the internet and IT systems in general. The internet has opened up a global market place for both consumers and professional buyers alike. So now a day, the world is focused on electronic commerce. In this case, the researcher focused on E-procurement that is a key component of E-commerce.

E-procurement is the generic term applied to the use of integrated database systems and wide area (commonly Web- based) network communication systems in part or all of the purchasing process.

E-procurement is the business-to-business or business to consumer or business to government purchase of goods, work and services through the internet as well as other information and networking systems, such as electronic data interchange. (Wikipedia, the free encyclopedia)

According to Ethiopian Ministry of Finance a strategy document and road map report on introducing the electronic government procurement system 2018, there are problems in the public procurement sector in Ethiopia that includes:-

- Challenges in procurement planning and implementing the plans.
- Lack of transparency in process.
- Delay In procurement evaluation and contract award process.
- Lack of accountability.
- Poor contract management.
- Inconsistency in using procurement standards.
- Poor coordination between and among procuring entities.
- Poor data management and lack of access to procurement information.

Addis Ababa City Roads Authority as a public organization shares most of the above problems according to AACRA Procurement & Property Administration Directorate. So by introducing e-procurement, the organization may reduce those problems.

Indeed in Ethiopia E-procurement is a new phenomenon; studies in this system are remains untouched. So, it is expected some challenges on this issue. According to AACRA Procurement & Property Administration Directorate, Engineering Procurement Directorate and Procurement Section Officials the following are some challenges to adopt the e-procurement In AACRA:-

- Lack of government policies and legal frame works
- Information Technology Readiness
- Availability of professional man power
- Lack of Supplier understanding
- Awareness on e-procurement

Recently, Ministry of Finance of Ethiopia has developed a strategy document and road map for introducing the electronic government procurement system that covers a period of five years from 2018 to 2023. The result of the study is expecting to improve the existing procurement process by promoting to new forms i.e. e- procurement in the future.

This study therefore will be aiming to examine the factors that affect the adoption of E-procurement and will try to realize the benefits of E-procurement in Addis Ababa City Roads Authority.

1.3 Basic Research Questions

The research questions that the researcher try to answer are:-

1. How Legal frameworks affect the adoption of E-procurement in AACRA?
2. How Information and Communication Infrastructure affect the adoption of E-procurement in AACRA?
3. How Management Support & Employee Commitment affect the adoption of E-procurement in AACRA?
4. How Supplier Acceptance affect the adoption of E-procurement in AACRA?
5. How can the E-procurement adoption improving the existing procurement in AACRA?

1.4 Hypothesis Development

The researcher used relational hypothesis to describe the relationship between the following variables. Those variables were the availability of Government Policy, Legal frameworks, Top Mgt Commitment and Support, Employee Commitment, System used that involves suppliers, Sufficiency of existing ICT infrastructure, Compatibility of existing hardware and software and satisfaction of suppliers with the readiness of the adoption of e-procurement in AACRA.

H1: The **Availability of Government Policy** at AACRA significantly affects Readiness of the Adoption of E-Procurement in AACRA.

H2: The **Availability of Legal frameworks** at AACRA significantly affects Readiness of the Adoption of E-Procurement in AACRA.

H3: The **Availability of Top Mgt Commitment & Support** at AACRA significantly affects Readiness of the Adoption of E-Procurement in AACRA.

H4: The **Availability of Employee Commitment at** AACRA significantly affects Readiness of the Adoption of E-Procurement in AACRA.

H5: The **Sufficiency of existing ICT infrastructure** at AACRA significantly affects Readiness of the Adoption of E-Procurement in AACRA.

H6: The **Compatibility of existing hardware and software** at AACRA significantly affects Readiness of the Adoption of E-Procurement in AACRA.

H7: The **Availability of System used by** at AACRA significantly affects Readiness of the Adoption of E-Procurement in AACRA.

H8: The **satisfaction of suppliers** at AACRA significantly affects Readiness of the Adoption of E-Procurement in AACRA.

1.5 Objectives of the study

1.5.1 General Objective

The main Objective of this research is to examine factors affecting the adoption of E-procurement in AACRA.

1.5.2 Specific Objectives

- To examine the influence of legal frameworks to adopt e-procurement in AACRA.
- To examine the influence of Information and Communication Infrastructure to adopt e-procurement in AACRA.
- To examine the influence of Management Support & Employee Commitment to adopt e-procurement in AACRA.
- To examine the influence of Supplier Acceptance to adopt e-procurement in AACRA.
- To identify the benefits of e-procurement adoption

1.6   Significance of the study

There are very limited empirical investigations made on factors affecting the adoption of e-procurement. Therefore, this study may provide a ground for the other researchers to investigate the research gaps in the area. High amount of AACRA annual budget is expended through procurement so it should be administered properly. In this regard, this study will help existing procurement practices of AACRA by suggesting a better way of procurement administrating through e-procurement.

1.7 Scope and Limitation of the study

1.7.1 Scope of the study

This study will conduct at AACRA which is located in Addis Ababa. The scope of the research is to examine factors influencing to adopt E-procurement in AACRA.

1.7.2 Limitation of the study

There is lack of previous studies in the country regarding factors affecting the adoption of e-procurement in public organization. In this regard, it limits the researcher not to have enough references which helps for starting point to conduct the research.

1.8   Organization of the study

This research has five chapters:

Chapter one discuss the introduction part of the research project. It includes background of the study, statement of the problem, research questions, objectives, scope and limitations of the study and briefly explains about the importance or contribution of the research.

Chapter two is a literature review of the study. It focuses on the literature review of the issues around E-procurement from secondary sources such as books, journal, articles and so on.

Chapter three is described the research methodology which included research design and approach, population, sample, data collection methods and data analysis method.

Chapter four is presented the results of the analysis by using the data and results generated from the procedures set in chapter three.

Finally, chapter five concludes with overall findings and provides the recommendations of the present research.

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter entails the literature of other scholars on factors affecting the adoption of e- Procurement in organizations. The study is to enrich the already existing work on e- Procurement attainable through critical consideration of other scholars' work. The researcher tried to express the findings and establish knowledge gap with a view to enhancing factors affecting the use of e- Procurement in organizations.

2.2 Theoretical framework

2.2.1 Concept of E-Procurement

Businesses face many challenges in today's fast-changing uncertain global climate (Lee and Gebauer, 2006); Many organizations have turned their attention to Electronic Commerce Technology to improve the efficiency of their business processes.

The most prominent form of e-commerce system concerning interactions between businesses (Business-to-Business /B2B e- Commerce) that have recently received attention is called electronic procurement (e-procurement) system (Hawking and Stein 2004). It automates an organization's purchasing process, reduces transaction costs, improves inter organizational coordination within the supply chain, improves relationships with business partners and offers competitive sourcing opportunities for the buyer organizations (Subramanian and Shaw 2002). The widespread adoption of e-procurement systems by organizations in both private and public sectors will lead to national performance improvement and productivity growth and it has the potential to increase the gross domestic products (GDP) significantly. (Hawking and Stein 2004).

Different Authors and Scholars give different definition for the term E-Procurement.

E-procurement is the combined use of electronic information and communications technology (ICT) in order to enhance the links between customer and supplier, and with other value chain partners, and thereby to improve external and internal purchasing and supply management processes, (Chartered Institute of Procurement and Supply, (CIPS), 2013).

Moon (2005) stated that e-procurement is a described as a comprehensive process in which IT system has been used to establish agreements for the acquisition of products or services (contracting) or purchase products or services in exchange of payment (purchasing). E-procurement has various elements like electronic ordering, internet bidding, purchasing cards, reverse auctions and integrated automatic procurement systems.

Raghavan and Prabhu (2004, P. 732) referred to the CIPS´s definition of e-procurement as the "electronic acquisition of goods and services including all processes from the identification of a need to purchase of products , to the payment for these purchases including post-contract/payment activities such as contract management, supplier management and development".

E-procurement is the modern way of using electronic tools, such as the Internet and e-mail for business-to-business purchases online. Besides, it also helps to supply and provide services for sales online using Internet-based technology. Another definition is where supplier and buyer exchange goods and services using the Internet and IT applications. Kishor et al. (2007) defined e-procurement as the use of Internet-based Information and Communication Technologies (ICT) in order to carry out one or more transactional or strategic procurement activities.

E-procurement is not just about the delivery of an "e-"service offering by governments. E-procurement entails a strategic shift in the delivery and management of a key business service supported by governance, policies, legal frameworks and requiring leadership, support and political will to institute change.

The practice of e-procurement to the public sector is differentiated among groups of countries. Some Governments have already established refined and complex systems of e-procurement for saving time and energy of government officials and creating an enabling environment for competitive bidding while avoiding corruption. Some other Governments, on the other hand, seem to be struggling for funding and legal frameworks to build the necessary physical infrastructure for introducing e-procurement systems. Awareness is made that "one-size-fits all" approaches are not compatible with the diversity of procurement situations and the current reality of both developed and developing countries.

Previous studies identified e-procurement as representing a priority e-government agenda around the world. One of the definitions stated that the implementation of e-procurement is a compliment of e-government system of a country (Schedler, 2007). It parts of the new an integrated procurement approach that has been introduced towards improving sustainability and project delivery performance (Nawi et al., 2014). Theoretical understanding of e-procurement has been defined as a general model of the system. Another more accurate definition of e-procurement is by understanding the roles of information technology (IT) through using the software and hardware in running the procurement process, while knowing very well that the role of the software and hardware will make the concept of e-procurement easier to understand (Borins, 2002).

2.2.2 Benefits of E-Procurement

Many benefits of e- procurement have been written as achieved or expected in the academic literature. Among different benefits the most common ones are written on E- Procurement strategy of Ethiopia and action plan, 2018. (Prepared by Dr. Rajesh Kumar Shakya, e-GP Specialist, **Federal Public Procurement & Property Administration Agency, Ethiopia**)

a. Value for Money

- E-procurement allows for increased quality supplies, because larger markets are made accessible, and bidders compete not only on cost, but also on quality.
- Further Savings arise from: savings made due to reduced cost of procurement stemming from more efficient use of innovative procurement methods as well as simplification of internal administrative processes.
- Reduced transactional costs on bidders, which translate into lower prices quoted.
- Increased competition amongst bidders since the bidding process is open to all potential providers.

b. Efficiency Gains:

- Reduction of the procurement cycle time due to the reengineering and automation of certain phases.
- Since the manual processes are eliminated, there is easy access to the market and tender opportunities, easier bidding processes etc.

- Timely payments to suppliers using electronic payment of invoices. This leads to better control of cash flow and efficient contract management, which can lead to lower price quotations.

- Standardization - since e-procurement is majorly template-driven, it makes all transactions standardized and traceable. In addition, there are reduced errors in process and documentation for buyers.

- Dematerialization – reduction in archival and storage costs, paper consumption due to use of electronic platform and reduced need to use hard copies thus providing environmental and financial benefits.

c. Accountability

- E-Procurement strengthens Accountability by enhancing transparency and improves access to management and audit information from a central source.

- Administrative workflow together with audit trail makes the officials more responsive and accountable to their responsibilities.

- Tender documentation and outcomes of the procedures (winning suppliers, rankings, and final offers) are automatically posted online and available to all.

d. Transparency

- Eligibility criteria and evaluation parameters for the technical and qualification of bidders are clearly parameterized and published in advance, this leads to an increased strategic accuracy of the offers.

- Performance Measurement: E-Procurement also provides more significant and timely procurement information that creates the potential for regular analysis and reporting for many stakeholders on different aspects.

- The low cost-efficient access to accurate, timely and comprehensive management information in e-procurement provides intelligence on spending patterns, inventory, performance and compliance enables strengthening of control, oversight, efficiency and planning capabilities as well as competition.

e. Governance

- E-procurement can improve public governance, as it allows implementing the key principles of public procurement effectively in synergetic balance enhancing all facets of good governance.

- Provides automated governance of all procuring entities through innovative procurement tools of collaboration like framework agreements in the same way despite if any procuring entities may be geographically remote.

- It is also easier to share best practices, due to the availability of information and documents online.

- The data collected in e-procurement systems will assist with mandatory reporting obligations, audit and accountability requirements, as well as internal reporting to assist with on- going development of its procurement strategy.

In the case of government procurement, the benefits might be efficiency, transparency, equity, fairness and encouragement of local business. Because e-procurement increases competition, lowers transactions cost and has potential to minimize time and errors in the bidding process, efficiency is achieved. Because of easier accessibility and openness of the internet, more people can attain earlier information, which increases transparency. Neutrality to location and time ensures equity and fairness. [01]

2.2.3 E-PROCUREMENT PRACTICES FOR ADOPTION

Information and Communication Technologies are changing the way organizations do business, particularly the adoption of e-business and e-commerce. E-procurement is an example of e-business and e-commercial activity. It has been defined as the use of information technologies to facilitate business-to-business (B2B) purchase transactions for materials and services (Wu et al., 2007). The scope of e-business includes information exchange, commercial transactions and knowledge sharing between organizations (Croom, 2007), whereas e-commerce focuses only on commercial transactions (Cullen & Webster, 2007). Some of the technologies associated with e-commerce include websites, e-mail, extranets, intranets and EDI (Mclvor & Humphreys, 2004). The following are the e-procurement practices for adoption.

Registration process of users

According to the State of the Art Report a full tender documentation should be possible to be browsed and/or downloaded by suppliers with the minimum effort. If a Contracting Authority requires a supplier to be registered before viewing /downloading the full tender documentation, the registration process should be as simple as possible. Apart from the registration process as such, registered users need to be given the appropriate access rights to the stored data, as well as, the actions they can perform on that data. The registration details of suppliers need to remain secure in order to satisfy the confidentiality and equal treatment principles.

Electronic submission of tenders

The e-tendering phase primarily consists of the electronic submission of tenders. In the restricted procedures, a preliminary selection stage is involved, when only qualified suppliers are invited to submit a tender.

The system needs to be in a position to identify and authenticate a supplier during the submission process. The authentication of suppliers is a very sensitive area, as stakeholders need to find a balance between two slightly contrasting issues; interoperability and security. The first principle implies the creation of an operational environment where all suppliers can participate to competitions using interoperable tools, satisfying minimum requirements. The second principle implies the possibility to verify suppliers' identity in an electronically secure way. A crucial functionality for an e-Procurement system is its ability to "lock" all submitted tenders until the pre-defined tender opening time and/or until designated procurement officers authorize the opening of Tenders following simultaneous action.

Mechanism for encrypting and locking submitted tenders

The system has developed a mechanism for securing the transmission and storage of supplier tenders. Through this mechanism, when a supplier uploads a tender to the e-Procurement system, a virus check is performed first. Assuming no detection of a virus, the document is encrypted according to a private key which is created for each competition. Subsequently, the tender documents are stored in a secure hosting environment, until their opening time. Only the president of the contract awarding committee can obtain the private key for decrypting the tender documents, which in turn can be obtained from the system only after the expiration of the e-tendering deadline.

Functionality of updating a tender

Further to the submission of tenders, and assuming the deadline for tender submission has not expired, a supplier can be provided with the functionality to update his submitted tender documentation. A version control mechanism may be used in this area, so that previous versions of documents are not completely discarded from the system, as this may be in use in cases of disputes or reporting purposes by the Contracting Authority.

Tender opening

The opening of bids is a sensitive phase of the e-procurement procedure, as during this process the Contracting Authority gains access for the first time to the full tender documentation from all bidders. The access to data transmitted electronically by bidders' can be possible only through simultaneous action of different authorized persons. The Contracting Authority can have a dedicated space for each tender, where the submitted tenders are stored until the opening phase. A crucial procedure that needs to be followed during tender opening is to analyze the system logs and identify any attempts for accessing the tender documents during the locking period, as well as, if these attempts have been successful. If such an incident is captured, the Contracting Authority may have plans in place for handling the situation.

Publishing Notices

This involves preparation and publication of notices to official electronic notice boards. The e-notification phase mainly consists of the publication of Preliminary Information Notices (PINs), Contract Notices (informing suppliers of new business opportunities), and Contract Award Notices (reporting the result of a competition). The publication notification requirements depend on the chosen awarding procedure.

Electronic signatures

Electronic signatures are used for ensuring the proof of origin of electronically transmitted documents. According to Schlosbon (2014) an electronic signature is referred to as a person's electronic expression of his or her agreement to the terms of a particular document. Advanced electronic certificates are issued by Certification Authorities (CA) and are used for producing electronic signatures by their possessors. An electronically signed document guarantees the identity of the person who signed it. Furthermore, electronically signed documents ensure the

consistency of the data of an electronically transmitted document. If a signed document is tampered, the signature is automatically invalidated. Therefore, the usage of advanced electronic signatures could be the ideal medium for ensuring the authenticity of bidders and the integrity of data submitted by bidders.

Audit trailing and tracking

A cornerstone principle on e-Procurement imposed by the European Union legislation is that of traceability; the ability of the system to record all its interactions with users in system logs. The objective is to enhance the desired security aspect, as such logs can be analyzed and provide legal evidence on system failures or irregular activities.

Integration with financial systems for automated invoicing and payment

Significant benefits can be achieved by integrating an e-procurement repetitive purchasing system to the financial systems of Contracting Authorities and suppliers. Such integration can facilitate automated invoicing and payment, through constant status monitoring and automated settlement processes. Such integration can achieve significant benefits for both buyers and suppliers, not only in terms of time saving, but also by allowing the error-free storage and analysis of Contract Authorities' spending and suppliers' sales.

Capability to manage volume Capacity for concurrent submissions at the closing time

A common issue with e-procurement is the submission of tenders very close to the e-tendering deadline. Suppliers usually define their best offer for a business opportunity until the closing hours of the e-tendering phase and they submit their offers almost simultaneously a few hours or even minutes before the closing time .This in turn can potentially generate difficulties, as the IT infrastructure needs to cope with the concurrent submissions, without creating unavailability or disruption problems. According to the State of the Art Report there is need to establish submission deadline extension policies, which detail precisely the conditions and actions to be taken when system failures occur during the closing stages of e-tendering, due to volume capacity problems and to use monitoring tools to closely supervise the behavior of the system (residing servers, underlying network functioning) in order to identify potential and actual problems and be in a position to take appropriate actions. If an extension to the submission phase is given, all participating suppliers need to be promptly notified of the new deadline.

Platform for Supplier Contacts

This another e-procurement activity identified in literature. In this case the buyers' request for quotes, Request for Proposals (RFP), request for information and bids are all contained in supplier contact. Rink and Fox (1999), include supplier contact as part of the procurement activities in any stage of a product-life cycle, from requesting for quotes, to requesting for volume discounts and bids.

2.3 Empirical Literature

2.3.1 READINESS TO ADOPT E-PROCUREMENT

Despite the high benefits of e-procurement technologies, their adoption is still at their early stages (Davila et al. 2003).

The willingness and readiness to adopt e-procurement has several factors among organizations. A variety of factors may affect an organization's decision to adopt and implement E-Procurement. Some variables in this research are classified in to four categories. These are legal frameworks, management support & employee commitment, ICT infrastructure and supplier acceptance.

These factors may be important to differing degrees depending on the context or technology. Literature further raises the following readiness factors in adoption of e-procurement.

2.3.2 Legal Framework Factors

Though public procurement can be used to support broader government policies through both traditional and e-procurement processes, an electronic procurement can be seen as a policy tool to support the delivery of public procurement policy, improving transparency and efficiency (Carayannis & Popescu, 2005; Croom & Brandon-Jones, 2005). A favorable environment needs to be provided by policy to ensure its success. This is because e-procurement can assist a government in the way it does business by reducing transaction cost, making better decisions and getting more value (Panayiotou et al., 2004). Therefore, with ever-advancing capabilities of technology being an important driver of e-procurement implementation for PDEs and businesses, there is no doubt that e-procurement can facilitate improved accuracy, reduced clerical work, reduced order-cycle time, and increased productivity (Hayword et al., 2001).

To achieve economy, transparency and modernization in public procurement, The Ethiopian Federal Government Procurement and Property Administration Proclamation No. 649/2009 and article 31 emphasize on Electronic Procurement and it gives mandate to the Ministry of Finance and Economic Development to authorize the use of electronic means as a method of procurement. In order to implement this:

1) The Agency shall conduct a study and submit proposal on a system of conducting procurement by means of electronic exchange of information which is appropriate to the level of development of the country;

2) The Agency shall ensure that public bodies, suppliers and supervising entities develop the capacity required to implement the system;

3) Upon due consideration of the proposed system of effecting procurement by means of electronic exchange of information and where he is satisfied that the overall system and capacity of public bodies and suppliers allows the carrying out of procurement through electronic exchange of information, the Minister may authorize the implementation of the electronic system in all or certain public procurement proceedings by establishing the appropriate framework for the operation of the proposed electronic system (Federal Negarit Gazeta September, 2009).

In this regard, E- Procurement can be implementing in the country public organizations by developing the e-procurement policies, strategies, and procedures. And also by building capacity and developing the overall system, it can establish an appropriate legal framework that could keep pace with the e-procurement environment. The areas may included data access rights, privacy protection, computer frauds & crimes, security and privacy of e-transactions, establishment of rules governing e-transactions, delivery of e-opportunities to the wider population, contract administration, dispute settlement and others.

2.3.3 Management Support and Employee Commitment

Different authors in previous studies stated that management attitude and support of the organizations had a positive relationship with the e-commerce adoption. The need for commitment and support from the top management during the process of assessment of the innovation or technology was of utmost importance. This commitment and support ensures that

to be an obligation within the resources, which in turn would create conducive environment within the firm for the adoption process of the technology (Almoawi, 2011). Top management was a key responsible agent for ensuring that strategic, tactical and operational rules to govern their business activities and Ecommerce initiatives were in place (Kabanda & Brown, 2011). The support from top management was the precondition for successful implementation of systems. The top management support facilitated the adoption and implementation of information systems (Sarkar, 2009).

If the top management was well-versed with the technological developments and the benefits that could be harnessed from these technological advancements, then he or she would be more likely to adopt technology in the form of e-commerce. Lack of technological knowledge on the owner's part would inhibit the adoption (Almoawi, 2011). Individual characteristics of CEO, such as education, age, experience, and psychological trait had been found to strongly influence innovation adoption (Sakar, 2009)

Whenever change is proposed in most organizations, it is expected there is a high or some level of resistance from the employees. For instance when an organization try to adopt E-Procurement, there will be changes on manual procurement in this case it is natural showing high or some level of resistance. The resistance is born out of the uncertainty associated with the change. So give awareness about the change for employees is importance. Providing effective staff training program to develop employees' knowledge and the skill of new technology is also important. Change Management literature has identified lack of job and position from the proposed changes as a critical cause of such resistance by employees to adopt any proposed changes.

2.3.4 Information Technology Infrastructure

Infrastructure referred to technologies that enable internet-related businesses. ICT Infrastructure had influence on the volume of a nation's Internet Transactions or on the number of e-business websites in a country. A better ICT Infrastructure enhanced e-business development (Kim et al, 2011). Technological infrastructure could be the structure adjustment inside the organization in order to enable the internet accessibility and also could be outside the organization.

It is clear that the higher technological compatibility, the less changes or adjustment would be needed and the lower the possible level of resistance to the technology when it was adopted e-

procurement had its roots in the modern ICT, so the existing IT infrastructure (technological compatibility) of the organization, the nature of organization's work practices and the consistence of values, culture and legal framework (organizational compatibility), all can impact the decision to adopt e-commerce (Jian, 2010).

In general, the higher complexity of e-procurement and its related infrastructures, the bigger the negative influence over the adoption of e-procurement. However, the rapid advancement of the ICT, the availability of fast broadband and easier access to new technology all act to lower the complexity of e-commerce (Jian, 2010). The adoption of an innovation, as in e-commerce technology, depended on the time the firms take to understand the intricacies of e-commerce technology mechanism, its application, and the advantages and benefits that could be harvested through its proper utilization in their individual businesses. Basically, the easier to understand the technology and its application, the faster and more immediately the adoption process and vice versa. (Almoawi, 2011)

2.3.5 Supplier Acceptance

E-procurement is more likely to be beneficial in dispersed supply chains as it helps coordination (Liao et al., 2003). Different actors in supply chains have got different power, legitimacy and urgency to implement e-procurement and e-procurement can have an effect on trust in supply chain relationships (Gattiker et al., 2007; Klein, 2007). Lack of assistance and the structural inertia of large organizations in supply chains can be a disincentive to implement e-business (Zhu et al., 2006).

The greatest benefits of e-business occur when its application is fully integrated throughout the supply chain (Currie, 2000). Some literature has pointed to the possibilities of greater integration and collaboration across e-business-supported supply chains (Mclvor & Humphreys, 2004). E-procurement is more likely to be adopted if it is perceived that suppliers have capability to deal with it; there are difficulties in integrating information systems across firm boundaries in supply chains if suppliers lack capability (Bagchi & Skjoett-Larsen, 2003).

In general a number of factors might hinder or influence the adoption of e-procurement on suppliers' side. It might be classified as below:

Economic: Little benefit to suppliers, concerns about costs, fear of competitive bidding because of its adverse effect on price, insufficient internal resources to support e-procurement

Operational: Suppliers concerns about required changes in work processes and lack of skilled personnel.

Environmental: ineffective public infrastructure, restrictive or lack of regulations from national governments, differences in language, culture, and legal systems in international competitive bidding.

Technological: low or different levels of IT maturity among suppliers, lack of technical and data exchange standards, lack of supporting IT infrastructure, Vendors' concerns about the security of e-procurement transactions

Relational: lack of trust between buyer and supplier

2.3.6 CHALLENGES TO E-PROCUREMENT ADOPTION

The adoption to e-procurement is certainly one of the grounds where the digital divide is more pronounced globally. There are several challenge for the adoption of e-procurement some of are highlighted below:

2.3.6.1 Resistance to Change
Users' resistance to changes in business processes was identified by Day et al. (2003) as a major barrier to the implementation of e-procurement systems. Whenever change is proposed in most institutions, there is a high level of resistance from the employees. The resistance is born out of the uncertainty associated with the change. Change Management literature has identified lack of mass buy-in to the proposed changes as a critical cause of such reluctance by employees to adopt proposed changes.

2.3.6.2 Perceived Risks
In another study, Saeed and Leith (2003) examined buyers' perceptions of e-procurement risks and arrived at three dimensions: Transaction risks resulting from wrong products purchased due to incomplete or misleading information; Security risks resulting from unauthorized penetration of trading platforms and failure to protect transaction related data while being transmitted or stored; and Privacy risks arising from inappropriate information collection and information transparency. It is possible these risks limit the adoption of E-procurement because these perceptions apply to suppliers and buyers alike. One such perception is the worker apprehensions

about being replaced by automated procurement systems. Therefore until there is certainty about the above perceptions, it is possible e-procurement adoption shall remain a myth.

2.3.6.3 Fear of Competition

Dai and Kauffman (2002) uncovered a number of issues relating to whether the market place was ready to take on B2B services, particularly those of e-procurement exchanges. In their findings they realized that there were inequities in power valence between and among trading partners participating in electronic environments like B2B exchanges. They realized that since most of the power was held by channel masters there would be challenges accompanying building a single point-of contact between a large multi-unit business firms that want to offer a single B2B interface to its corporate customers. They found that trading partners would have to make changes in the way they manage their customers and the way its customer relationship management functions work. This usually breaks the trust and the resultant resistance to share data and information.

2.3.6.4 Transaction Costs

Lee and Clark (1997) identified transaction cost economics as a challenge to adoption of e-procurement. They also argued that there are several associated risks in setting up electronic market mechanisms such as opportunism by unscrupulous market participants and asset specificity. The latter has to do with the need for a firm to commit certain resources to deploy IT applications and infrastructures needed to link its internal business processes with those of the e-marketplace trading platform. They note that sometimes these integration links are complex which makes it difficult to transfer use of such connections with other trading platforms or trading partner networks.

2.3.6.5 Establishment costs

Attracting suppliers to an e-procurement service can be a significant obstacle, as this signifies changes to the way they conduct business with the public sector. This most probably involves significant costs. In particular Small & Medium Enterprises that are often lacking funds or IT expertise, might consider e-procurement as a significant obstacle in conducting business with the public sector. This can result in exactly the opposite outcome from what the country wishes to achieve. Rather than creating an open-competition and equal-treatment-to-all environment, it can create procurement environment where only certain types of suppliers participate in the process.

2.3.6.6 Privacy and security

There will be concerns over security and privacy of procurement transaction data when investigating the adoption of e-procurement. Security requires significant investments in hardware, software, and personnel training to participate in e-procurement. The laws governing B2B commerce, crossing over to e-procurement, are still undeveloped. For instance, questions concerning the legality and force of e-mail contracts, role of electronic signatures, and application of copyright laws to electronically copied documents are still unresolved. Technical difficulties related to information and data exchange and conversion such as inefficiencies in locating information over the internet using search engines and the lack of common standards that get in the way of the easy integration of electronic catalogs from multiple suppliers. Kheng & Al-Hawandeh (2002)

2.3.6.7 Virus protection & protection from malicious attacks

An e-procurement system usually involves the execution of several activities outside of the context of the system. In particular, during the e-tendering phase, most reviewed e-procurement systems allow for the preparation of supplier tenders in document processing applications, usually using the MS Office software, or similar popular applications. This in turn means that a supplier computer infected by a virus can potentially generate tender documentation which includes dangerous computer viruses. Although it is relatively straightforward for a computer system to virus -check the tender documentation when received by a supplier, the complication arises with regards to the validity of a virus infected offer. Another major threat for Internet based systems is that of malicious attacks. In the recent years, there are numerous examples of malicious attacks to the most prestigious Internet systems. It appears that no matter the provisions in place, attackers can still achieve their aims in breaking into systems, or making them unavailable for a period of time.

2.2.6 Existing e-Procurement Systems in the Country

E-Procurement Readiness Assessment in the country revealed that the Ministry of Communication and Information Technology and Bahir Dar University have developed systems and already using e-Procurement systems. Bahir Dar University has been using the system for the last seven years internally for its procurement purposes. Ministry of Communication and Information Technology developed the e-Procurement system under the e-Government Strategy Implementation Plans 2020 and also using the system for its own procurement purposes. FPPA as the mandated authority for the procurement sector is going to establish a unitary end-to-end

national e-Procurement system to be used across all government procuring entities. During the E-Procurement Readiness Assessment, both the systems from the Ministry of Communication and Information Technology as well as Bahir Dar University were assessed going through the demonstration of the systems considering the feasibility of qualifying one of them to be upgraded as the national e-Procurement System. (E-Procurement strategy of Ethiopia and action plan, 2018).

2.3.7 Upgrading State Procurement Portal

According to E-Procurement strategy of Ethiopia and action plan 2018, Federal Procurement Portal shall be managed and owned by the FPPA. The portal shall maintain the following information for the bidders and other relevant stakeholders:

Information Section

- Procurement Legislation, regulations, circulars, directives
- Procurement Guidelines, manuals
- Standard Bidding Documents
- Publication of Annual Procurement Plans
- Publication of Contract Awards
- Publication of Debarred bidders
- Publication of resolution of complaints and appeal reviews
- Market benchmark prices of common user items
- Tender Opportunities
- List of registered suppliers
- Price indices (reference prices)
- Training Information and schedule

Interactive Section

- Procuring Entity and other users Registration
- Invitation to Procurement Opportunities, bid document, addenda entry for open tendering by Procuring Entities
- Access to Complaint Lodgment
- Review Board and Review Panel investigators access
- Monitoring and Evaluation

- Report generation in line with prevalent legislation and other statutory requirements

Federal Portal will have its working dashboard and carry out its procurement related data and information updating and communicate with bidders and procuring entities. Information on Federal Portal-related Tenders, contract awards, black listing, monitoring and evaluation and complaint and appeal handling through review boards shall be updated automatically through e-Procurement system in real-time. The functions built in the Federal Portal also will have its workflow inter-linking all units of FPPA to operate in an automated manner using the electronic environment.

It is expected more comprehensive functional requirements shall be prepared and incorporated when new proclamations are promulgated.

2.3.8 Implementation Framework for the Enhanced E-Procurement Platform

With the provisions in the prevalent legislation, implementation of an enhanced e-Procurement platform, it is expected to improve the situation in the governance of procurement and finance management, achieve better value-for-money and support the socio-economic development of the country. Also, as a result of the implementation of the e-Procurement system designed around the spirit of the key principles of public procurement, it is expected to improve transparency in the procurement process, ensure accountability, rule of law, equity and competitiveness, improve corruption control, and increase civil society awareness in regards to the public procurement.

A comprehensive e-Procurement Implementation Framework shall be followed for the implementation of the e-Procurement system in Ethiopia. The e-Procurement implementation framework includes a comprehensive set of steps to be taken and interventions to be considered for the introduction, implementation, and adaption of the e-Procurement system.

2.4 Conceptual Framework

The conceptual framework of the study seeks to consider some variables like legal frameworks, management support and employee commitment, information technology infrastructure and supplier acceptance, herein referred as the independent variables, and how they are related with the adoption of e-procurement. The dependent variable is adoption of e-procurement.

A figure shows the conceptual framework relationship involving independent variables and dependent variable.

Independent Variable

| Government Policy and Legal Frameworks |

| Management Support and Employees Commitment |

Dependent Variable

| Adoption of E-Procurement |

| Information Technology Infrastructure |

| Supplier Acceptance |
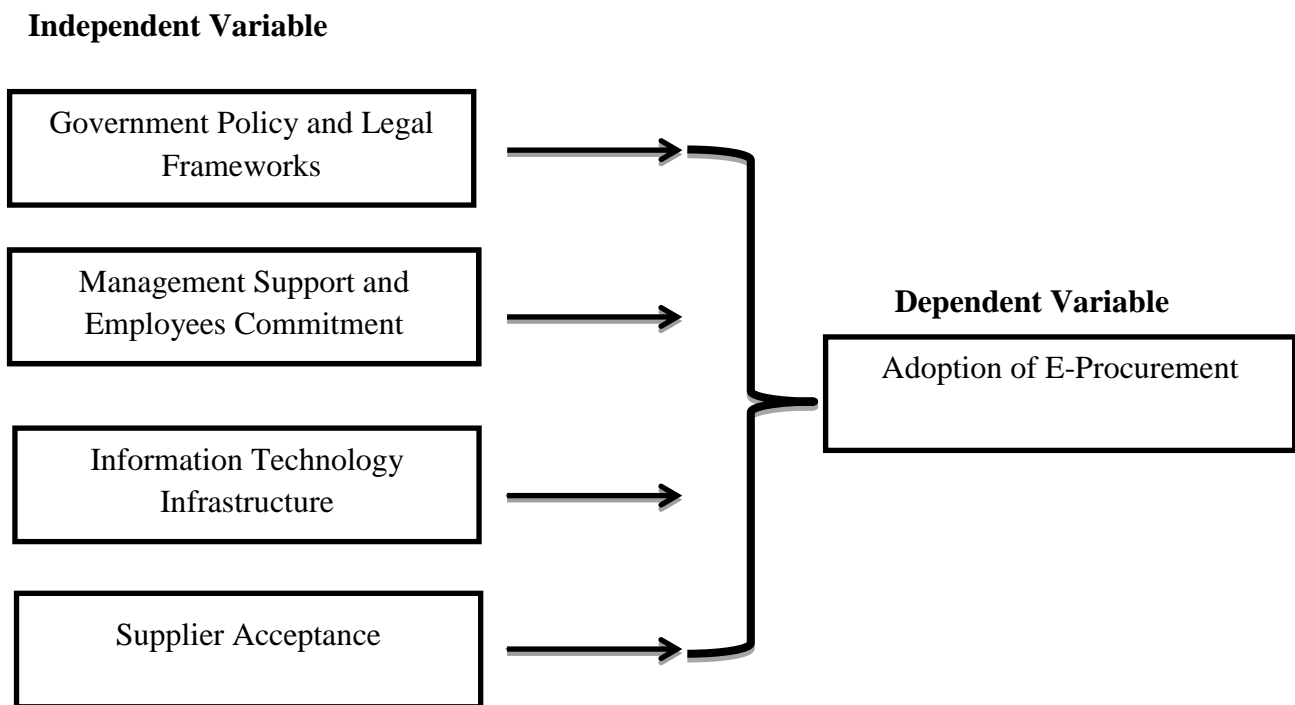
CHAPTER THREE

3. RESEARCH METHODOLOGY

This chapter describes the overall procedures and be followed in the study. It also discusses about the population, sample size and selection of the size. It also provides the methods used in the study, data collection procedure and data analysis.

3.1 Research Design

A Research Design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure (Kothari, 2004).

The general objective of this study was to examine factors that affecting the adoption of e-procurement. In order to find answers the research questions and meet the objectives of the study, the design of the study were both descriptive and explanatory type.

Descriptive studies are used to describe characteristics of objects, people, groups, or organizations. (Zikmund, 2003). It serves to achieve a variety of research objectives:-

- To describe the characteristics of the study subject (who, what, when and how)
- To estimate the proportions of a population that have particular characteristics
- To discover association / correlation among different variables.

Explanatory research is conducted to establish cause and effect relationships. The primary purpose of explanatory research design is to determine how events occur and which ones may influence particular outcomes (Dawson & Bob 2006).

Therefore, these methods are the most appropriate relating to the research under investigation. So the researcher used both descriptive and explanatory method in order to explain factors affecting the adoption of e-procurement in AACRA.

3.2 Research Approach

There are three types of research methods. These are quantitative, qualitative and mixed.

Qualitative research mainly used to assess respondents attitudes, feelings and motivations whose findings are not obtained from quantifiable analysis while quantitative research involves mathematical analysis (Kothari, 2004).

Quantitative research is a research that addresses research objectives through empirical assessment. It involves numerical measurement and analysis approaches. It generates statistics through the use of large scale survey research, using methods such as questionnaires or structures interviews. (Zikumnd, 2010).

Qualitative research is an approach for exploring and understanding the individuals or groups ascribe to a social or human problem. (CHS well, 2014).

In this research, qualitative and quantitative approach is adapted.

3.3 Study population and sampling techniques

3.3.1 Population

A population is any complete group of people, companies, hospitals, stores, college students or the like that share some set of characteristics, (Zikmund, 2003). In this study the total population was all AACRA Permanent employees. According to AACRA Human Resources Directorate there are 1254 permanent employees when I started my survey. Those entire populations may not be relevant for this research so the researcher selects some directorates that are more suitable for this research. AACRA organization structure is a top down flowchart with a high ranking executive at the top, with middle directorates and project managers who are directly reporting to the top executives. AACRA top executives are organized by one Director General, who is assisted by one technical and one administrative advisor, and 4 Directorate Director Generals. And under the top executives, there are 27 Directorates. There are also 9 Project Managers and 96 Teams under the above 27 Directorates.

Among the total of 27 Directorates, the researcher identify 17 Directorates. Thus 1133 (89%) of employees, who are currently working in the above directorates, will be a target population from the total population of 1254 permanent employees.

3.3.2   Sampling Techniques

There are two major categories of sampling technique: probability and non probability sampling. Probability sampling is used when every element of the population has a known, non-zero probability of selection (Zikmund, 2003). On the other hand, non-probability sampling is adopted when elements of the population do not have a known or predetermined chance of being selected as subject for the purpose of survey (Sekaran, 2003).

In this research, the researcher tried to select the sample based on specific relevance to the study. All samples are directly or indirectly involved in the procurement process and have relationship with procurement activities of AACRA.

The sampling techniques that I used for this research were non probability sampling techniques that encompasses purposive sampling.

3.3.3   Sample Size Determination

A sample size is the group of people who you select to be in your study (Cooper and Schindler 2006). The sample size should be appropriate and representative of the entire population. According to Mugenda (2003) an appropriate sample should be between 10-30% of the population. The researcher selected twelve percent (12%) of sample size for the purpose of this study.

Table 3.1   Target Population data and Sample size determination

S.No.	Name of Directorates	Target Population	Sample Size
1.	Procurement & Property Administration Directorate (Goods)	61	9
2.	Finance Administration Directorate	59	9
3.	Human Resource & Facility Management Directorate	125	12
4.	Information Technology Directorate	9	3
5.	Legal Service Directorate	13	3
6.	Internal Audit Directorate	19	2

7.	Planning, Budget & Strategic Management Directorate	21	6
8.	Communication Directorate	18	2
9.	Road Construction Contract Management Directorate	24	4
10.	Engineering Procurement Directorate	22	6
11.	Road Design Review & Implementation Directorate	42	4
12.	Own Force Road Maintenance Directorate	266	26
13.	Own Force Road Construction Directorate	371	37
14.	Organization Change & System Design Directorate	11	4
15.	Road Asset Coordination & Data Base Management Directorate	18	2
16.	North A.A. Road Asset Management Directorate	29	4
17.	West A.A. Road Asset Management Directorate	25	3
	Total	1133	136

3.4 Data sources and Data collection method

In this research the researcher tried to use primary and secondary Data.

Primary data is the data gathered and assembled specifically for research projects at hand (Zikmund, 2003.)

In this regard, structured questionnaire and interview was used to collect data. The primary data was collected by using structure questionnaire from the 17 Directorates of AACRA that is mentioned in the above table 1 and the researcher distributed 136 questionnaires and out of which 121 questionnaires, which its response rate represented 89%, were gathered. The interview was made with AACRAs' Organization Change & Support Service Directorate Director General and with Directors from Goods Procurement Directorates, Engineering Procurement Directorates and Teams from Goods Procurement.

Secondary data is the information gathered from sources already existed (Sekaran, 2003). The Secondary data are usually historical, already assembled, and do not require access to

respondents. This type of data is easier to be obtained in a faster way, and less expensive than acquiring primary data.

In this research, the collection of the data was held through books, articles, online dissertation, and other publications.

3.5 Data Processing and Analysis Method

The data were collected through questionnaires and interviewees. Data were collected from Addis Ababa City Roads Authority. The researcher distributed 136 questionnaires and out of which 121 questionnaires, which its response rate represented 89%, were gathered. Then it was analyzed with descriptive statistics and correlation model. A descriptive analysis used to present and interpret the data. Simple statistical tools like mean, frequency and tables along with percentages and inferential statistics like correlation were used to analyze the responses of the respondents. In order to analyze and manage the collected data statistical package for social science (SPSS) 22nd version software tool was used. 121 completely responded questionnaires were utilized for the analysis of the study.

3.5.1 Ethical Consideration

The study was carried out based on formal procedures. As the first step a letter of request to research were submitted to Addis Ababa City Roads Authority Director General. Then the Director General transfers the letter to the concerned department and based on that permission letter I collected my data staring from observation and interview until collection of questionnaires.

CHAPTER FOUR

4. DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

The aim of this study was to examine factors that affecting the adoption of e-procurement and also tried to realize the benefits of e-procurement in Addis Ababa City Roads Authority. The study adopted and deployed as per the literature and the objectives of the study. Structured questionnaire and interview was used to collect data. It used Statistical Package for Social Science (SPSS v. 22) for data analysis and it deployed descriptive statistics and correlation model in analyzing the collected data. The demographic profile of the respondent was analyzed and presented in this part using descriptive statistic such as frequency, percentage, mean and standard deviation.

To address the research objective set, data were collected from Addis Ababa City Roads Authority. The researcher distributed 136 questionnaires and out of which 121 questionnaires were gathered that means its response rate represented 89%. Then to make the data analysis suitable for SPSS, the information gathered from the questionnaires were coded for each question and fill in to Likert Scale Questions Respondents Tabulations Format. Then all the gathered questionnaires were screened fortunately all returned questionnaires were completed. In this regard, 121 completely responded questionnaires were utilized for the analysis of the study.

4.2 Descriptive Analysis

The research discusses demographic profile of the respondent's and central tendencies measurement of constructs.

4.2.1 Respondent demographic profiles

In the questionnaire survey, each respondent was asked six questions regarding their demographic profile including sex, age, educational background, years of service in the organization, current position and field of specialization. This part provides an analysis of the demographic characteristics of the respondents based on frequency analysis.

4.2.1.1 Sex

Table 4.1: Sex of the Respondents

Sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	70	57.9	57.9	57.9
	Femeal	51	42.1	42.1	100.0
	Total	121	100.0	100.0	

Figure 4.1: Sex of the Respondents
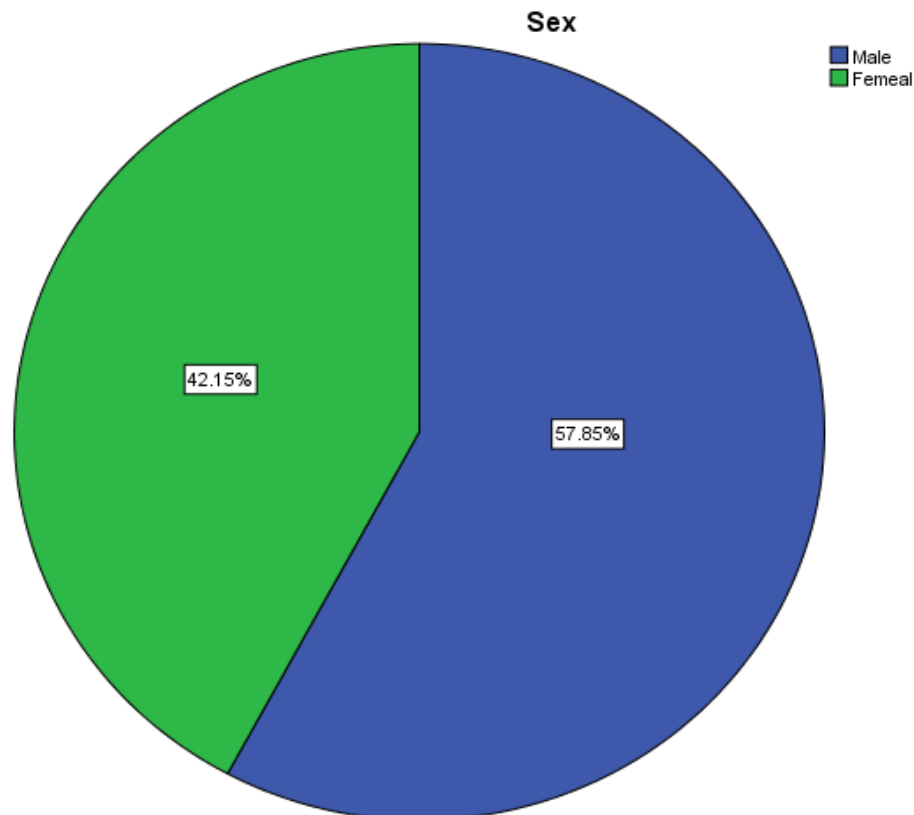
Table 4.1 and Figure 4.1 show that the numbers of male respondents are greater than that of female respondents which stood at 57.9% for male while 42.1% for female. In other words, from the 121 respondents, 70 of them are male while the remaining 51 are female. This indicates that there was a dominance of male respondents than female respondents.

4.2.1.2 Age

Table 4.2: Age of the Respondents

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	11	9.1	9.1	9.1
	26-35	60	49.6	49.6	58.7
	36-45	42	34.7	34.7	93.4
	46-55	8	6.6	6.6	100.0
	Total	121	100.0	100.0	

Figure 4.2: Age of the Respondents
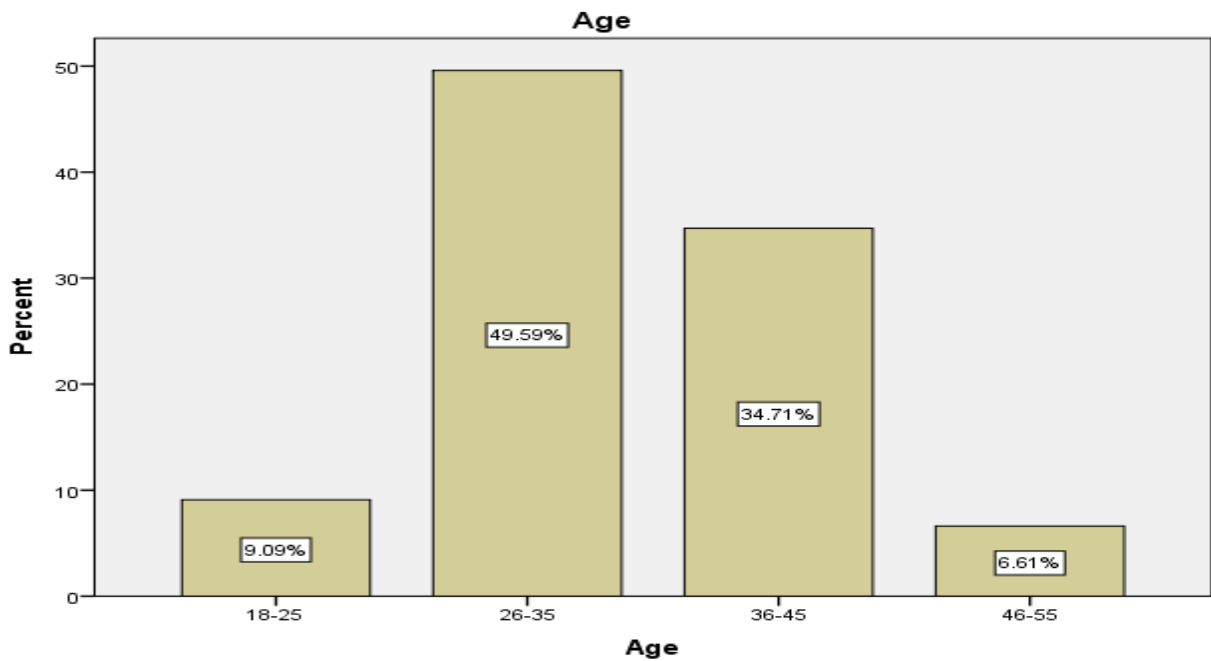
Table 4.2 and Figure 4.2 show that age group of the respondents. The majority of the respondents falls under the age group category of 26 - 35 years old (accounted for 49.6% or 60 respondents), followed by the age group of 36-45 years old (accounted for 34.7% or 42 respondents), and age group of 18 - 25 years old (accounted for 9.1% or 11 respondents), and age group of 46 - 55 years old (accounted for 6.6% or 8 respondents). This indicates that almost all age groups were participated as respondent under this study.

4.4.1.3 Educational Background

Table 4.3: Educational Background of the Respondents

Educational Back Ground

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Certeficate	1	.8	.8	.8
	College Diploma	4	3.3	3.3	4.1
	BA/BSc	71	58.7	58.7	62.8
	MA/MSc/MBA	45	37.2	37.2	100.0
	Total	121	100.0	100.0	

Figure 4.3 : Educational Background of the Respondents
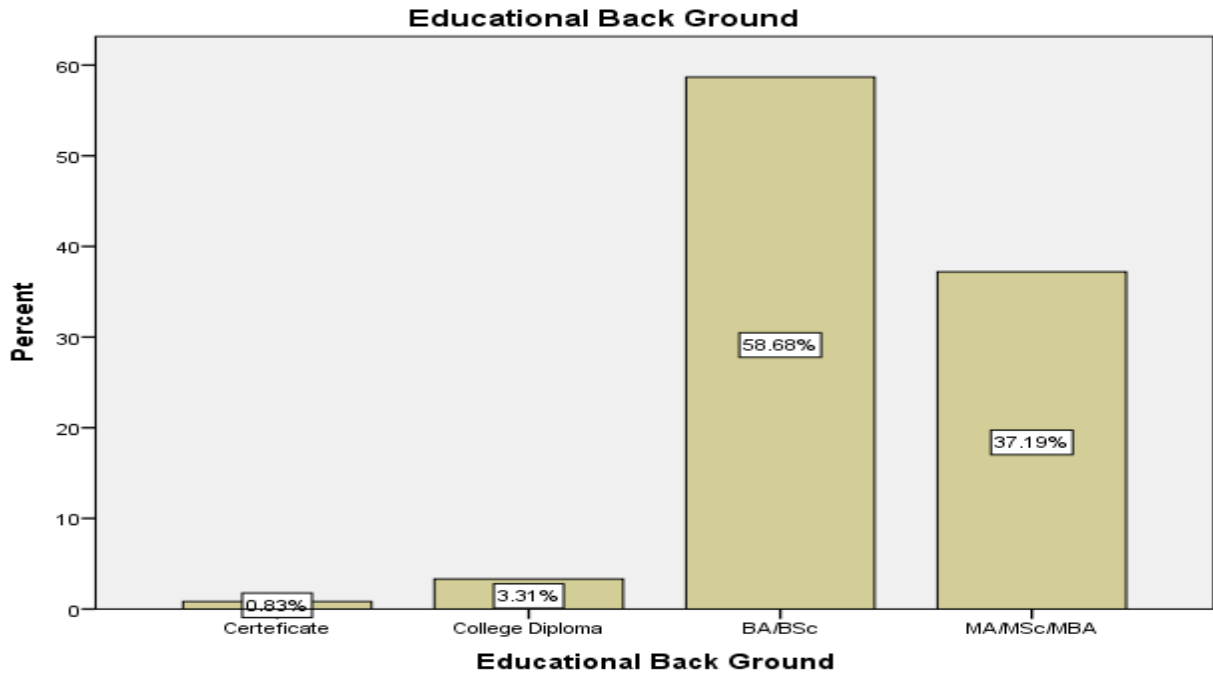
Table 4.3 and Figure 4.3 show that educational background of the respondents. 71 respondents equivalent to 58.7% who were responded the questionnaire hold BA/BSC degree, 45 respondents equivalent to 37.2% who were responded the questionnaire hold MA/MSC/MBA degree, 4 respondents equivalent to 3.3% who were responded the questionnaire hold College diploma and 1 respondent equivalent to 0.8% who were responded the questionnaire hold Certificate. The analysis revealed that the respondents were well educated that implies they responded the questionnaire with better understand than others who have less educational background.

4.4.1.4 Total Years of service in the organization
Table 4.4 Total Years of service in the organization of the resopondents

Years of Service

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-5 Years	39	32.2	32.2	32.2
	6-10 Years	31	25.6	25.6	57.9
	11-15 Years	35	28.9	28.9	86.8
	16-20 Years	10	8.3	8.3	95.0
	>20 Years	6	5.0	5.0	100.0
	Total	121	100.0	100.0	

Figure 4.4 Total Years of service in the organization of the resopondents
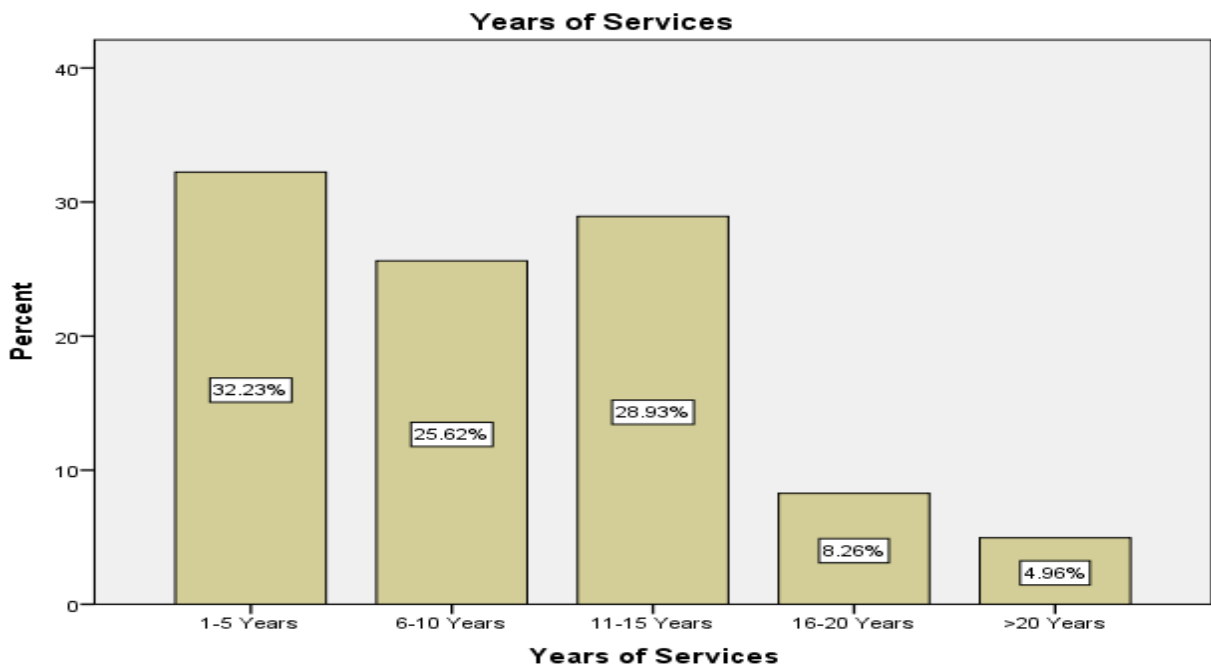
Table 4.4 and Figure 4.4 show that the highest proportion of respondents were with 1-5 years of service in the organization (32.2% or 39 respondents), followed by 11-15 years of service (28.9% or 35 respondents), followed by 6-10 years of service (25.6% or 31 respondents), followed by 16-20 Years of service (8.3% or 10 respondents) and 20 years and above years of service (5% or 6 respondents). This indicates that respondents had enough work experience in the organization that implies they have better opportunity to know more about the topic and also the organization.

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4.4.1.5 Current Positions
Table 4.5 Current Positions of the respondents

Current Positions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Officer	31	25.6	25.6	25.6
	Senior Officer	27	22.3	22.3	47.9
	Lead Officer	19	15.7	15.7	63.6
	Team Leader	36	29.8	29.8	93.4
	Director	8	6.6	6.6	100.0
	Total	121	100.0	100.0	

Figure 4.5 Current Positions of the respondents

Question No. 5 in the questionnaire asked about the respondent's current position in the organization. The results in the above Table 4.5 and Figure 4.5 show that majority of the respondents are Team Leaders (29.8% or 36 respondents), followed by Officers (25.6% or 31 respondents), followed by Senior Officers (22.3% or 27 respondents) followed by Lead Officers (15.7% or 19 respondents) and the rest are Directors (6.6% or 8 respondents). This indicates that the questionnaires were spread over almost for all type of employees who are working in the organization different positions. This implies also fair distribution of the questionnaires to employees.

4.4.1.6 Field of Specialization

Table 4.6 Field of Specialization of the respondents

Field of Specialization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Procurement & Supplies Mgt	5	4.1	4.1	4.1
	Accounting/Managenet	47	38.8	38.8	43.0
	ICT	10	8.3	8.3	51.2
	Engineering	34	28.1	28.1	79.3
	Others	25	20.7	20.7	100.0
	Total	121	100.0	100.0	

Figure 4.6 Field of Specialization of the respondents
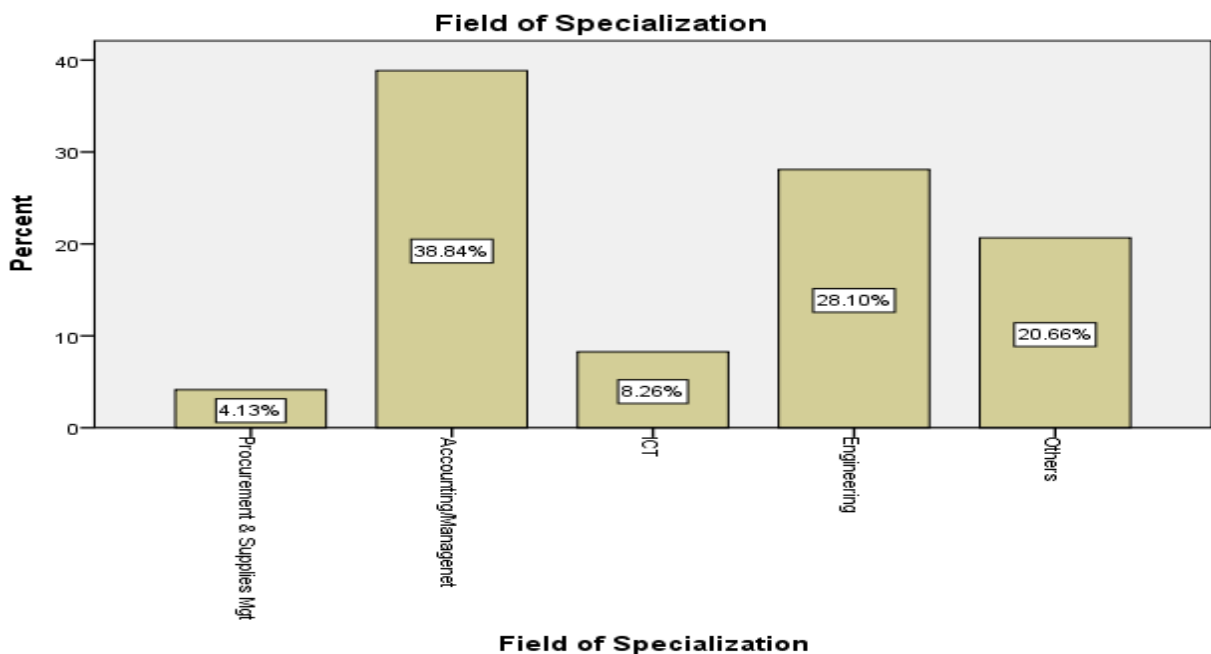
Source: Data generated by SPSS version 22

Table 4.6 and Figure 4.6 show that Field of Specialization of the respondents. 38.8% or 47 respondents were from Accounting/Management field, 28.1% or 34 respondents were from Engineering field, 20.7% or 25 respondents were from others discipline, 8.3% or 10 respondents were from Information & Communication Technology (ICT) field and 4.1% or 5 respondents were from Procurement & Supplies Management field. It indicates that most of relevant field of specialization were involved for the study.

4.2.2 Central Tendencies Measurement of Constructs

Measurement of central tendencies is used to discover the mean scores for the five interval-scaled constructs. In the questionnaire survey each respondent was asked a total of 49 questions regarding perception on Legal Frameworks, Management Support and Employee Commitment, Information Technology Infrastructure, Supplier Acceptance and Adoption of E-Procurement Benefits. Under those questions particular mean score were obtained from the SPSS output. All of the questions are being asked using five point Likert scale with 1 indicating – strongly disagree, 2 indicating —disagree, 3 indicating —neutral, 4 indicating —agree, and 5 indicating —strongly agree. their demographic profile including sex, age, educational background, years of service in the organization, current position and field of specialization. This part provides an analysis of the demographic characteristics of the respondents based on frequency analysis.

Mean and percentage were used to analyze the data. Under this circumstance, the maximum mean which is above 3(three) to 5(five) indicates the maximum number of respondents those who are agreed and strongly agreed to each question drawn by the researcher and mean whereas, less than 3 (three) indicates the number of respondents those who are disagreed and strongly disagreed to the question drawn by the researcher and 3(three) is considered as neutral or indifferent to the question. Based on this, the analysis traced here below is outlined according to nomination of mean listed on the table for each question.

4.2.2.1 Descriptive Analysis of perception on Legal Frameworks
Table 4.7: Perception of Legal Frameworks

Independent Variables	Attributes for E-Procurement Adoption	N	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard deviation
Legal Frameworks	There is Government Policy in the country to use e-procurement	121	17	44	37	17	6	2.5950	1.05340
	There is Legal Framework to use e – procurement in AACRA	121	15	44	39	19	4	2.6116	1.00309
	There is Proclamation in the country to facilitate the use of e-procurement	121	17	36	38	28	2	2.6860	1.03306
	The laws governing e-procurement have been effectively developed in AACRA	121	41	54	19	6	1	1.9421	.87842
	AACRA introduce the necessary laws and regulations to support e-procurement	121	42	51	23	4	1	1.9339	.86348
	There is legal and administrative Procedure in AACRA for e-procurement adoption	121	43	46	26	3	3	1.9835	.94854
	There is e-procurement Policy manual in AACRA to guide the implementation process	121	43	47	25	4	2	1.9669	.92136
	There is e-procurement operations instruction in AACRA	121	43	49	21	6	2	1.9669	.93927

The percentage and mean of responses for each of the items for legal frameworks are shown in Table 4.7.

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Respondents were asked to rank the level of their agreement to which they agreed or disagreed with legal frameworks are affecting the adoption of e-procurement in AACRA. A five point Likert scale was used to measure it where 1 indicating —strongly disagree, 2 indicating —disagree, 3 indicating —neutral, 4 indicating —agree, and 5 indicating —strongly agree.

From the responses, Measurement of central tendencies was used to analyzing the data. The findings are as follows:

14% of the respondents are strongly disagree, 36.4% of the respondents are disagree and 30.6% of the respondents are moderately agree or indifferent and the rest 14% and 5% of respondents are agree and strongly agree respectively on the availability of government policy in the country to use E-Procurement. 12.4% of the respondents are strongly disagree and 36.4% of the respondents are disagree and 32.2% of the respondents are neutral and the rest 15.7% and 3.3% of respondents are agree and strongly agree respectively on the availability of Legal frameworks to use E-Procurement. 14% of the respondents are strongly disagree, 29.8% of the respondents are disagree and 31.4% of the respondents are moderately agree or indifferent and the rest 23.1% and 1.7% of respondents are agree and strongly agree respectively on the availability of proclamation in the country to facilitate the use of E-Procurement. 33.9% of the respondents are strongly disagree and 44.6% of the respondents are disagree and 15.7% of the respondents are neutral and the rest 5% and 0.8% of respondents are agree and strongly agree respectively on the laws which governing e-procurement have been effectively developed in AACRA. 34.7% of the respondents are strongly disagree, 42.1% of the respondents are disagree and 19% of the respondents are moderately agree or indifferent and the rest 3.3% and 0.8% of respondents are agree and strongly agree respectively on introducing of the necessary laws and regulations to support e-procurement. 35.5% of the respondents are strongly disagree, 38% of the respondents are disagree and 21.5% of the respondents are moderately agree or indifferent and the rest 2.5% and other 2.5% of respondents are agree and strongly agree respectively on the availability of legal and administrative procedure in AACRA for e-procurement adoption. 35.5% of the respondents are strongly disagree and 38.8% of the respondents are disagree and 20.7% of the respondents are neutral and the rest 3.3% and 1.7% of respondents are agree and strongly agree respectively on the availability of e-procurement policy manual in AACRA to guide the implementation process. 35.5% of the respondents are strongly disagree, 40.5% of the respondents are disagree and 17.4% of the respondents are moderately agree or indifferent and the rest 5% and 1.7% of respondents are agree and strongly agree respectively on the availability of e-procurement operations instruction in AACRA.

From the findings as listed in table 4.7 above, availability of legal frameworks in AACRA is below a moderate agree with a mean value of less than 3 for all attributes of legal frameworks readiness on e-procurement. This indicates that the legal framework, which is the most necessary part to adopt e-procurement, is unavailable or is not known by most of the respondents in AACRA. In my interview with AACRAs' Organization Change and Support Service Directorate Director General, AACRA as a public organization procured the necessary goods and services under the legal frame work. This legal framework developed at federal level in accordance with public procurement and property administration proclamation No 649/2009. Aligned with the federal

proclamation Addis Ababa City Administration Finance and Economic Development Bureau prepared Public Procurement Directive No. 3/2002 and AACRA is regulated by this directive. Regarding to E-Procurement there is no any directive or manual from the regulatory body, Addis Ababa City administration finance and economic development Bureau, to use e-procurement as a system in AACRA.

4.2.2.2 Descriptive Analysis of perception on Management Support and Employee Commitment

Table 4.8: Perception on Management Support and Employee Commitment

Independent Variables	Attributes for E-Procurement Adoption	N	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard deviation
Management Support and Employee Commitment	There is Commitment & Support from Top management to adopt e-procurement	121	21	57	22	20	1	2.3636	.98319
	Top management of AACRA has developed strategies to e – procurement	121	21	71	24	5	-	2.1074	.72803
	Top management is aware of the benefits of e - procurement.	121	15	37	22	46	1	2.8430	1.09551
	Top management is willing to invest on e-procurement adoption	121	19	59	25	18	-	2.3471	.91934
	Top management identifies the barriers to e - procurement.	121	16	37	28	38	2	2.7769	1.08388
	There is adequate resources necessary for e-procurement implementation	121	19	62	24	14	2	2.3223	.93287
	Top Management encourages employees to use e-procurement	121	18	66	21	16	-	2.2893	.87975
	Awareness about e-procurement is created for employees in procurement directorate.	121	17	75	24	4	1	2.1488	.72642
	Employees of procurement Directorate are professional and have the skill of Information Technology to facilitate e-procurement	121	13	61	27	18	2	2.4628	.93132
	AACRA has a capacity to allocate budget for initial cost like ICT Infrastructure set up, training and other acquisitions	121	6	7	7	51	50	4.0909	1.07238
	There is effective staff training program to develop employees e-procurement knowledge	121	17	76	16	8	4	2.2231	.88964
	Employees commitment to the adoption of e-procurement is high	121	12	63	23	19	4	2.5041	.98424

The percentage and mean of responses for each of the items for Management Support & Employee Commitment are shown in Table 4.8.

Respondents were requested to rank the level of their agreement to which they agreed or disagreed with Management Support and Employee commitment are affecting the adoption of e-procurement.

As the researcher expressed above, a five point Likert scale was used to measure the stated variable. Where 1 indicating —strongly disagree, 2 indicating —disagree, 3 indicating —neutral, 4 indicating —agree, and 5 indicating —strongly agree.

From the responses, Measurement of central tendencies was used to analyzing the data. The findings are as follows:

17.4% of the respondents are strongly disagree, 47.1% of the respondents are disagree and 18.2% of the respondents are moderately agree or indifferent and the rest 16.5% and 0.8% of respondents are agree and strongly agree respectively on the availability of commitment & support from Top management to adopt e-procurement.

17.4% of the respondents are strongly disagree and 58.7% of the respondents are disagree and 19.8% of the respondents are neutral and the rest 4.1% of respondents are agree and none respond to strongly agree for the developing of strategies to e-procurement by top management.

12.4% of the respondents are strongly disagree, 30.6% of the respondents are disagree and 18.2% of the respondents are moderately agree or indifferent and the rest 38% and 0.8% of respondents are agree and strongly agree respectively on the top management awareness of the benefits of e - procurement.

15.7% of the respondents are strongly disagree and 48.8% of the respondents are disagree and 20.7% of the respondents are neutral and the rest 14.9% of respondents are agree and none respond to strongly agree for willingness of top management to invest on e-procurement adoption.

13.2% of the respondents are strongly disagree, 30.6% of the respondents are disagree and 23.1% of the respondents are moderately agree or indifferent and the rest 31.4% and 1.7% of respondents are agree and strongly agree respectively on identification of the barriers to e – procurement by top management.

15.7% of the respondents are strongly disagree, 51.2% of the respondents are disagree and 19.8% of the respondents are moderately agree or indifferent and the rest 11.6% and 1.7% of respondents are agree and strongly agree respectively on adequacy of resources necessary for e-procurement implementation.

14.9% of the respondents are strongly disagree and 54.5% of the respondents are disagree and 17.4% of the respondents are neutral and the rest 13.2% of respondents are agree and none respond to strongly agree for the encouragement of employees by top management to use e-procurement.

14% of the respondents are strongly disagree, 62% of the respondents are disagree and 19.8% of the respondents are moderately agree or indifferent and the rest 3.3% and 0.8% of respondents are agree and strongly agree respectively on awareness of e-procurement for employees in AACRA Procurement Directorate.

10.7% of the respondents are strongly disagree, 50.4% of the respondents are disagree and 22.3% of the respondents are moderately agree or indifferent and the rest 14.9% and 1.7% of respondents are agree and strongly agree respectively in skill of information technology on employees of procurement directorate.

5% of the respondents are strongly disagree, 5.8% of the respondents are disagree and other 5.8% of the respondents are moderately agree or indifferent and the rest 42.1% and 41.3% of respondents are agree and strongly agree respectively on the capacity of AACRA to allocate budget for initial cost like ICT infrastructure set up.

14% of the respondents are strongly disagree, 62.8% of the respondents are disagree and 13.2% of the respondents are moderately agree or indifferent and the rest 6.6% and 3.3% of respondents are agree and strongly agree respectively on effective staff training program to develop employees e-procurement knowledge.

9.9% of the respondents are strongly disagree, 52.1% of the respondents are disagree and 19% of the respondents are moderately agree or indifferent and the rest 15.7% and 3.3% of respondents are agree and strongly agree respectively on employees commitment to the adoption of e-procurement.

From the findings in table 4.8 above, Management Support and Employee Commitment in AACRA is below a moderate agree with a mean value of less than 3 for all but one attributes of Management Support and Employee Commitment on e-procurement adoption as listed in the table above. This indicates that there is less Management Support and Employee Commitment for the adoption of e-procurement. AACRA Organization Change and Support Service Directorate Director General explained about this factor during my interview. According to his explanation, E-Procurement is a new system and it is not introduced by the regulatory body to practice in AACRA so the management of AACRA did not develop strategic plan about E-Procurement. In addition, he explained that there is no adequate skill man power in procurement directorate, their capacity to use an electronics system is limited. In this regard, they may prefer manual works than electronics system. And there is no well organized data center and the existing hardware and software are also not compatible with the new system adoption, IT directorate structure is also not well organized yet. It is ongoing to organize this directorate with a new structure. So these and other challenges not stated together may not lead the top management to adopt and use the E-Procurement. On the other hand from the above table 4.8 above 83% of the respondents were agree with one attribute of Management Support and Employee Commitment on e-procurement adoption i.e. the capacity of AACRA to allocate budget for initial cost like ICT infrastructure set up, training and other acquisitions. In this regard, it implies that AACRA can put strategic plan to commence e-procurement adoption process in short time if there is Management Support.

4.2.2.3 Descriptive Analysis of perception on Information Technology Infrastructure

Table 4.9: Perception on Information Technology Infrastructure

Independent Variables	Attributes for E-Procurement Adoption	N	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard deviation
Information Technology Infrastructure	ACCRA existing ICT Infrastructure is sufficient to facilitate e-procurement implementation	121	27	68	16	10	-	2.0744	.82830
	AACRA give high priority to develop Information and communication Technology	121	32	62	11	16	-	2.0909	.93986
	AACRA has adequate hard ware and software resources	121	24	64	12	21	-	2.2479	96851
	AACRA existing hardware and software are compatible with e-procurement implementation system	121	17	66	17	21	-	2.3471	92836
	AACRA has well organized Data Centre	121	24	72	15	9	1	2.0992	.83071
	AACRA has own website that enables e-procurement processes.	121	12	71	16	20	2	2.4132	.93692
	Internet service is available to facilitate the e-procurement implementation.	121	15	30	12	62	2	3.0496	1.15363
	AACRA use high broad band width on the internet connection	121	20	52	12	34	3	2.5702	1.13891
	There is consistent internet connection in AACRA	121	27	67	7	16	4	2.1983	1.03778
	When system failures encounter, AACRA handles easily and in short time	121	22	69	11	17	2	2.2397	.96631
	Internet network Infrastructures is easily accessible and affordable to all employees	121	26	75	8	9	3	2.0744	.89597
	Procurement Information is posted on AACRA website to inform providers.	121	18	78	13	9	3	2.1818	.86603
	Employees of IT Directorate are qualified	121	10	67	21	21	2	2.4876	.93198

The percentage and mean of responses for each of the items for Information Technology Infrastructure shown in Table 4.9.

Respondents were asked to rank the level of their agreement to which they agreed or disagreed with Information Technology Infrastructure are affecting the adoption of e-procurement. As the researcher expressed in the above table 4.7 & 4.8, the same five point Likert scale was used to measure the Information Technology Infrastructure. Where 1 indicating —strongly disagree, 2 indicating —disagree, 3 indicating —neutral, 4 indicating —agree, and 5 indicating —strongly agree.

From the responses, like the above two factors Measurement of central tendencies was used to analyzing the data. The findings are as follows:

22.3% of the respondents are strongly disagree, 56.2% of the respondents are disagree and 16% of the respondents are moderately agree or indifferent and the rest 10% and none respond to strongly agree on the Sufficiency of existing ICT infrastructure to facilitate e-procurement adoption.

26.4% of the respondents are strongly disagree and 51.2% of the respondents are disagree and 9.1% of the respondents are neutral and the rest 13.2% of respondents are agree and none respond to strongly agree for giving high priority to develop information and communication technology.

19.8% of the respondents are strongly disagree, 52.9% of the respondents are disagree and 9.9% of the respondents are moderately agree or indifferent and the rest 17.4% of respondents are agree and none respond to strongly agree on adequacy of hardware and software resources.

14% of the respondents are strongly disagree and 54.5% of the respondents are disagree and 14% of the respondents are neutral and the rest 17.4% of respondents are agree and none respond to strongly agree on compatibility of AACRA existing hardware and software for e-procurement implementation system.

19.8% of the respondents are strongly disagree, 59.5% of the respondents are disagree and 12.4% of the respondents are moderately agree or indifferent and the rest 7.4% and 0.8% of respondents are agree and strongly agree respectively on the availability of organized data center in AACRA. 9.9% of the respondents are strongly disagree, 58.7% of the respondents are disagree and 13.2% of the respondents are moderately agree or indifferent and the rest 16.5% and 1.7% of respondents are agree and strongly agree respectively on the availability of website that enables e-procurement processes.

12.4% of the respondents are strongly disagree and 24.8% of the respondents are disagree and 9.9% of the respondents are neutral and the rest 51.2% and 1.7% of respondents are agree and strongly agree respectively on the availability of Internet service.

16.5% of the respondents are strongly disagree, 43% of the respondents are disagree and 9.9% of the respondents are moderately agree or indifferent and the rest 28.1% and 3% of respondents are agree and strongly agree respectively on using of high broad band width on internet connection. 22.3% of the respondents are strongly disagree, 55.4% of the respondents are disagree and 5.8% of the respondents are moderately agree or indifferent and the rest 13.2% and 3.3% of respondents are agree and strongly agree respectively on internet connection consistency.

18.2% of the respondents are strongly disagree, 57% of the respondents are disagree and other 9.1% of the respondents are moderately agree or indifferent and the rest 14% and 1.7% of respondents are agree and strongly agree respectively on easily handling of system failures. 21.5% of the respondents are strongly disagree, 62.0% of the respondents are disagree and 6.6% of the respondents are moderately agree or indifferent and the rest 7.4% and 2.5% of respondents are agree and strongly agree respectively on easily accessible and affordable of internet network to all employees.

14.9% of the respondents are strongly disagree, 64.5% of the respondents are disagree and 10.7% of the respondents are moderately agree or indifferent and the rest 7.4% and 2.5% of respondents are agree and strongly agree respectively on posting of procurement information on AACRA website.

8.3% of the respondents are strongly disagree, 55.4% of the respondents are disagree and 17.4% of the respondents are moderately agree or indifferent and the rest 17.4% and 1.7% of respondents are agree and strongly agree respectively on qualification of IT directorate.

From the findings in table 4.8 above, Information Technology Infrastructure in AACRA is also below a moderate agree with a mean value of less than 3 for all but one attributes of Information Technology Infrastructure on e-procurement adoption as listed in the table above. This indicates that availability of Information Technology Infrastructure, which is a key factor, to adopt e-procurement is less. In this case, AACRA Organization Change and Support Service DDG give me some points in my interview as follows:

- AACRA has old data center with a very weak server and needs to repair
- the existing hardware and software are also not compatible with the new system like e-procurement
- internet service is not available for all employees
- IT directorate structure is also not well organized yet, it is ongoing to organize this directorate in a new structure
- during this period, there is no adequate skill man power in IT directorate and also their capacity to use a digital system is limited so it leads to poor development of new software

4.2.2.4 Descriptive Analysis of perception on Supplier Acceptance

Table 4.10: Perception on Supplier Acceptance

Independent Variables	Attributes for E-Procurement Adoption	N	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard deviation
Supplier acceptance	ACCRA use systems that involves suppliers in e-procurement adoption	121	22	66	27	6	-	2.1405	.76709
	AACRA suppliers are willing to use e - procurement system	121	10	56	34	21	-	2.5455	.87560
	AACRA suppliers have fear of security on e-procurement processes	121	7	36	38	35	5	2.9587	.99496
	AACRA provide training to suppliers on e-procurement adoption	121	18	68	29	5	1	2.1983	.77050
	UP to date procurement information will be given to suppliers through AACRA website	121	16	69	27	9	-	2.2397	.77486
	Supplier acceptance in the use of e-procurement is high	121	11	72	32	6	-	2.2727	.69522
	Suppliers believe that costs have reduced due to the implementation of e-procurement	121	7	44	32	37	1	2.8430	.95750
	Suppliers can easily access AACRA's Website	121	11	62	23	22	3	2.5372	.97503

The percentage and mean of responses for each of the items for supplier acceptance shown in Table 4.10.

Respondents were requested to indicate the level of their agreement to which they agreed or disagreed with supplier acceptance are affecting the adoption of e-procurement. As it is expressed in the above table 4.7, 4.8 & 4.9, a five point Likert scale was used to measure the supplier acceptance. Where 1 indicating —strongly disagree, 2 indicating —disagree, 3 indicating —neutral, 4 indicating —agree, and 5 indicating —strongly agree.

From the responses, Measurement of central tendencies was used to analyzing the data. The results are as follows:

18.2% of the respondents are strongly disagree, 54.5% of the respondents are disagree and 22.3% of the respondents are moderately agree or indifferent and the rest 5% of respondents are agree and none respond to strongly agree on the AACRA using systems whether it involves suppliers.
8.3% of the respondents are strongly disagree and 46.3% of the respondents are disagree and 28.1% of the respondents are neutral and the rest 17.4% of respondents are agree and none respond to strongly agree on willingness of suppliers to use e-procurement system.
5.8% of the respondents are strongly disagree, 29.8% of the respondents are disagree and 31.4% of the respondents are moderately agree or indifferent and the rest 28.9% and 4.1% of

respondents are agree and strongly agree on suppliers fear of security on e-procurement processes.

14.9% of the respondents are strongly disagree and 56.2% of the respondents are disagree and 24% of the respondents are neutral and the rest 4.1% and 0.8% of respondents are agree and strongly agree on providing training to suppliers by AACRA.

13.2% of the respondents are strongly disagree, 57% of the respondents are disagree and 22.3% of the respondents are moderately agree or indifferent and the rest 7.4% of respondents are agree and none respond to strongly agree on up to date procurement information given to suppliers through AACRA website.

9.1% of the respondents are strongly disagree, 59.5% of the respondents are disagree and 26.4% of the respondents are moderately agree or indifferent and the rest 5% of respondents are agree and none respond to strongly agree on acceptance of supplier in the use of e-procurement.

5.8% of the respondents are strongly disagree and 36.4% of the respondents are disagree and 26.4% of the respondents are neutral and the rest 30.6% and 0.8% of respondents are agree and strongly agree respectively on suppliers believing of costs reduction by the adoption of e-procurement.

9.1% of the respondents are strongly disagree, 51.2% of the respondents are disagree and 19% of the respondents are moderately agree or indifferent and the rest 18.2% and 2.5% of respondents are agree and strongly agree respectively on easily accessing of AACRAs' website by suppliers.

From the findings in table 4.10 above, the variable Supplier Acceptance is below a moderate agree with a mean value of less than 3 for all attributes of supplier acceptance on e-procurement adoption. This indicates also that there is less acceptance of e-procurement by AACRA suppliers. AACRA Organization Change and Support Service DDG give his ideas on this variable too during the interview period. He explained that, suppliers are the major stakeholders in procurement processes but most of AACRA suppliers' may lack of skilled persons; this leads the supplier not to leave the manual system and practice the new system. In addition, they may also have fear of security. When we see in AACRA side, IT infrastructure is poor in order to adopt and use e-procurement, there is no also developing system that involves suppliers in e-procurement processes and Legal frameworks also not developed.

4.2.2.5 Descriptive Analysis of perception on Adoption of E-Procurement Benefits

Table 4.11 perception on the Adoption of E-Procurement Benefits

Dependent Variables	Attributes for E-Procurement Adoption	N	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Standard deviation
Adoption of E-procurement Benefits and Readiness	Adoption of E - procurement score high achievement of value for money & transparency in AACRA procurement practices	121	3	22	25	49	22	3.5372	1.06490
	Adoption of E - procurement encourage supplier participation in AACRA procurement	121	3	19	20	58	21	3.6198	1.02678
	Adoption of E - procurement increases level of procurement effectiveness & efficiency	121	3	8	18	59	33	3.9174	.95382
	Adoption of E - procurement reduce imperfection in procurement transaction	121	3	8	15	65	30	3.9174	.92724
	Adoption of E – Procurement improved confidentiality & integrity of transactions between the buyer and the supplier	121	3	9	13	64	32	3.9339	.94636
	AACRA establishes proper standards, regulations & procedures on E-Procurement	121	9	20	22	50	20	3.4298	1.16781
	E – Procurement increases AACRAs' supplier satisfaction	121	4	11	22	61	23	3.7273	.98319
	AACRA is ready for the adoption of E-Procurement	121	9	69	33	5	5	2.0450	.85224

The percentage and mean of responses for each of the items for benefits of e-procurement adoption shown in Table 4.11.

Respondents were asked to indicate the level of their agreement to which they agreed or disagreed with the benefits of Adoption and use of E-Procurement. As it is expressed in the above table 4.7, 4.8, 4.9 & 4.10, a five point Likert scale was used to measure the benefits of Adoption of E-Procurement. Where 1 indicating ―strongly disagree, 2 indicating ―disagree, 3 indicating ―neutral, 4 indicating ―agree, and 5 indicating ―strongly agree.

From the responses, Measurement of central tendencies was used to analyzing the data. The findings are as follows:

2.5% of the respondents are strongly disagree, 18.2% of the respondents are disagree and 20.7% of the respondents are moderately agree or indifferent and the rest 40.4% and 18.2% of respondents are agree and strongly agree on the adoption of E - procurement score high achievement of value for money & transparency in AACRA procurement practices.

2.5% of the respondents are strongly disagree and 15.7% of the respondents are disagree and 16.5% of the respondents are neutral and the rest 47.9% and 17.4% of the respondents are strongly agree on the adoption of E - procurement encourage supplier participation in AACRA procurement.

2.5% of the respondents are strongly disagree, 6.6% of the respondents are disagree and 14.9% of the respondents are moderately agree or indifferent and the rest 48.8% and 27.3% of respondents are agree and strongly agree on the adoption of E - procurement increases level of procurement effectiveness & efficiency.

2.5% of the respondents are strongly disagree and 6.6% of the respondents are disagree and 12.4% of the respondents are neutral and the rest 53.7% and 24.8% of respondents are agree and strongly agree on the adoption of E - procurement reduce imperfection in procurement transaction.

2.5% of the respondents are strongly disagree, 7.4% of the respondents are disagree and 10.7% of the respondents are moderately agree or indifferent and the rest 52.9% and 26.4% of respondents are strongly agree on the adoption of E – Procurement improved confidentiality & integrity of transactions between the buyer and the supplier.

7.4% of the respondents are strongly disagree, 16.5% of the respondents are disagree and 18.2% of the respondents are moderately agree or indifferent and the rest 41.3% and 16.5% of respondents are strongly agree on establishment of proper standards, regulations & procedures on E-Procurement in AACRA.

3.3% of the respondents are strongly disagree and 9.1% of the respondents are disagree and 18.2% of the respondents are neutral and the rest 50.4% and 19% of respondents are agree and strongly agree respectively on increasing of AACRAs' supplier satisfaction.

7.4% of the respondents are strongly disagree, 57% of the respondents are disagree and 27.3% of the respondents are moderately agree or indifferent and the rest 4.1% and the other 4.1% of respondents are agree and strongly agree respectively on the adoption of e-procurement in AACRA.

From the findings in table 4.11 above the result revealed that, the variable benefits of e-procurement adoption is a moderate agree with a mean value of greater than 3 for all attributes of benefits of e-procurement adoption. This indicates that adoption and use of e–procurement would be obtained high achievement of value for money & transparency, encourage supplier satisfaction, increases level of procurement efficiencies & effectiveness, reduce imperfection in procurement transaction, improved confidentiality & integrity of transactions between the buyer and the supplier, increases supplier satisfaction and in addition it helps AACRA to establish proper standards, regulations and procedures on E-Procurement. It indicates that the adoption of e-procurement confirmed the expected benefits that would be obtained resulting from implementing the new system i.e. e-procurement.

4.3 Correlation Analysis

4.3.1 Hypothesis Test for Relationship of Availability of Government Policy and Readiness for the Adoption of E-Procurement in AACRA

Research Question

Is there significant relationship b/n Availability of Government Policy and Readiness of the Adoption of E-Procurement in AACRA?

Research Hypotheses

i.   Null Hypotheses

H_o: - The Availability of Government Policy at AACRA **has no** significant relationship with Readiness of the Adoption of E-Procurement in AACRA.

ii.   Alternative Hypotheses

H_a: - The Availability of Government Policy at AACRA **has** significant relationship with Readiness of the Adoption of E-Procurement in AACRA.

Correlations

		Availability of Government Policy	Readiness's to Adopt E-Procurement at AACRA
Availability of Government Policy	Pearson Correlation	1	.314[**]
	Sig. (2-tailed)		.000
	N	121	121
Readiness's to Adopt E-Procurement at AACRA	Pearson Correlation	.314[**]	1
	Sig. (2-tailed)	.000	
	N	121	121

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

Table 4.12 SPSS analysis output of Relationship of availability of government policy with readiness to adopt e-procurement

Result

A Pearson correlation has been run to assess the relationship between Availability of Government Policy and Readiness of the Adoption of E-Procurement in AACRA. The researcher used a sample of 121 participants. The correlation coefficient .314 is indicate that the relationship between Availability of Government Policy and Readiness of the Adoption of E-Procurement in AACRA is positively correlated relation each other and they are statistically significant, with the value of $r_s = .314$ and $p = .000$

Conclusion

Since the level of statistical significance (p-value) of the correlation coefficient is .000 which is less than Variance Ratio in this case is (.000< .314) it indicates that there is a Statistically significant relationship between Availability of Government Policy and Readiness of the Adoption of E-Procurement in AACRA; hence accept the alternative hypothesis and reject the null hypothesis and then conclude that **"Availability of Government Policy in the country has significant relationship with Readiness of the Adoption of E-Procurement in AACRA."**

4.3.2 Hypothesis Test for Relationship of Availability of Legal Frameworks and Readiness for the Adoption of E-Procurement in AACRA

Research Question

Is there significant relationship b/n Availability of Legal Frameworks and Readiness of the Adoption of E-Procurement in AACRA?

Research Hypotheses

i.   Null Hypotheses

H_o: - The Availability of Legal Frameworks at AACRA **has no** significant relationship with Readiness of the Adoption of E-Procurement in AACRA.

ii.   Alternative Hypotheses

H_a: - The Availability of Legal Frameworks at AACRA **has** significant relationship with Readiness of the Adoption of E-Procurement in AACRA.

Correlations

		Availability of Legal Framework	Readiness's to Adopt E-Procurement at AACRA
Availability of Legal Framework	Pearson Correlation	1	.312[**]
	Sig. (2-tailed)		.000
	N	121	121
Readiness's to Adopt E-Procurement at AACRA	Pearson Correlation	.312[**]	1
	Sig. (2-tailed)	.000	
	N	121	121

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

Table 4.13 SPSS analysis output of Relationship of availability of legal frameworks with readiness to adopt e-procurement

Result

A Pearson correlation has been run to assess the relationship between Availability of Legal Frameworks and Readiness of the Adoption of E-Procurement in AACRA. The researcher used a sample of 121 participants. The correlation coefficient .312 is indicate that the relationship between Availability of Legal Frameworks and Readiness of the Adoption of E-Procurement in AACRA is positively correlated relation each other and they are statistically significant, with the value of $r_s = .312$ and $p = .000$

Conclusion

Since the level of statistical significance (p-value) of the correlation coefficient is .000 which is less than Variance Ratio in this case is (.000< .312) it indicates that there is a Statistically significant relationship between Availability of Legal Frameworks and Readiness of the Adoption of E-Procurement in AACRA; hence accept the alternative hypothesis and reject the null hypothesis and then conclude that **"Availability of Legal Frameworks at AACRA has significant relationship with Readiness of the Adoption of E-Procurement in AACRA."**

4.3.3 Hypothesis Test for Relationship of Availability of Top Mgt Commitment & Support and Readiness for the Adoption of E-Procurement in AACRA

Is there significant relationship b/n **Availability of Top Mgt Commitment & Support** and Readiness of the Adoption of E-Procurement in AACRA?

Research Hypotheses

i.   Null Hypotheses

H_o: - The **Availability of Top Mgt Commitment & Support** at AACRA **has no** significant relationship with Readiness of the Adoption of E-Procurement in AACRA.

ii.   Alternative Hypotheses

H_a: - The **Availability of Top Mgt Commitment & Support** at AACRA **has** significant relationship with Readiness of the Adoption of E-Procurement in AACRA.

Correlations

		Availability of Top Mgt Commitment & Support	Readiness's to Adopt E-Procurement at AACRA
Availability of Top Mgt Commitment & Support	Pearson Correlation	1	.310[**]
	Sig. (2-tailed)		.001
	N	121	121
Readiness's to Adopt E-Procurement at AACRA	Pearson Correlation	.310[**]	1
	Sig. (2-tailed)	.001	
	N	121	121

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

Table 4.14 SPSS analysis output of Relationship of availability of top management commitment & support with readiness to adopt e-procurement

Result

A Pearson correlation has been run to assess the relationship between **Availability of Top Mgt Commitment & Support** and Readiness of the Adoption of E-Procurement in AACRA. The researcher used a sample of 121 participants. The correlation coefficient is .310 indicates that the relationship between **Availability of Top Mgt Commitment & Support** and Readiness of the Adoption of E-Procurement in AACRA is positively correlated relation each other and they are statistically significant, with the value of $r_s = .310$ and $p = .001$

Conclusion

Since the level of statistical significance (*p*-value) of the correlation coefficient is .001 which is less than Variance Ratio in this case is (.001< .310) it indicates that there is a Statistically significant relationship between **Availability of Top Mgt Commitment & Support** and Readiness of the Adoption of E-Procurement in AACRA; hence accept the alternative hypothesis and reject the null hypothesis and then conclude that **"Availability of Top Mgt Commitment & Support at AACRA has significant relationship with Readiness of the Adoption of E-Procurement in AACRA".**

4.3.4 Hypothesis Test for Relationship of Employee Commitment and Readiness for the Adoption of E-Procurement in AACRA

Is there significant relationship b/n **Employee Commitment** and Readiness of the Adoption of E-Procurement in AACRA?

i. Null Hypotheses

H$_o$: - **Employee Commitment** at AACRA **has no** significant relationship with Readiness of the Adoption of E-Procurement in AACRA.

ii. Alternative Hypotheses

H$_a$: - **Employee Commitment** at AACRA **has** significant relationship with Readiness of the Adoption of E-Procurement in AACRA.

Correlations

		Availability of Employee Commitment	Readiness's to Adopt E-Procurement at AACRA
Availability of Employee Commitment	Pearson Correlation	1	.351**
	Sig. (2-tailed)		.000
	N	121	121
Readiness's to Adopt E-Procurement at AACRA	Pearson Correlation	.351**	1
	Sig. (2-tailed)	.000	
	N	121	121

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

Table 4.15 SPSS analysis output of Relationship of availability of government policy with readiness to adopt e-procurement

Result

A Pearson correlation has been run to assess the relationship between **Employee Commitment** and Readiness of the Adoption of E-Procurement in AACRA. The researcher used a sample of 121 participants. The correlation coefficient .351 is indicate that the relationship between **Employee Commitment** and Readiness of the Adoption of E-Procurement in AACRA is positively correlated relation each other and they are statistically significant, with the value of $r_s = .351$ and $p = .000$

Conclusion

Since the level of statistical significance (*p*-value) of the correlation coefficient is .000 which is less than Variance Ratio in this case is (.000< .351) it indicates that there is a Statistically significant relationship between **Employee Commitment** and Readiness of the Adoption of E-Procurement in AACRA; hence accept the alternative Hypothesis and reject the null hypothesis and then conclude that **"Employee Commitment at AACRA has significant relationship with Readiness of the Adoption of E-Procurement in AACRA".**

4.3.5 Hypothesis Test for Relationship of Sufficiency of Existing ICT Infrastructure **and Readiness for the Adoption of E-Procurement in AACRA**

Is there significant relationship b/n Sufficiency of Existing ICT Infrastructure and Readiness of the Adoption of E-Procurement in AACRA?

i.   Null Hypotheses

H$_o$: - The Sufficiency of Existing ICT Infrastructure at AACRA **has no** significant relationship with Readiness of the Adoption of E-Procurement in AACRA.

ii.   Alternative Hypotheses

H$_a$: - The Sufficiency of Existing ICT Infrastructure at AACRA **has** significant relationship with Readiness of the Adoption of E-Procurement in AACRA.

Correlations

		Sufficiency of Existing ICT Infrastructure	Readiness's to Adopt E-Procurement at AACRA
Sufficiency of Existing ICT Infrastructure	Pearson Correlation	1	.134
	Sig. (2-tailed)		.143
	N	121	121
Readiness's to Adopt E-Procurement at AACRA	Pearson Correlation	.134	1
	Sig. (2-tailed)	.143	
	N	121	121

Table 4.16 SPSS analysis output of Relationship of sufficiency of existing ICT infrastructure with readiness to adopt e-procurement

Result

A Pearson correlation has been run to assess the relationship between Sufficiency of Existing ICT Infrastructure and Readiness of the Adoption of E-Procurement in AACRA. The researcher used a sample of 121 participants. The correlation coefficient .134 is indicate that the relationship between Sufficiency of Existing ICT Infrastructure and Readiness of the Adoption of E-Procurement in AACRA is positively correlated relation each other and they are statistically significant, with the value of $r_s = .134$ and $p = .143$

Conclusion

Since the level of statistical significance (*p*-value) of the correlation coefficient is .143 which is less than Variance Ratio in this case is (.143< .134) it indicates that there is a Statistically significant relationship between Sufficiency of Existing ICT Infrastructure and Readiness of the Adoption of E-Procurement in AACRA; hence accept the alternative Hypothesis and reject the null hypothesis and then conclude that **"**Sufficiency of Existing ICT Infrastructure **at AACRA has significant relationship with Readiness of the Adoption of E-Procurement in AACRA."**

4.3.6 Hypothesis Test for Relationship of Compatibility of Existing Hardware & Software **and Readiness for the Adoption of E-Procurement in AACRA**

Research Question

Is there significant relationship b/n Compatibility of Existing Hardware & Software and Readiness of the Adoption of E-Procurement in AACRA?

Research Hypotheses

i.   Null Hypotheses

H_o: - Compatibility of Existing Hardware & Software at AACRA **has no** significant relationship with Readiness of the Adoption of E-Procurement in AACRA.

ii.   Alternative Hypotheses

H_a: - Compatibility of Existing Hardware & Software at AACRA **has** significant relationship with Readiness of the Adoption of E-Procurement in AACRA.

Correlations

		Compatibility of Existing HW & SW	Readiness's to Adopt E-Procurement at AACRA
Compatibility of Existing HW & SW	Pearson Correlation	1	.221[*]
	Sig. (2-tailed)		.015
	N	121	121
Readiness's to Adopt E-Procurement at AACRA	Pearson Correlation	.221[*]	1
	Sig. (2-tailed)	.015	
	N	121	121

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

Table 4.17 SPSS analysis output of Relationship of compatibility of existing hardware and software with readiness to adopt e-procurement

Result

A Pearson correlation has been run to assess the relationship between Compatibility of Existing Hardware & Software and Readiness of the Adoption of E-Procurement in AACRA. The researcher used a sample of 121 participants. The correlation coefficient .314 is indicate that the relationship between Compatibility of Existing Hardware & Software and Readiness of the Adoption of E-Procurement in AACRA is positively correlated relation each other and they are statistically significant, with the value of $r_s = .221$ and $p = .015$

Conclusion

Since the level of statistical significance (*p*-value) of the correlation coefficient is .015 which is less than Variance Ratio in this case is (.015< .221) it indicates that there is a Statistically significant relationship between Compatibility of Existing Hardware & Software and Readiness of the Adoption of E-Procurement in AACRA; hence accept the alternative hypothesis and reject the null hypothesis and then conclude that "Compatibility of Existing Hardware & Software **at AACRA has significant relationship with Readiness of the Adoption of E-Procurement in AACRA".**

4.3.7 Hypothesis Test for Relationship of Availability of System Used By Supplier and Readiness for the Adoption of E-Procurement in AACRA

Research Question

Is there significant relationship b/n **Availability of System Used by Supplier** and Readiness of the Adoption of E-Procurement in AACRA?

Research Hypotheses

i.   Null Hypotheses

H_o: - **Availability of System Used by** AACRA **has no** significant relationship with Readiness of the Adoption of E-Procurement in AACRA.

ii.   Alternative Hypotheses

H_a: - **Availability of System Used by** AACRA **has** significant relationship with Readiness of the Adoption of E-Procurement in AACRA.

Correlations

		Availability of System Used By Supplier	Readiness's to Adopt E-Procurement at AACRA
Availability of System Used By Supplier	Pearson Correlation	1	.295[**]
	Sig. (2-tailed)		.001
	N	121	121
Readiness's to Adopt E-Procurement at AACRA	Pearson Correlation	.295[**]	1
	Sig. (2-tailed)	.001	
	N	121	121

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

Table 4.18 SPSS analysis output of Relationship of availability of system used by suppliers with readiness to adopt e-procurement

Result

A Pearson correlation has been run to assess the relationship between **Availability of System Used by Supplier** and Readiness of the Adoption of E-Procurement in AACRA. The researcher used a sample of 121 participants. The correlation coefficient .295 is indicate that the relationship between **Availability of System Used By Supplier** and Readiness of the Adoption of E-Procurement in AACRA is positively correlated relation each other and they are statistically significant, with the value of $r_s = .295$ and $p = .001$

Conclusion

Since the level of statistical significance (p-value) of the correlation coefficient is .001 which is less than Variance Ratio in this case is (.001< .295) it indicates that there is a Statistically significant relationship between **Availability of System Used by Supplier** and Readiness of the Adoption of E-Procurement in AACRA; hence accept the alternative hypothesis and reject the null hypothesis and then conclude that **"Availability of System Used by Supplier at AACRA has significant relationship with Readiness of the Adoption of E-Procurement in AACRA".**

4.3.8 Hypothesis Test for Relationship of Supplier Satisfactions **and Readiness for the Adoption of E-Procurement in AACRA**

Is there significant relationship b/n Supplier Satisfactions and Readiness of the Adoption of E-Procurement in AACRA?

Research Hypotheses

i. Null Hypotheses

H$_o$: - The Availability of Supplier Satisfactions at AACRA **has no** significant relationship with Readiness of the Adoption of E-Procurement in AACRA.

ii. Alternative Hypotheses

H$_a$: - The Availability of Supplier Satisfactions at AACRA **has** significant relationship with Readiness of the Adoption of E-Procurement in AACRA.

Correlations

		Increase Supplier Satisfactions	Readiness's to Adopt E-Procurement at AACRA
Increase Supplier Satisfactions	Pearson Correlation	1	-.036
	Sig. (2-tailed)		.694
	N	121	121
Readiness's to Adopt E-Procurement at AACRA	Pearson Correlation	-.036	1
	Sig. (2-tailed)	.694	
	N	121	121

Table 4.19 SPSS analysis output of Relationship of supplier satisfactions with readiness to adopt e-procurement

Result

A Pearson correlation has been run to assess the relationship between Supplier Satisfactions and Readiness of the Adoption of E-Procurement in AACRA. The researcher used a sample of 121 participants. The correlation coefficient -.036 is indicate that the relationship between Supplier Satisfactions and Readiness of the Adoption of E-Procurement in AACRA is negatively correlated relation each other and they are statistically insignificant, with the value of r_s = -.036 and p = .694

Conclusion

Since the level of statistical significance (p-value) of the correlation coefficient is .694 which is greater than Variance Ratio in this case is (.694 > -.036) it indicates that there is a Statistically insignificant relationship between Supplier Satisfactions and Readiness of the Adoption of E-Procurement in AACRA; hence reject the alternative Hypothesis and accept the null hypothesis and then conclude that **"Supplier Satisfactions at AACRA has no significant relationship with Readiness of the Adoption of E-Procurement in AACRA". i.e., Suppliers of AACRA has not satisfied with Readiness of the Adoption of E-Procurement.**

CHAPTER FIVE

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of findings

The aim of this research was to examine factors affecting the adoption of E-Procurement in AACRA. Data for the study were gathered from Addis Ababa City Roads Authority. The instrument that was uses to gather data was structure questionnaire and interview. The population for the study was AACRA permanent employees but those entire population was not be relevant for this research so the researcher selected some directorates that are more suitable for this research. Thus 1133 (90%) of employees, who are currently working in the selected directorates, was a target population from the total population of 1254 permanent employees. The researcher selected twelve percent (12%) of sample size and 136 questionnaires were distributed to all concerned employees. Many of the questionnaires were giving for the respondents physically and some of the questionnaires were sent through email and the researcher requested the respondents to fill and returned the questionnaire back in 7 days since the schedule was tight due to COVID-19 VIRUS current situations. Among 136 questionnaires the respondents fill and returned 121 (89%) for data analyses.

It was discovered in the research that, the respondents see benefits of e-Procurement adoption would be obtained high achievement of value for money & transparency, encourage supplier satisfaction, increases level of procurement efficiencies & effectiveness, reduce imperfection in procurement transaction, improved confidentiality & integrity of transactions between the buyer and supplier, increases supplier satisfaction and in addition it helps AACRA to establish proper standards, regulations and procedures on E-Procurement.

Based on the survey carried out for this study, the legal framework which is the most necessary part to adopt e-procurement is unavailable or is not known by most of the respondents in AACRA. The existing AACRA procurement practices are manual procurement and it is administered under the legal framework. This legal framework developed at federal level in accordance with public procurement and property administration proclamation No 649/2009. Aligned with the federal proclamation Addis Ababa City Administration Finance and Economic Development Bureau prepared Public Procurement Directive No. 3/2002 and AACRA is

regulated by this directive. Regarding to E-Procurement there is no any directive or manual from the regulatory body /Addis Ababa City administration finance and economic development Bureau/ to use e-procurement as a system in AACRA.

From the study it was found that there is less Management Support and Employee Commitment in AACRA for e-procurement. It is because E-Procurement is a new system and is not introduced by the regulatory body to practice in AACRA so the management of AACRA did not develop strategic plan about E-Procurement. In addition there is no adequate skill man power that has advance knowledge in procurement directorate; their capacity to use an electronics system is limited. In this regard, they may prefer manual works than electronics system. And there is no well organized data center and the existing hardware and software are also not compatible with the new system adoption, IT directorate structure is also not well organized yet. It is ongoing to organize this directorate in a new structure. So these and other challenges not stated together may not lead the top management to adopt and use the E-Procurement.

From the findings it is revealed that availability of Information Technology Infrastructure in AACRA, which is a key factor, to adopt e-procurement is less. It is resulted from that, AACRA has old data center with a very weak server and needs to repair, the existing hardware and software are not compatible with the new system, internet service is not available for most of employees, IT directorate structure is not well organized yet, during this period, there is no adequate skill man power in IT directorate; their capacity to use a digital system is limited that leads to poor development of new software.

The results proved that also there is less acceptance of e-procurement by AACRA suppliers. It is because of most of AACRA suppliers' lack of skilled persons; this leads the supplier not to leave the manual system and practice the new system, they have fear of security on e-procurement processes, and AACRAs' IT infrastructure is poor in order to adopt and use e-procurement, there is no also developing system that involves suppliers in e-procurement processes and Legal frameworks also has not developed.

Hence, the finding proved that; Legal Frameworks, Management Support and Employee Commitment, Information Technology Infrastructure and Supplier Acceptance are factors that affecting the adoption of e-procurement in AACRA. On the other hand the result revealed that, if e-procurement could adopt in AACRA, the organization would be benefited.

5.2 Conclusion

From the findings of the study, it can concluded that the four factors that the researcher use for this study; Legal Frameworks, Management Support and Employee Commitment, Information Technology Infrastructure and Supplier Acceptance, are factors that affecting the adoption of e-procurement in AACRA. On the other hand the result revealed that, if e-procurement could adopt in AACRA, the organization would be benefited. In this regard, the objectives of the study have been achieved.

The data collected from questionnaire and interview proved that unavailability of developed legal frameworks, less commitment from top management of AACRA, employees of procurement directorate and IT directorate limited capacity, old IT data centre and also server, limited internet access, poor IT infrastructure, no compatible of existing hardware and software for the new system, poor structure of IT directorate, unavailability of systems that involves suppliers for the new system, fear of security in suppliers side, and others are found that factors affecting the adoption of e-procurement.

In this regard, the legal frameworks should be developed by Addis Ababa City Administration Finance and Economic Development Bureau and AACRA management should also take its' initiative on the adoption of e-procurement since by introducing e-procurement, the organization may realize the benefits of e-procurement.

5.3 Recommendation

Based on the result of the research, the following recommendations have been forwarded for AACRA as well as AACRA's regulatory body.

➢ Addis Ababa City Administration Finance and Economic Development Bureau should develop a legal framework for e-procurement and AACRA also should take the initiative for the development of this legal framework since the organization will be benefited by adopting this new system

➢ Strategy plan for E – Procurement need to be developed by AACRA Top Management; that will be implemented in the future

➢ AACRA should develop well organized data center which is a key factor for adopting E-Procurement

➢ AACRA Top Management should give high priority to IT directorate and organized with qualified employees

➢ Effective staffs training programs about the new system need to be developed to develop employees' e-procurement knowledge

➢ Capacity building for employees; especially for procurement, finance and IT directorate on digital system works should be necessary. It helps them to develop their capacity to use electronics system

➢ AACRAs' existing hardware and software need to be compatible with the new system adoption

➢ Internet service access should be available for all of employees in the organization

➢ AACRA need to develop a system that involves suppliers in e-procurement processes

5.4 Suggestion for Future Studies

This study can serve as a guideline for future research. The researcher focus is on legal frameworks, management support and employee commitment, information technology infrastructure and supplier acceptance of AACRA and whether it will affect the adoption of e-procurement in the organization.

This study is limited; it is focused only on some factors however, similar study can be conducted focusing on different factors that affect the adoption of e-procurement.

The researcher recommends that this same study can be conducted again but on a wider scope. i.e., it should include more public organization and increase the population size.

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QUESTIONNAIRE

Dear Respondents,

I am a post graduate student at St. Mary's University in the department of General Business Administration. This questionnaire is designed to collect information for the research entitled "Factors Affecting the Adoption of E-procurement in Public Organization'', The Case of Addis Ababa City Roads Authority. The results of this study will be used purely for academic purposes and your answers to the questionnaire will be treated with confidentiality.

The survey may take about 30 minutes to complete, your cooperation in responding to this questionnaire will be highly appreciated and Thank you in advance.

Notice: -   please do not write your name on the questionnaire

Part I. Background of the Respondent

Please put a tick mark in the box provided

1. Sex: Male ☐   Female ☐

2. Age (in years) 18-25 ☐   26-35 ☐   36-45 ☐   46-55 ☐   Above 56 ☐

3. Educational Back ground

      Certificate ☐   College Diploma ☐   BA/BSC ☐

      MBA/MA/MSC ☐   PHD and Above ☐

4. Total years of Service in the Organization

      1-5 ☐   6-10 ☐   11-15 ☐   16-20 ☐   Above 20 years ☐

5. Current Position
      Officer ☐   Senior Officer ☐   Lead Officer ☐   Team Leader ☐

      Director ☐

6. Field of Specialization

Procurement & Supplies Management ☐   Accounting / Management ☐

Information Technology ☐   Engineering ☐   Others ☐

Part II Research related Questions

Please put a tick mark under a given number to show the degree of your agreement   or disagreement with the following factors:-

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Factor 1. Legal Frameworks		1	2	3	4	5
1.	There is Government Policy in the country to use e-procurement					
2.	There is Legal Framework to use e – procurement					
3.	There is Proclamation in the country to facilitate the use of e-procurement					
4.	The laws governing e-procurement have been effectively developed in AACRA					
5.	AACRA introduce the necessary laws and regulations to support e-procurement					
6.	There is legal and administrative Procedure in AACRA for e-procurement adoption					
7.	There is e-procurement Policy manual in AACRA to guide the implementation process					
8.	There is e-procurement operations instruction in AACRA					

Factor 2. Management Support and Employee Commitment	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
1. There is Commitment & Support from Top management to adopt e-procurement					
2. Top management of AACRA has developed strategies to e – procurement.					
3. Top management is aware of the benefits of e - procurement.					
4. Top management is willing to invest on e-procurement adoption					
5. Top management identifies the barriers to e - procurement.					
6. There is adequate resources necessary for e-procurement implementation					
7. Top Management encourages employees to use e-procurement					
8. Awareness about e-procurement is created for employees in procurement directorate.					
9. Employees of procurement Directorate are professional and have the skill of Information Technology to facilitate e-procurement					
10. AACRA has a capacity to allocate budget for initial cost like ICT Infrastructure set up, training and other acquisitions					
11. There is effective staff training program to develop employees e-procurement knowledge					
12. Employees commitment to the adoption of e-procurement is high					

Factor 3. Information Technology Infrastructure	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5
1. ACCRA existing ICT Infrastructure is sufficient to facilitate e-procurement implementation					
2. AACRA give high priority to develop Information and communication Technology					
3. AACRA has adequate hard ware and software resources					
4. AACRA existing hardware and software are compatible with e-procurement implementation system					
5. AACRA has well organized Data Centre					
6. AACRA has own website that enables e-procurement processes.					
7. Internet service is available to facilitate the e-procurement implementation.					
8. AACRA use high broad band width on the internet connection					
9. There is consistent internet connection in AACRA					
10. When system failures encounter, AACRA handles easily and in short time					
11. Internet network Infrastructures is easily accessible and affordable to all employees					
12. Procurement Information is posted on AACRA website to inform providers.					
13. Employees of IT Directorate are qualified					

Factor 4. Supplier acceptance	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5
1. ACCRA use systems that involves suppliers in e-procurement adoption					
2. AACRA suppliers are willing to use e - procurement system					
3. AACRA suppliers have fear of security on e-procurement processes					
4. AACRA provide training to suppliers on e-procurement adoption					
5. UP to date procurement information will be given to suppliers through AACRA website					
6. Supplier acceptance in the use of e-procurement is high					
7. Suppliers believe that costs have reduced due to the implementation of e-procurement					
8. Suppliers can easily access AACRA's Website					

5. Adoption of E-procurement Benefits

5. Adoption of E-procurement Benefits	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	1	**2**	**3**	**4**	**5**
1. Adoption of E - procurement score high achievement of value for money & transparency in AACRA procurement practices					
2. Adoption of E - procurement encourage supplier participation in AACRA procurement					
3. Adoption of E - procurement increases level of procurement effectiveness & efficiency					
4. Adoption of E - procurement reduce imperfection in procurement transaction					
5. Adoption of E – Procurement improved confidentiality & integrity of transactions between the buyer and the supplier					
6. AACRA establishes proper standards, regulations & procedures on E-Procurement					
7. E – Procurement increases AACRAs' supplier satisfaction					
8. AACRA is ready for the adoption of E- Procurement					