ASSESSING THE EFFECTS OF PROCUREMENT RISK MANAGEMENT PRACTICES ON PROCUREMENT PERFORMANCE: A CASE OF RUWASA DODOMA

NELSON PAUL

Master Degree of Business Administration in Procurement and Supplies Management of the Institute of Accountancy Arusha

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NELSON PAUL

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NOVEMBER, 2023

DECLARATION

I, Nelson Paul declare that this dissertation is my own original work and that it has been presented to Institute of Accountancy Arusha as a partial fulfilment of the requirement for degree of Master of Business Administration in Procurement and Supplies Management of the Institute of Accountancy Arusha and will not be presented to any university for similar or any other degree award.

Signature……

Date……..…….

CERTIFICATION

I, the undersigned certify that I have read and hereby recommend for acceptance by Institute of Accountancy Arusha a dissertation titled: “An Assessment of effects of procurement risk management on procurement performance in public institutions: A case study of RUWASA DODOMA: in partial fulfilment of the requirements for the degree of Master of Business Administration in Procurement and Supplies Management of the Institute of Accountancy Arusha.

Signature: …….

Name of supervisor: Mr. Stephen Mayani.

Date …….

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ABSTRACT

The purpose of the study is assess the effect of procurement risk management practices in the procurement performance at RUWASA. To realize the purpose, the specific objectives were:- to determine the effect of procurement risk identification on procurement performance at RUWASA; to find out the effect of procurement risk monitoring practices on procurement performance at RUWASA and to determine the effect of procurement risk mitigation practices on procurement performance at RUWASA. The study employed a mixed-quantitative and qualitative research design in which both primary and secondary data was collected via interview, questionnaires and documentary review. The pragmatism research paradigm which upholds the use of different approaches to understand a problem was adopted. The purposive sampling techniques was used to collect the data. The entire population of 70 respondents was studied through census inquiry. The collected data was analyzed through the descriptive statistics, factor analysis, content analysis and regression. In the first objective, the study revealed that procurement risk identification practice was found to have a positive effects on the procurement performance. In the second objective, the study revealed that effective procurement risk mitigation practice lead to effective and efficient procurement performance. In the last objective, the study noted that procurement risk monitoring has a positive effect on procurement performance. The study recommends that procurement management team need to consider these risks when intending to increase performance of procurement functions within the organization. Failure to identify these risks earlier reduces procurement performance in terms of delay in delivery and completion of projects; obtain goods, works and services of poor quality, cost overruns and customer dissatisfactions.

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ABBREVIATIONS AND ACRONYMS

GEUWASA	Geita Urban Water Supply and Sanitation Authority
IAA	Institute of Accountancy Arusha
KASHWASA	Kahama Shinyanga Water Supply and Sanitation Authority
KUWASA	Kahama Urban Water Supply and Sanitation Authority
PE's	Procurement Entity
PPA	Public Procurement Act
PPR	Public Procurement Regulations
RUWASA	Rural Water Supply and Sanitation Agency
URT	United Republic of Tanzania

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter covers the background of the study, statement of the problem, general and specific objectives of the study, research questions, and scope of the study, limitation of the study and significance of the study.

1.2 Background of the study

The strategic approach of procurement risk management practices involves modifying public procurement laws, policies, and guidelines to create an organization's procurement risk framework register. This improves the system of decision-making towards organizational performance by minimizing risks and maximizing opportunities. In order to give a reasonable level of assurance regarding the accomplishment of the organization's goals, procurement risk management methods include identification, mitigation, and monitoring of procurement risks (Hillier.D, 2021). Procurement performance is determined by the organization's appetite for risk, which is why there is a growing body of research on the advantages of procurement performance resulting from best practices in public procurement for procurement risk management (Otieno, 2013). Generally speaking, empirical data indicates that risk management procedures raise the possibility of organizational success. According to studies, the likelihood that a procurement process will succeed increases if risks are effectively managed. These steps include setting up the context, carrying out risk assessment (i.e., risk identification, analysis, and evaluation), organizing and carrying out risk treatments, speaking with stakeholders, monitoring, and reviewing the process, and implementing risk mitigation strategies like risk treatment (terminate, tolerate, transfer, and terminate) (European Commission, 2010).

Globally speaking, procurement risks are those that have the power to impede or disrupt business operations. These include unstable labor markets and politics, the possibility that competitors will acquire a supplier, and risks associated with delays and subpar quality. As a result, the public water sector is unable to satisfy consumer demand and may even endanger the lives and safety of its patrons. Therefore, in order to lessen the impact of the procurement risk, the organization in the water sector needs to use risk management techniques (European Commission, 2010). International standard ISO 31000, however, also said that companies of all shapes and sizes deal with internal and external forces and circumstances that raise doubts about their ability to accomplish their goals.[1] As a result, risk management involves communicating with internal and external stakeholders and helps businesses develop strategies, accomplish goals, and make wise decisions. Additionally a component of leadership and governance, risk management is essential to the way the company is run at all levels. It helps to make management systems better (https://www.iso.org/standard/65694.html). Reached on March 18, 2023. According to Stoyana (2017), all forms of procurement risk in water supply projects must be managed through specific procedures both in the project's initial phase and throughout, outlining potential outcomes, their ramifications, and the execution of the most suitable measures. By doing this, the detrimental consequences would be reduced and the beneficial outcomes would be increased.

Africa has been dealing with issues for a very long time. However, risk management is a prerequisite for all prosperous economies in order to achieve steady, sustained growth. African businesses must be adept at managing risk, but they also need to be adept at managing how risk is perceived (African Business, 2012). In South Africa, procurement risk management procedures are determined by the In order to evaluate and manage the uncertainties that South Africa faces as a result of the nature of the business, changes in the environment, legislation,

and the control environment, risk management guidelines are designed to create an organized and consistent approach to risk management by aligning strategy, processes, people, technology, and information systems (Environmental Affairs, 2013).

According to Peter et al. (2018), procurement risk management significantly affects the procurement performance of megaprojects in Kenya's energy industry in East Africa. In order to improve the collection of sufficient, accurate data for risk pricing (to lessen political influence) and evaluation processes, their report advised expanded adoption of procurement risk management practices and a review of the procurement mechanism. According to Tuhuhairwe and Ahimbisiwe (2016), record management success in Uganda is significantly predicted by compliance with procurement records and efficient risk management. Additionally, the data imply that the performance of records management is more strongly impacted by good risk management than procurement records compliance.

Mwambafula (2020) discovered that risk comes from a variety of sources in Tanzania, including financial risk, market risk, organizational and societal risk, technology risk, and regulatory risk. Therefore, the study suggests that in order to effectively mitigate risks, management of businesses should implement cost-effective ways to detect risks in a timely manner. Businesses must modify the way they manage procurement risk. Subsequent research suggested that in order to reduce procurement risk in the public sector, procuring organizations such as TANESCO and TPA should implement best practices for managing procurement risks (Justine, 2018).

In this study, the identified water utility organizations' procurement performance was evaluated with respect to the potential benefits of procurement risk management practices, including procurement risk identification, mitigation, and monitoring (Ntangeki, 2020).

The United Republic of Tanzanian government has intervened multiple times to help the procuring body use procurement risk management techniques that improve procurement

performance. These interventions include the Public Procurement Act Amendment and its regulations from 1992 to the present, the regular PPRA Audit reports, and the CAG. Furthermore, with the implementation of the electronic procurement system (TANePS), the tender document was established with clauses that are crucial to the practice of procurement risk management. The conditions required the contractor or supplier to produce an advance payment guarantee, the bidder to submit a performance security prior to contract signing, and the bidder to submit a tender security or security declaration during the tendering process. To improve contract management and procurement risk management throughout the whole procurement process, all of these elements were included in the tender and contract agreements (Bilabaye, 2019). Notwithstanding these efforts, there are still procurement concerns, such as inadequate quality, late delivery, and contracts without performance guarantees (Mwambafula, 2020).

The majority of research did not find a relationship between public water sector procurement performance and procurement risk management practices. As a result, the main objective of this study was to evaluate how procurement risk management practices affected procurement performance, specifically in the Dodoma City headquarters of RUWASA.

1.2 Statement of the problem

Over 70% of Tanzania's annual budget is allocated to procurement activities by the government. The implementation of risk management principles in procurement activities is vital to expedite government efforts towards achieving the development goals, particularly in light of the substantial funding allocated for development projects. Since 1992, the Tanzanian government has worked to modernize public procurement on the country's mainland. The main focus of all the reforms was on practices for managing procurement risk, such as lengthy procurement processes, delayed delivery, avoiding withdrawals of tenders during the tendering process, making sure that requirements were properly planned, high prices for goods, low-quality

products supplied, late supplier payments, and corrupt practices (Controller and Auditor General, 2020).

The Ministry of Water allocated 657.8 billion for the implementation of water supply projects nationwide in the fiscal year 2022–2023. (Speech of Minister of Water, 2022). As highlighted by Justine (2018), this necessitates the use of procurement risk management techniques in the public water sector as a means of reducing procurement risk in the public sector.

The current state of affairs, as revealed by the PPRA report 2022, indicates that procurement risks exist in the pre-contract and post-contract award phases of water supply projects. The Ministry of Water failed to use the performance security as instructed by the Attorney General, RUWASA completed contracts worth $7 billion without a performance guarantee, and the pipes used for the water services project did not meet the design's specifications and calculations. The diameter of the acquired pipes was less than that of the intended pipes. The intended objectives and water flow are at danger because of this. The goods were delivered later than expected, and the liquidated damages clauses that were meant to cover the damages were unaffected (Controller and Auditor General, 2022). The vulnerabilities brought up by the PPRA and CAG are common procurement concerns in different procurement stages. This drove the researcher to collect information in order to evaluate how risk management techniques affected the water sector's procurement performance.

1.3 Study objective

1.3.1 General objectives

To assess the effect of procurement risk management practices on procurement performance in public institutions in Tanzania

1.3.2 Specific Objectives

i. To determine the effect of procurement risk identification on procurement performance at RUWASA
ii. To find out the effect of procurement risk monitoring practices on procurement performance at RUWASA
iii. To determine the effect of procurement risk mitigation practices on procurement performance at RUWASA

1.4 Research Questions

i. To what extent does procurement risk identification practices effect the procurement performance at RUWASA?
ii. To what extent does procurement risk monitoring practices effect the procurement performance at RUWASA?
iii. How does the procurement risk mitigation practices effect the procurement performance at RUWASA?

1.5 Scope of the study

This study's geographic scope was limited to the Dodoma City-based RUWASA Headquarter. Without providing performance security, the agency carries out the $7 billion deal (CAG, 2022). In order to learn more about the impact of procurement risk management strategies on procurement performance, the researcher chose the Agency. A method of deliberate sampling was employed to choose the PMUs and the User department. The study used interviews and questionnaires to gather information that can be further quantified for statistical analysis.

1.6 Limitations of the Study

Due to time and budgetary limitations, the study was unable to cover all Tanzanian water facilities. For this investigation, only one agency was chosen to be employed. The researcher worked in public offices for a while. It is anticipated that problems like lack of cooperation and secrecy with certain papers will make the data collection process difficult. The study's shortcomings were addressed by selecting cooperative responders who worked diligently to fulfill deadlines.

1.7 Significance of the Study

The study improved the government's efforts to successfully implement the water project by proactively identifying the best techniques for monitoring, mitigating, and recognizing any procurement risk. In order to improve procurement performance, the study's recommendations for proper practices of risk identification, monitoring, and mitigation were given to the procurement organization at the conclusion. This made it possible for the management of the relevant water company to assure correct adherence to the tender document's clauses, make well-informed budgetary decisions, and, most importantly, the study improved compliance with the Public Procurement Act and its restrictions.

1.8 Organization of the Dissertation

The dissertation is divided into five chapters in total. The background to the study, the problem statement, the research objectives, the researcher questions, the significance of the study, and its organization are all described in Chapter one. The review of theories and earlier studies relating to the risk management practices is presented in Chapter Two .The research methodology is presented in Chapter three, which focuses on the research design, the area of study, the population, variables and their measurement, sample size and sampling techniques, type and source of data, data collection methods, and data analysis methods. The results of the

suggested data analysis techniques are summarized in Chapter four, and a discussion based on the particular objective of this study is made. Chapter five includes a summary of the study, a noteworthy conclusion drawn from the study objectives, and study recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The knowledge gap, theoretical framework, conceptual framework, and empirical and theoretical literature reviews are all covered in this chapter. The definitions of important terminology and the guiding theories for the investigation have been discussed in the theoretical section. The hypothesis that will direct the investigation is the resources dependency theory. Additionally, to determine the research gap, the local and international studies have been analysed in turn in the empirical literature review section. The chapter concludes with the development of the analytical conceptual framework, which is followed by an explanation of the study variables.

2.1 Definition of Key Terms

2.1.1 Procurement

Procurement encompasses all activities related to obtaining any goods, works, or services, such as requirement description, tender invitation and selection, contract preparation and award, and renting, leasing, or any other form of acquisition by a procuring entity (URT, 2011).

2.1.2 Risk

According to Vincent (2018), risk is an unforeseen circumstance or occurrence that, if it materializes, may have a favorable or unfavorable impact on one or more project objectives, including scope, schedule, cost, and quality.

2.1.3 Procurement risk

Gitau (2015) characterizes procurement risk as the likelihood that a particular stage of the cycle intended to acquire goods, services, or works would fail. Procurement risk, according to Chattered Institute of Purchasing and Supply (2019), is the likelihood that an unfavorable result would arise during the process. The possibility of a procurement process going wrong while buying resources, services, or goods is known as procurement risk. This risk can include issues with delivery, quality, cost, fraud, and corruption (Okonjo, 2014).

2.1.4 Risk Management

Risk management is defined as the systematic application of management policies, processes, and procedures to the tasks of establishing the context, identifying, assessing, and treating risks as well as monitoring and notifying procurement stakeholders about them (Management and Manual, 2015). Wang (2018) defined risk management as the 10 processes of risk detection, analysis, response, control, and evaluation in order to achieve organizational goals.

2.1.5 Procurement performance

The act of figuring out or measuring the efficacy and efficiency of procurement functions is known as a procurement performance metric (Okonjo, 2014). The organization uses its procurement performance as a benchmark to assess how well it has accomplished its goals. This allows the company to identify its areas of strength and weakness and develop plans for enhancing its procurement performance (Odondo, 2018). Lyson and Farrington (2006) and Altaker (2013) both state that assessing procurement performance is critical since it helps the company assess how well all of its goals and strategies for procurement are being carried out.

2.1.6 Procurement risk management practices

According to Maira's (2014) research, risk management strategies are related to risk management measures that are intended to lower the likelihood of hazards occurring or to lessen the effect of risks both proactively and reactively. Some of the best practices in risk management include risk identification, identifying risk sources that could affect procurement, risk analysis and assessment, stakeholder involvement in risk management, establishing clear policies for risk management, and risk monitoring, control, and review (Owur et al., 2018).

2.1.7 Rural Water Supply and Sanitation Agency (RUWASA)

The term RUWASA refers to the Rural Water Supply and Sanitation Agency, which was founded in accordance with Water Supply and Sanitation Act of 2019 Section 42 (WSSA, 2019).

2.2 Theoretical literature review

Two major theories were employed in this study: principal agency theory and contingency theory. Below is an explanation of these theories:

2.2.1 Contingency theory

Researchers at Ohio State University created the contingency theory of management in the early 1950s. They argued that since organizations typically operate in uncertain environments, the best course of action for management is to react to both internal and external circumstances. The goal of the contingency theory of management is to give managers the flexibility to adjust their strategies, decisions, leadership philosophies, and policies in response to changing circumstances (Kulkarni, 2017). The organizational management theory known as "contingency theory" holds that an organization's success is contingent upon both internal and external contingencies, regardless of how well-planned an organization is.

Contingency theory of management informs management on the importance of understanding uncertainties in order to design appropriate responses (Ongola, 2014). This theory holds that

there is only one proper method to manage procurement risk in an unpredictable environment, and that way is through organizational decision-making, leadership, and structure. Therefore, by implementing this idea, the firm should manage procurement risks. As an alternative, managerial personnel may decide to take action after considering the existing situation.

Using four approaches, organizations can apply this theory (Burrell and Morgan, 2017): management should recognize that organizations are open systems that need to be well managed to satisfy needs both internal and external by adapting to uncertainties; organization should understand that there is no right or wrong way to lead an organization—rather, it depends on the activities undertaken and the environment in which it is placed; organization should focus on goal alignment and achievement in a variety of ways; and, finally, environment is dynamic and requires different types of organizations in order to implement specific processes.

According to the notion previously mentioned, organizations often handle their financial and procurement activities among other things in an unpredictable environment since the future is unclear. Therefore, management must employ both a proactive and reactive approach, i.e., contingency theory, with the aim of avoiding risks, in order to maximize the performance of these operations. This theory relates to the study because it states that in order to manage procurement risks, which are unanticipated events, the stakeholders in the procurement process must recognize the uncertain situations (risks) and establish a suitable strategy based on the current circumstances.

2.2.2 Principal agency theory

This theory was developed by Jensen and Meckling (1976), Mirrlees (1976), Ross (1973), and Stiglitz (1975). The primary purpose of developing principal agency theory was to explain the relationship that exists between principle and agent. Analysis of the division of ownership, control, and managerial incentive is the focus of agency theory. This approach appears to have a positive impact on risk taking, hedging, and risk management altitude, particularly in corporate

risk management (Klimczak, 2007). Theoretically, a mismatch between shareholders' significant contributions and management can lead to an organization's taking on excessive risk. The normal application of agency theory gives shareholders more assistance in mitigating supply chain and procurement risks.

According to agency theory, owners, executive management, managers, and other stakeholders, such as the general public, appoint an agent to carry out tasks on their behalf. The agent's duty is to act in a way that advances the goals of the principal, and occasionally the principle assigns the organization management, acting as the shareholder's agent, the task of managing the business (Mrope, 2017). This idea is pertinent to the study because it guarantees that all taught agents will perform their assigned jobs with diligence and ethics, hence ensuring good procurement risk management. Managers, staff members, and other public officials who are involved in the procurement process in any capacity should act as agents carrying out all tasks assigned by the government and the general public.

The theory strengthens the notion of allocating priority between an individual or group and the agent with the right to represent them. The process of procurement risk management relies heavily on prioritization for both identification and mitigation of risks. Furthermore, in order to reduce the risks associated with public procurement, including corruption, delays, subpar product quality, and needless changes, all parties involved in the process should adhere to the Public Procurement Act and its requirements (Shapiro, 2005).According to agency theory, public procurement performance is influenced by the acts and inactions of procurement stakeholders, which in turn affects the performance of the government (the Principal).

While the Tanzania National Electronic Procurement System (TANePS) emphasizes the use of modern information and communication technology in procurement, minimizing the risk of manual procurement records, transaction costs, and needless delays—common procurement

risks in public procurement—the Agency Theory raises the consciousness and responsibility of agents (procurement stakeholders), compelling them to carry out their responsibilities and abide by the rules and regulations currently in place, hence reducing risks and improving procurement performance. On the other hand, the Agency theory advises the Government (Principal) to obtain necessary support, such as financial support, training, and other resources. This theory cover the aspects of procurement risk identification, procurement risk mitigation, and procurement risk monitoring on the procurement performance.

2.3 Empirical literature review

2.3.1 Foreign studies

2.3.1.1 The Effect of Procurement Risk Identification on the Procurement Performance

A study on the impact of procurement risk management methods on risk management in construction enterprises was carried out by Timothy Adu Gyamfia and Amphil (2015). The results showed that most companies' procurement management procedures complied with risk identification, analysis, and reaction processes as well as risk monitoring, and that management teams were generally more focused on risk identification or assessment.

Aghajanian (2018) discovered that in order to ensure effective supply chain and procurement risk management, the business should use best practices including risk identification, risk assessment, decision-making and action-taking for risk management, and risk monitoring. It has been proposed that this study's significant difference between the pre-identification and identification stages will help practitioners detect procurement risk more precisely. Additionally, he found that implementing best practices for procurement and supply chain risk management greatly enhances procurement performance.

Laradi (2017) studied how supply chain risk management was evaluated in Libya's oil sector in relation to material acquisition. The results showed that supply chain risks, demand risks, supply chain risks, and infrastructure (financial, transportation, and information) hazards were prevalent supply chain and procurement risks for the purchase of commodities. The study also found that the risk management procedure for the acquisition of materials should include risk identification, risk assessment, risk mitigation, and risk monitoring. This shows that the material procurement process performs better when the appropriate risk management procedure is used.

A study on the effects of risk management techniques on project performance was carried out by Slincu and Ciobanu (2013). Their research showed that risk monitoring and control are critical to public construction projects because they can identify and mitigate new risks that could negatively impact project performance and enable early and proactive corrective action. It also shown how closely risk monitoring, control, and project performance are related.

A study on contract management as a useful tool for risk management was carried out by Pawar, Jain, and Gaikwad (2015). According to the study, risk management may be effectively managed by assigning risks to different stakeholders under different contracts. Risk management rules should also be set up at every stage of the project life cycle.

A study on risk management for hospitals in China and the United Kingdom (UK)'s health supply chain was conducted by Wang (2018). The research used a deductive methodology, combining quantitative and qualitative methodologies in triangulation. According to the study's findings, the health supply chain's performance is significantly impacted by risk factor identification, risk assessment, risk reduction, and risk monitoring.

2.3.1.2 The Effect of Procurement Risk Mitigation on the Procurement Performance

A study on the investigation of risk management strategies' influence on new product development program performance was carried out by Oehmen et al. (2014). The findings indicated the six most effective categories for managing procurement risk, including building resources and skills for risk management, integrating risk management with new product development, quantifying the impact of risk in the primary goals, using risk management results to support all important decisions, monitoring and reviewing your risks, developing strategies and processes for risk mitigation, and establishing transparency regarding the risks associated with new product development.

Okonjo (2014) investigated the effects of supply chain performance of Kenyan mobile phone service providers on procurement risk management methods. The findings demonstrated that the majority of mobile service providers used practices for managing procurement risk, including supply chain financing, multi-sourcing, regular supplier negotiations, value engineering, workforce and organization, sourcing and category, procurement strategy, and back-to-back contracts. Additionally, a substantial correlation between supply chain performance and procurement risk mitigation techniques was discovered.

Ahimbisibwe (2016) on his research on the performance of records management, effective risk management, and compliance with procurement records. Nineteen significant relationships between the study variables were found. Additionally, the study showed that procurement performance is more strongly impacted by efficient risk management. Additionally, the results demonstrate that good risk mitigation and procurement records compliance are important indicators of records management effectiveness, which in turn improves procurement performance in public enterprises.

Major risks associated with e-procurement include attacks by computer viruses and worms, unreliable internet services, information leakage or hacking, and technological incompatibility, according to a study by Eliufoo et al. (2017) on the risks of e-procurement and mitigation strategies of Tanzanian construction companies. According to the survey, information and communication technology (ICT) management and monitoring, e-procurement expertise, and compliance with national procurement guidelines are some of the risk mitigation techniques for construction companies.

2.3.1.3 The Effect of Procurement Risk Monitoring on the Procurement Performance

According to Stoyanova's (2017) study on the evaluation of project management in the Bulgarian water sector, all risks must be managed through specific procedures in both the project's initial phase and subsequent phases. These procedures must describe potential events, their consequences, and the implementation of the most suitable activities. By doing this, the detrimental consequences would be reduced and the beneficial outcomes would be increased. For the purpose of project management, it is important to identify, assess, and document the risks that may have an impact on the project. Establishing a department or controlling body to handle risk assessment and management is suitable. Risk minimization greatly depends on effective monitoring of the situation.

Sriyalatha and Fernando (2016) discovered a substantial association between risk management procedures and risk comprehension and management in their study on risk management practices in Sri Lankan banks. The study also demonstrated the usage of risk management practices in banks, including risk monitoring and control practices as well as methods for risk identification, assessment, and analysis.

A study on risk management for hospitals in China and the United Kingdom (UK)'s health supply chain was conducted by Wang (2018). The research used a deductive methodology, combining

quantitative and qualitative methodologies in triangulation. According to the study's findings, the health supply chain's performance is significantly impacted by risk factor identification, risk assessment, risk reduction, and risk monitoring.

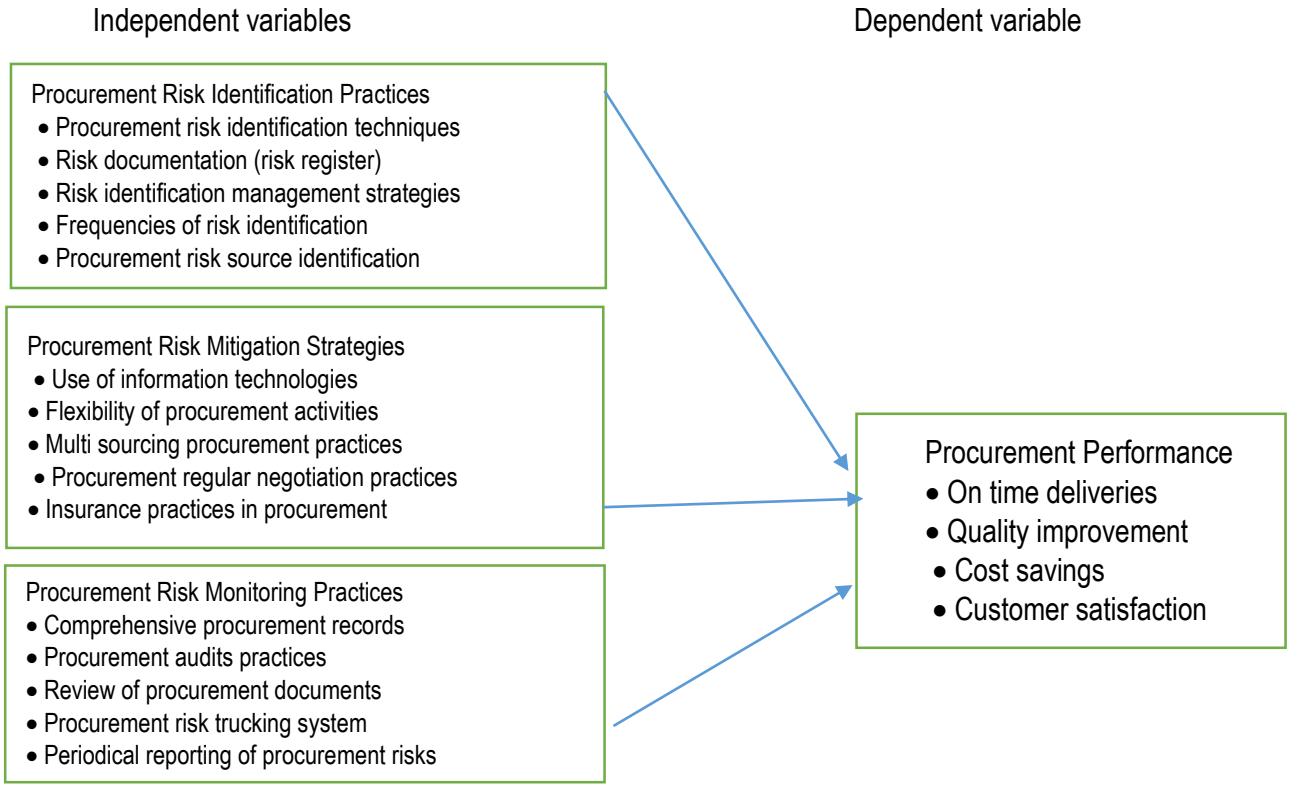
2.4 Knowledge Gap

A limited number of studies have concentrated on the particular best practices for risk management in procurement, such as risk identification, stakeholder involvement, risk management strategies, and continuous monitoring. These studies include those by Tulu, Ahimbisibwe (2016), Kikwasi et al. (2012), Laizer (2015), and Chileshe (2013). Although many have discussed this relationship, these studies have shown how risk management approaches affect procurement performance. There hasn't been much research done on how risk management techniques affect Tanzanian water supply utility companies' procurement performance. Additionally, no research on the effects of procurement risk mitigation techniques, continuous monitoring procedures, and identification processes have been carried out at RUWASA on the efficiency of procurement functions.

2.5 Conceptual framework

The success of risk management best practices implemented within the businesses is a prerequisite for achieving procurement performance amongst Water Supply Authority organizations. The conceptual framework of this study shows the relationship between the dependent variable, Tanzanian public sector procurement performance, and the independent variables, such as practices for identifying, monitoring, and mitigating procurement risk. Here is how the conceptual model is displayed:

Figure 2. 1 Conceptual Model



Source: Researcher (2023)

2.6 Operationalization of Variables

This section describes the relationship between procurement risk management practices, such as practices for identifying and mitigating procurement risks, practices for monitoring and identifying procurement risks, and practices for procurement performance. On the conceptual framework above, the conceptual relationship between the independent and dependent variables is explained.

2.6.1 The link between procurement risk identification practices and procurement performance

Risk identification is the process of determining, comprehending, approving, and providing information regarding the likelihood or existence of an unknown event to occur throughout the

procurement process. During this phase of risk management, the sources, characteristics, causes, and effects of procurement risk are determined. Risk identification is the initial stage of risk management, and early detection and preparation for the management of procurement risk are critical to the performance of the procurement function (Renault, Agumba, and Ansary, 2016). Any company that wants to manage procurement risk must identify the main risks associated with the entire process, especially when buying labor and consulting services (Juniour, Gyamfi and Akorli, 2017). Procurement risks must be identified in order to be managed, as doing so lowers uncertainty and increases the efficiency of procurement for the business (Ennouri, 2013).

A number of risks associated with the procurement of works, such as scope, quality, cost, and scheduling risks, need to be assessed before construction projects start, and the best course of action needs to be decided. Excessive approval procedures, bureaucratic government procedures, condensed project schedules, high performance standards, and insufficient program planning are only a few of the major hazards that construction projects face, according to Juniour, Gyamfi, and Akorli (2017).

Ennouri (2013) asserts that risk identification is crucial because it gives advance knowledge of the likelihood and consequences of uncertain events that could have an impact on procurement function performance. Risk identification makes it possible to create a standard tender document with clauses requiring the contractor or supplier to provide an advance payment guarantee, the bidder to submit a performance security prior to contract signing, and the bidder to submit a tender security or security declaration during the tendering process. To improve procurement performance, all of these elements were included in the contract and tender documents (Bilabaye, 2019).

According to Akrofi (2016), supply, political, demand, process, control, and environmental

hazards are among the common procurement risks associated with buying goods. In order to improve the effectiveness of procurement functions inside the company, the procurement management team must take these risks into account. Procurement performance suffers in terms of low-quality commodities, labor, and services, cost overruns, and dissatisfied consumers when these risks are not identified early on.

2.6.2 The link between risk mitigation strategies and procurement performance

Mitigation plans are the actions or decisions taken by the organization's management to lessen the effects of risks and optimize opportunities related to the identified hazards (Akrofi, 2016). There must be mitigation plans in place for each procurement risk that is identified in order to lower the possibility of events and lessen the effects of risk should it materialize.

To lessen the effect of risk on procurement performance, the management employs a variety of risk management techniques. According to Magutu and Nyaoga (2016), these practices include creating procurement manuals and policies, early procurement planning, supplier relationship management techniques, ethical training on a regular basis, e-procurement system adoption, multi-sourcing techniques, value engineering, regular supplier negotiations, practices of submitting advance payments, and performance security guarantees prior to contract execution.

The results of the study showed a substantial association between the performance of the organization and all four risk mitigation techniques (Renault et al., 2016). In order to accomplish successful risk management in the procurement cycle, organizations should employ the aforementioned strategies to improve the performance of procurement operations by reducing costs, guaranteeing timely delivery of products and works, enhancing quality, and increasing customer satisfaction.

Termination, transfer, and avoidance are examples of procurement risk mitigation strategies. Additional measures for mitigating risk encompass control, collaboration, adaptability, timely delivery, hedging tactics, requirement consolidation, delay, joint venture, outsourcing, and partnership. These strategies improve procurement performance in terms of prompt product delivery to customers at a reasonable cost and inventory cost reduction (Munyuko, 2015). Therefore, the firm should implement similar mitigation methods to enable successful procurement risk management. This will lead to value-for-money procurement and improve the performance of procurement functions.

Renault et al. (2016) found a favorable and substantial association between an organization's performance and its procurement risk reduction practices. As a result, the organization needs to make sure that the right strategies are in place for reducing procurement risks, such as compliance with the planning and execution of annual procurement.

2.6.3 The link between procurement risk monitoring practices and procurement performance

Risk monitoring is the continuous activity of overseeing all risk management operations and keeping note of any hazards encountered during the procedure. No matter how carefully thought out the plan, methods, or resources available are for risk management, without continuous control, the main activity in risk management is monitoring (Oehmen, Olechowski, Kenley, and Ben-daya, 2014). Slincu and Ciobanu (2013) assert that risk management requires both risk monitoring and control, and that control cannot be avoided in the absence of well-thought-out plans.

To improve procurement performance, risk management control measures include rotation of duties, segregation of duties, internal and external audits, reconciliation, supervision, and routine physical verification of goods. (Osipova, 2015) made the case that risk management

in building projects helps to accomplish project goals including time, money, scope, and quality. Furthermore, the study found that the main reason most construction projects fail is the absence of an interactive risk management approach, which is the fundamental problem in current procurement processes.

Risk monitoring comprises the continuous process of identifying, assessing, planning, and trucking new risk in each phase of the risk management process with the aim of reducing the potential of a risk and its impact on the procurement process (Ngunyi, 2014). In 2015, Losiewicz-Dniestrzanska acknowledged the necessity of keeping an eye out for instances in which banks are failing to comply with legal requirements. According to the survey, businesses should use risk monitoring techniques including applying contemporary information and communication technology to business process management.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the various research methodology including study area, research approach, research design, population, sampling procedure, and sample size, data collection techniques, data analysis, reliability and validity of the study, as well as ethic of the study.

3.2 Study Area

The investigation was conducted in the Dodoma Region, home of RUWASA's headquarters. The researcher is acquainted with the area surrounding RUWASA's headquarters. The water sector is sensitive, so managing procurement risks is unavoidable. As the CAG report (2022) demonstrates, the performance of the water sector is impacted by procurement risks; for example, contracts worth $7 billion were executed by public water entities like RUWASA without a performance guarantee; the Ministry of Water disregarded the Attorney General's advice to use performance security; and the pipes used for the water services project did not meet the design's specifications and calculations. The diameter of the acquired pipes was less than that of the intended pipes. The intended objectives and water flow are at danger because of this. The goods were delivered later than expected, however the liquidated damages clauses covering damages were unaffected.

3.2 Research design

A mixed research design was used for this investigation. Research design, according to Mukherjee (2017), is the strategy used to gather, measure, and interpret data. According to Demir and Pismek (2018), the use of triangulation in research design enhances both the quality

of study findings and the depth of understanding of the subject. Odoh and Chinedum (2014) state that the triangulation approach was selected due to its adaptability, efficacy, ability to cover geographically distributed samples, time and cost savings, and incorporation of ethical considerations. Due to its generalization during data collection, ability to capture research reality, internal and external validity, and efficiency, ability to cover geographically dispersed samples, and ethical advantages, qualitative and quantitative design is more suitable. See also Majid (2018) and Snyder (2019). At RUWASA, a cross-sectional survey was employed.

3.3 Research approach

Both qualitative and quantitative research approach were used in the study. The created research questions employed a qualitative approach, whereas the quantitative research approach focused on the empirical findings of earlier studies and ideas. Furthermore, by using this method, a study can be strengthened and expanded by obtaining a more comprehensive image as opposed to relying just on one approach.

3.5 Population, Sample size, and Sampling Procedure

3.5.1 Target Population

The study focuses on 70 RUWASA workers who primarily carry out procurement-related tasks and those who collaborate with procurement activities in their work.

3.5.2 Census

According to Krishnaswami (2003), the researcher may choose to study the entire population if the population to be studied is relatively small, such as 50 institutions, 200 employees, or 150 households. However, the size of the population is relative; whether it is large or small depends on the nature of the study, the purpose for which it is undertaken, the time and other resources

available for it. According to Kothari (2004), the universe or population is made up of all the objects that are being studied in any given field of study. A census inquiry is a comprehensive listing of every item in the population. It can be presumed that in such an inquiry when all the items are covered no element of chance is left and highest accuracy is obtained.

In light of the aforementioned, the researchers decided to examine all 70 RUWASA employees because the sample size is small and they are also subject to procurement risks in the course of their work. This information is based on the RUWASA employees' data base (2023).

3.5.3 Sampling Strategies

Purposive sampling, or non-probability sampling, was used in this investigation. For this investigation, a purposeful sampling technique is appropriate. In order to obtain relevant data, the researcher used the purposive sampling procedure, consulting with respondents in their office where the questionnaires were distributed and interviewing relevant RUWASA employees who participate in procurement activities. As a result, the researcher was able to gather informed, experienced respondents with firsthand expertise of procurement functions (Sharma, 2017).

According to Majid et al. (2017), participants in research should have as many traits in common as feasible. For this reason, the researcher chose respondents from RUWASA who are regularly exposed to a range of procurement risks. Purposive sampling was utilized in this study because it is appropriate for people who can offer the most reliable information. (2015) Morse.

3.7 Data Generation methods

Data for this study was gathered through the use of questionnaires, interviews, and reviews of related documents. Kothari (2004) asserts that choosing the right data collection strategy improves the caliber of study results. Document reviews were used to obtain secondary data,

while surveys and interviews were used to acquire primary data. The extent of the study, the availability of funding, and the amount of time available all play a role in the methodologies chosen.

3.7.1 Data Collection Techniques

3.7.1.1 Questionnaire

To collect primary and quantitative data, questionnaires that were constructed according to the research purpose were employed. Closed-ended statements with a Liker scale (degree of measurement) ranking 1 = strongly disagree were given to the responders. 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree to gather data to fulfill research goals. In order to cut costs, save time, and reduce errors in the study results, the researcher employed the questionnaire approach (Bird, 2009). A questionnaire was created specifically for this study and sent to the intended respondents—the RUWASA personnel.

3.7.1.2 Key Informant Interviews

In order to gather qualitative data for this study, the researcher personally interviewed senior staff members and other officials who were among the chosen respondents. The researcher was able to get thorough explanations and clarifications from respondents through in-person interviews. Additionally, through interactions with interviewees that were not covered by the closed-ended questions, it allowed researchers to get direct answers from human acts (Alshenqeeti, 2015). Furthermore, the study's use of interview guides improved the uniformity and caliber of data gathered from participants' experiences, knowledge, abilities, and opinions.

Directors of procurement, procurement officers, internal auditors, members of tender boards, and users' departments were among the participants in the interview process. They were

purposefully selected based on their qualifications, experience, desire to participate, and knowledge.

3.7.1.3 Documentary Review

The approach of documentary review was employed in order to gather secondary data. In order to better understand the topic of the study, the researcher looked through a large number of official documents, such as audit reports from PPRA and CAG, books, theses, published and unpublished dissertations on procurement risk management activities, and several articles from PPRA magazines on risk management strategies (Bowen, 2017).

3.8 Data analysis methods

The process of organizing and classifying raw data in order to obtain usable information from it is known as data analysis (Mugenda & Mugenda, 2008). Methods both quantitative and qualitative were used to analyze the data in this study.

While content analysis was used to examine qualitative data, descriptive statistics like frequency, percentage, mean, and factor analysis as well as inferential analysis like multiple regression analysis were used to analyze quantitative data. The next subsections provided descriptions of the quantitative and qualitative data analysis techniques.

3.8.2 Content Analysis

The researcher used content analysis in this study to analyze qualitative data since it allows one to look at any written text and identify patterns in the recorded conversation (Saunders, 2009). Researchers choose to utilize content analysis because it is a very flexible method of analyzing qualitative data, saves time, is dependable, makes patterns in the data easy to notice, and is also a cost-effective approach.

3.8.3 Descriptive Statistics

Descriptive analysis was employed in the study to illustrate the features of the variables in relation to the research problem. In this study, quantitative descriptions and summaries of quantitative data were obtained through the use of descriptive analysis. According to Kothari (2004), descriptive analysis aids in the production of an overall summary of quantitative data on the perceptions of sub variables linked to the stated objectives as well as the reduction of massive volumes of data into a form that is easily interpreted. The frequency distribution and percentage presented through tables were utilized to demonstrate the general response, while the mean score was used to indicate the average response, which can be interpreted as a common response.

3.8.4 Regression Analysis

The relationship between the independent variables (procurement risk identification techniques, procurement risk mitigation strategies, and procurement risk monitoring practices) and the dependent variable (procurement performance) was examined in this study using regression analysis. Regression analysis enables researchers to determine the important relationship between the independent and dependent variables in this study by displaying the relative degree of each independent variable's influence on a dependent variable (Deng, 2018). Additionally, regression analysis assisted the researcher in forecasting outcomes, determining the factors that contributed most to the study and the ways in which each component affected the dependent variable (Sarstedt and Mooi, 2016). The model of regression equations that is displayed below;

$$Y= \beta 0+ \beta 1X1 + \beta 2X2 + \beta 3X3 + \epsilon$$

Where

Y= Procurement Performance

X1= Procurement risk identification practice

X2= Procurement risk mitigation practices

X3= Procurement continuous risk monitoring practices

β0=Constant

β1= Regression coefficient of procurement risk identification practices

β2= Regression coefficient of procurement risk mitigation practices

β3= Regression coefficient of procurement continuous risk monitoring

ϵ =Error term

3.9 Validity and reliability

3.9.1 Validity

Validity, according to Clark and Watson (2019), is the ability of the research tool to measure what it is meant to test in order to raise the standard of the study's findings. As part of a pilot test to confirm the validity of the research method, questionnaires were distributed to ten respondents from the selected Water Authorities. Since 10 persons are required to participate in a pilot test in a small community, the number of respondents needed for the test was sufficient (Fink and Koch, 2010). The length of the questions, their ambiguity, and how well they addressed the study's goal were all examined throughout the pilot study.

3.9.2 Reliability

The degree to which a measure can produce consistent and reliable results during a measuring procedure is known as its reliability (Mata et al., 2018). Reliability is the consistency of the

outcomes when the research instrument is measured several times with similar respondents using similar instruments. This study employed the Cronbach's Alpha test to guarantee reliability (Pallant, 2006). The Cronbach's Alpha test was used in this study because it is more relevant and offers reliability of coefficient for all possible combinations of the set of constructs or concepts within the scale (Bolarinwa, 2016). Determining the internal consistency of research tools was another application for it. Reliability of the test is guaranteed when the multiple choice questions are entered into statistical software and the Cronbach Alpha coefficient is more than 0.7.

Table 3.2 Cronbach's Alpha

Cronbach's Alpha	Items
0.723	33

Source: Researcher (2023)

For every component of the questionnaire, the reliability test yielded Cronbach's alpha values that were higher than the recommended cutoff of 0.7. This demonstrates that the scales used in this study were reliable for identifying the constituents and accurately expressing the respondents' attitudes.

3.10 Ethical considerations

The researcher gets RUWASA approval before starting the data collection process. The investigator gave the participants the assurance that the study is an intellectual endeavor, that the participants' identities would be protected, and that the results would only be utilized for the intended use.

CHAPTER FOUR

PRESENTATION AND DISCUSSION OF FINDINGS

4.1 Introduction

The results of the study on how procurement risks management practices affect procurement performance are presented in this chapter, along with a discussion of the results. Descriptive statistics and multiple regression analysis for the practice of procurement risks management and procurement performance are presented in this chapter.

4.2 Response Rate

A complete response rate of 100% was obtained from the 70 questionnaires that the researcher provided, all of which were filled out completely and returned. This response rate allowed for the drawing of conclusions regarding how procurement risk management techniques affect procurement performance. For analysis and reporting, a response rate of 50% is sufficient; a rate of 60% is good; and a rate of 70% or higher is exceptional (Mugenda, 2008).

4.3 Descriptive statistics for Demographic Characteristics

Prioritizing the respondent's characteristics above the study objectives is necessary. In order to understand how respondents perceived and understood the use of procurement risk management strategies, a detailed analysis of respondent profiles was conducted in this section. Using frequency and percentage, descriptive analysis was used to describe the respondent's gender, age, level of education, and work experience. This study was performed using version 22 of the Statistical Package for Social Sciences (SPSS), and frequency distribution tables were used to present the results. The demographic data that was relevant to this inquiry is explained in the following paragraphs.

4.3.1 Gender

To obtain input regarding how procurement risk management techniques affect procurement performance, the researcher also tried to find out whether study participants were female. Table 4.1 provides a summary of the study's findings.

Table 4.1 Gender

Gender	Frequency	Percent
Male	43	61.4
Female	27	38.6
Total	70	100.0

Source: Researcher (2023)

Table 4.1's results indicate that whereas 27 (38.6%) of the respondents were female, 43 (61.4%) of the respondents were male. This implies that both men and women oversee adherence to the public procurement paradigm, which calls for ensuring supplier and employee equity, in Tanzanian and international public institutions. Therefore, efficiency is raised through cooperation and information sharing when men and women carry out procurement activities. This leads to efficient risk management in the procurement process and, eventually, improves procurement performance. These findings are in line with the research conducted by Oliver (2020), who observed that women were given the opportunity to participate as targets in a number of industries, which encouraged them to take part in national development. Although it may seem that men outnumber women, this is not always a bad thing because women now

make up half of the male population and have a range of contributions to offer to the development of the nation.

4.3.2 Age

Because age is typically utilized to provide the employment enrolment culture in the majority of industries, the researcher was interested in learning about the respondents' ages. The employee pyramid is often arranged with a large proportion of workers between the ages of 26 and 45. The results can be found in Table 4.2.

Table 4.2 Ages of Respondents

Ages	Frequency	Percent
26-35 years	29	41.4
36-45 years	33	47.1
Above 46	8	11.4
Total	70	100.0

Source: Researcher (2023)

The age of the respondents is one of the most important factors in data analysis because it often influences the decision-making process. As a result, the researcher was curious about the respondents' age ranges. The respondents' ages were requested to indicate their age groupings. The bulk of the respondents, as indicated by Table 4.2, were between the ages of 26 and 45. Respondents between the ages of 26 and 35 made up (29)41.4 percent of the sample; respondents between the ages of 36 and 45 made up (33)47.1 percent; and respondents older than 46 made up (8)11.4 percent. This suggests that the data were gathered

from an adult population capable of making wise decisions; hence, the data were gathered from relevant and focused respondents. Persons in the 30- to 50-year-old age range are viewed as significant because they have more experience than persons in other age groups, claims Aziz (2016). Individuals over 50 are perceived as being less driven and productive because they will soon be retiring.

4.3.3 Education Level

Finding out the respondents' educational background was essential due to their thoughts on how procurement risk management strategies affect procurement performance. It was deliberate to assess their responses based on level of education in order to provide reliable results. The study findings are shown in Table 4.3.

Table 4.3 Education Level

Education level	Frequency	Percent
Diploma level	14	20.0
Bachelor Degree	35	50.0
Master level	21	30.0
Total	70	100.0

Source: Researcher (2023)

According to Table 4.3, there were 14 respondents (20.0%), 35 with a bachelor's degree (50.0%), and 21 with a master's degree (30.0%). This suggests that most participants had a bachelor's or master's degree, demonstrating that they had acquired enough education to understand procurement risk management. This understanding and knowledge supports

regulatory compliance, improves the effectiveness and efficiency of procurement risk management procedures, and ultimately improves the performance of procurement services. The findings of this study corroborate those of Oliver (2020), who noted that most employees of Coca-Cola Kwanza Ltd. possess bachelor's degrees and adequate expertise in their respective disciplines. However, she continued, Coca-Cola Kwanza Limited provides its employees with a range of programs and essential training on their individual roles, making it easier for them to handle their obligations and acquire competence while carrying out their operations. Most employees possess a bachelor's degree and adequate experience in their respective industries. However, by providing a range of programs and essential training on their individual roles, Coca-Cola Kwanza Limited enables its employees to easily handle their obligations and acquire competence while carrying out their operations.

4.3.4 Working Experience

Through inspection and analysis, the respondents' work experience's validity and accuracy were evaluated. It was done on purpose to analyse their responses in light of their work experience within the company in order to determine the effects of procurement risk management strategies on the procurement performance. The study findings are shown in Table 4.4.

Table 4.4 Working Experience

Working experience	Frequency	Percent
1-3 years	11	15.7
3-6 years	14	20.0
7-10 years	21	30.0
Above 10 years	24	34.3
Total	70	100.0

Source: Researcher (2023)

According to Table 4.4's findings, 11 (15.7%) of the respondents had experience ranging from one to three years, 14 (20.0%) from three to six years, 21 (30.0%) from seven to ten years, and 24 (34.3%) from more than ten years. The data were gathered from relevant and targeted respondents because the majority of employees had more than a year of experience, according to the findings. As a result, these respondents gave insightful information that improved the analysis's confidence and clarity of the data. Chaponde (2018) states that the researcher is certain that staff members have enough experience managing procurement risks because most respondents have seven to ten experiences, which enhances procurement performance.

4.4 Descriptive statistics for Specific Objectives

Descriptive statistics were used in the study to analyse data related to its particular goals. Tables 4.5–4.7 present and summarize the study's findings, which were obtained using descriptive statistics. To ascertain the level of agreement on the propositions examined, the researcher used descriptive analysis. The researcher used the mean and standard deviation in this data analysis approach to calculate the degree of agreement and generate the findings. The five-point Likert scale is known as an interval scale. The mean has a significant role. According to Pimentel (2010), the scale runs from 1 to 1.8 for strongly disagree, 1.81 to 2.60 for disagree, 2.61 to 3.40 for not sure, 3.41 to 4.20 for agree, and 4.21 to 5 for strong agree.

4.4.1 The Effects of Procurement Risk Identification Practice on the Procurement Performance

This provides the description of the results on effect of procurement risk identification practice on the procurement performance facilitated by the complementing statements illustrated below;

Table 4.5 Effects of Procurement Risk Identification Practices on Procurement Performance

Statement	N	Mean	Std. Deviation
Our organization uses a risks register to track procurement-related issues.	70	4.39	.633
Our organization identifies procurement risks using formal methodologies.	70	4.23	.810
When procurement risks materialize, our organization logs them..	70	3.89	.807
Our organization adheres to the practice of determining the risk source.	70	3.85	1.050
Our organization has procedures in place for detecting and managing procurement risks.	70	3.67	1.086
Aggregate Level	**70**	**4.01**	**.877**
Valid N (listwise)	70		

Source: Researcher (2023)

A mean of 4.39 and a standard deviation of 0.633 indicate that the respondents agreed that our firm employs a risks register to document procurement concerns. The respondents also concurred, as evidenced by the mean of 4.23 and standard deviation of 0.810, that our firm possesses formal methods for identifying procurement risks. Also, as indicated by the mean of 3.89 and standard deviation of 0.807, the respondents concurred that our company documents procurement risks depending on their occurrence. With a mean of 3.85 and a standard deviation of 1.050, the respondents agreed that our organization's risk source determination practice influences customs clearance. Finally, as indicated by the mean of 3.67 and standard deviation of 1.086, respondents believed that our firm has procurement risk identification management

procedures. Because of the lower standard deviation of 0.877 and the overall mean of 4.01, the study generally demonstrated that early procurement risk identification practices contribute to effective and efficient procurement performance in Ruwasa.

Also most interviewed respondents showed that

> *….Procurement performance is greatly impacted by the identification of procurement risks since it allows firms to lower risks related to cost, time, and quality, which improves client services and boosts procurement performance…..* (Key informants, 2023).

Furthermore, interviewee said that

> *…. Although some respondents stated their company didn't have a specific document for that purpose, the risk register is a frequently utilized document to record or document procurement problems…..* (Key informants, 2023).

Another respondent from RUWASA said that

> *….By employing appropriate risk identification instruments, such as risk registers, expert opinions, surveys, and documentation assessments, organizations can reduce procurement risk. By consistently trucking and monitoring procurement risks, companies can reduce the risks related to expenses, quality, delays, and reputation by putting these tactics into practice….. (Key informants, 2023).*

The findings of the evaluation of theses, dissertations, and journal articles, among other published and unpublished materials, demonstrated that procedures for recognizing procurement risks had a favorable influence on procurement performances. This implies that in order to handle risks pro-actively, companies should ensure that they are recognized early on. Procurement hazards that are frequently encountered include delays, quality problems, and cost problems, according to the Public Procurement Regulatory Authority (PPRA) and Controller Auditor General (CAG) audit reports. These arise from the fact that some suppliers, contractors, and service providers are occasionally paid for their services even though they have not delivered the goods or completed the work. This is because the organization's management has not demonstrated a commitment to promptly identify procurement risks and take proactive measures to address them.

4.4.2 The Effects of Procurement Risk Mitigation on the Procurement Performance

This provides the description of the results on effect of procurement risk mitigation practice on the procurement performance facilitated by the complementing statements illustrated below;

Table 4.6 Effects of Procurement Risk Mitigation on the Procurement Performance

Statement	N	Mean	Std. Deviation
Utilizing a diverse sourcing approach, our business decreased the risks related to purchasing.	70	4.42	.763
Information technologies are used by our organization to lower procurement risks.	70	4.24	.756
Getting insurance lowers the risks associated with procurement for our company.	70	4.23	.729
Our business employs a delay approach to lower the risks related to purchasing.	70	4.12	.582
Frequent discussions with vendors, contractors, and service providers assist our company in reducing the risks related to purchasing.	70	4.12	.693
Aggregate Level	70	**4.23**	**0.705**
Valid N (listwise)	70		

Source: Researcher (2023)

According to the results, which had a mean of 4.42 and a standard deviation of 0.763, the respondents agreed that our firm reduced procurement risks by using a multiple sourcing approach. The respondents also concurred, as evidenced by the mean of 4.24 and standard deviation of 0.756, that our firm uses information technologies to reduce procurement risks. Furthermore, as indicated by the mean of 4.23 and standard deviation of 0.729, the respondents concurred that purchasing insurance reduces procurement risks in our company. Survey participants agreed that our firm reduces procurement risks by using a deferral approach, with

a mean score of 4.12 and a standard deviation of 0.582. Finally, as indicated by the mean of 4.12 and standard deviation of 0.693, respondents believed that our company reduced procurement risks by routinely negotiating with suppliers, contractors, and service providers. Because of the study's overall mean of 4.23 and lower standard deviation of 0.705, it can be concluded that effective risk mitigation practices for procurement result in effective and efficient procurement performance.

Qualitative data obtained from interview showed that,

> *….The use of risk reduction strategies is a crucial part of the procurement risk management process. Adopting the wrong strategy could prevent all procurement risks from being reduced, which would have a negative impact on the quality, timeliness, and cost of procurement.....* (Key informants, 2023).

They further stated that,

> *…Procurement risks are unpredictable, so companies must use both proactive and reactive strategies to reduce them. Some dangers are easily recognized and addressed in a proactive manner; others, depending on the circumstances, will stay unclear and necessitate reactive measures.....* (Key informants, 2023).

Another respondent from RUWASA stated that,

> *….Organizations can use risk mitigation strategies like relationship management, delay, and flexibility to mitigate procurement risks like corruption, quality, cost, and schedule hazards. But organizations frequently don't give enough funding to put these strategies into action.…* (Key informants, 2023).

In order to ensure that procurement performance within the organization is influenced by appropriate mitigation strategies, such as procurement planning, ensuring buyer-supplier relationship management, postponement, risk avoidance, multi-sourcing, outsourcing, having contingency practice in place, as well as the purchase of insurance to cover uncertain procurement events, procuring entities, policy makers, and relevant authorities must make use of their limited resources. The reviewed materials, which included journal articles, dissertations, theses, and publications and unpublished works, are the source of these conclusions.

4.4.3 The Effects of Procurement Risk Monitoring Practice on the Procurement Performance

This provides the description of the results on effect of procurement risk monitoring practice on the procurement performance facilitated by the complementing statements illustrated below;

Table 4.7 Effect of Procurement Risk Monitoring Practice on the Procurement Performance

Statements	N	Mean	Std. Deviation
Our company's procurement risks are reduced by procurement audits.	70	4.25	0.687
In our organization, procurement risk is decreased by a thorough review of the purchase documents.	70	4.20	0.778
In-depth procurement records reduce our company's procurement risks.	70	4.13	0.580
Within our company, there is a propensity to truck procurement risks.	70	4.01	0.456
There is a process in place at our organization for reporting issues with procurement.	70	3.95	0.386
Aggregate Mean	**70**	**4.11**	**0.577**
Valid N (listwise)	**70**		

Source: Researcher (2023)

The data, with a mean of 4.25 and a standard deviation of 0.687, show that respondents generally agreed that our firm's procurement audits reduce procurement risks. The average of 4.20 and standard deviation of 0.778 show that the respondents were in agreement that careful examination of the procurement documentation reduces the risk associated with purchases made by our company. Additionally, as evidenced by the standard deviation of 0.580 and mean of 4.13, the respondents agreed that our company's meticulous procurement records reduce

the risk associated with purchases. The 4.01 mean and 0.456 standard deviation suggest that our organization tends to truck procurement risks, as reported by the respondents. Finally, the data shows that respondents thought our company disclosed procurement risks, as indicated by the mean of 4.01 and standard deviation of 0.456. Thus, the study generally showed that good procurement risk monitoring techniques contribute to effective and efficient procurement performance, as evidenced by the aggregate mean of 4.11 and reduced standard deviation of 0.577.

Response from qualitative information obtained through interview revealed that,

> *….Monitoring and controlling procurement risks is essential to their management. One RUWASA responder emphasized that risk management techniques cannot be executed without efficient control systems, regardless of how well-planned a procurement risk management plan may be. This illustrated even more how useless planning is in the absence of control…..* (Key informants, 2023).

Furthermore, majority of interviewed respondents from RUWASA suggested that,

> *….Procurement risk monitoring and control greatly assists in the implementation of procurement objectives by lowering risks associated with the procurement process, such as corruption, cost, quality, and schedule hazards. Regular audits of procurement activities, the documentation of procurement risks (risk register), and a careful review of procurement documents by senior personnel were among the control mechanisms used to manage procurement risks.…* (Key informants, 2023).

This suggests that in order to improve procurement performance in terms of quality, time, and cost, an organization must have proactive monitoring methods that allow it to identify, prevent, and control procurement risks. conclusions drawn from the studied materials, including theses, dissertations, and journal papers, both published and unpublished Using their limited resources, procuring entities, policy makers, and relevant authorities must make sure that the right monitoring strategies—like planning procurements, guaranteeing buyer-supplier relationship management, utilizing risk registers, avoiding risks, outsourcing, multi-sourcing, having backup plans, and getting insurance to cover unforeseen procurement events—are in place. The organization's buying performance is significantly improved by these practices. The findings

also demonstrated the need for effective internal control systems, such as detective, corrective, and preventative ones, within the organization. Internal control procedures, such as keeping track of procurement records and documentation, supervising, monitoring, safeguarding assets, and conducting recurring internal audits, enhance the performance of procurement functions. These steps reduce the danger of purchasing.

4.5 Factor Analysis

The highest-scoring items from each category (procurement risk identification practice, procurement risk mitigation practice, and procurement risk monitoring practice) were merged into a single composite item for use in inferential statistics using factor analysis. Three separate factors were employed to gather information in order to better understand how procurement risk management practices affect procurement performance. is seen in Tables 4.5–4.7 (the survey is in Appendix 1). The Rotated Components matrix, KMO, and Bartlett's Test are displayed for the three independent variables that were used to evaluate the impact of procurement risk management practices on Tanzanian procurement performance. The components of Tables 4.8–4.9 match the number of questions in the questionnaire.

Table 4.8 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.843
Bartlett's Test of Sphericity	Approx. Chi-Square	2.348
	Df	210
	Sig.	.000

Source: Researcher (2023)

When the condition is 0.5 or higher, the sample adequacy is examined using the KMO; when the condition is 0.05 or less, the significance of the variables is assessed using the Bartlett's test. The results presented in Table 4.8 indicate that the Bartlett's Test of Sphericity is significant at 0.000 and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy is 0.843.

Principal component factor analysis (FA) was used to load the variables. Items from both the independent and dependent variables were fed into this analysis in order to identify the variables that were used in the next investigation. The least Eigen value of one (1) was utilized as a selection criterion to ascertain the quantity of components that required retention. Furthermore, only items with a factor score of 0.60 or above and low scores in other factors would be taken into consideration for interpretation. For this study, all of the factor analyses were conducted using this general concept.

Kothari (2011) states that a factor analysis is carried out when there is a systematic relationship between several observed changes and the researcher wishes to find out more about what is causing this circumstance. The total scores that were subsequently employed in the inferential analysis were created by extracting the total scores for each of the three variables: procurement risk identification practice, procurement risk mitigation practice, and procurement risk monitoring practice. The findings of the factor scores for the practices of identifying and mitigating procurement risks as well as monitoring them are shown in Table 4.9.

Table 4.9 Factor Scores

Statements	Procurement risk identification	Procurement risk mitigation	Procurement risk monitoring
V200. When procurement risks arise, our company records them.	0.698		
V201. Our company documents procurement concerns via a hazards register.	0.675		
V202. Our company uses formal methods for identifying procurement risks.	0.661		
V203. We have procurement risk detection and management procedures in place at our company.	0.654		
V204. Risk source determination is a practice that our organization follows.	0.624		
V300. Regular negotiations with suppliers, contractors, and service providers help our firm lower the risks associated with procurement.		0.761	
V301. Our company uses information technologies to reduce procurement risks.		0.712	
V302. By using a varied sourcing strategy, our company reduced the risks associated with procurement.		0.710	
V303. Our business employs a delay approach to lower the risks related to purchasing.		0.687	
V304. Purchasing insurance reduces our organization's exposure to procurement risks.		0.643	
V400. There is a tendency within our firm to truck procurement risks.			0.707
V401. Comprehensive procurement records lower procurement risks in our company.			0.661
V402. Procurement audits lower procurement risks in our company.			0.637
V403. Our company has a procedure in place for disclosing procurement concerns.			0.612
V404. Comprehensive examination of procurement documentation reduces procurement risk in our company.			0.605
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 7 iterations.			

Source: Researcher (2023)

Table 4.9 displays the results of this study goal as well as the ratings for each of the three sub-variables: procurement risk identification, procurement risk mitigation, and procurement risk monitoring. The study found that the highest loading indications for every variable indicated that more investigation was warranted. Multiple linear regressions were used to assess the

association for this variable since all variables' greatest loading indicators that were more than 0.6 were included in the inferential statistics (Kothari, 2011). These indicators were then converted.

4.5.1 Variable Transformation

Following component analysis, the variables needed to be grouped and appropriately translated. All measurements with a value of less than 0.6 that did not load into their presumptive constructions effectively have to be eliminated in order to follow the grouping technique. Using the grouping method in SPSS version 22, the scores from each case's score on the variable were summed to generate a construct representative score, which was utilized in inferential statistics to examine the association. Table 4.10 provides an illustration of the entire process.

Table 4.10 Variable Transformation

Variable name	Variable codes	Computations
Procurement risk identification	V200	V200+V201+V202+V203+V204
	V201	
	V202	
	V203	
	V204	
	V300	
Procurement risk mitigation	V301	V300+V301+V302+V303+V304
	V302	
	V303	
	V304	
Procurement risk monitoring	V400	V400+V401+V402+V403+V404
	V401	
	V402	
	V403	

Source: Researcher (2023)

4.6 Inferential Statistics

This procedure made it possible to draw conclusions that were not immediately supported by the descriptive data that were available. This study's main goal was to evaluate how Tanzanian procurement performance was affected by procurement risk management techniques. Tanzanian procurement performance is influenced by three independent variables, which were ranked from 1 to 5. These variables are procurement risk identification practice, procurement risk mitigation practice, and procurement risk monitoring practice.

For every one of the three independent variables, or predictors, there exist a multitude of attributes or covariates. Regression analysis was used to determine the statistical relationship between the predictors and the dependent variable. With the use of the inferential statistics from this research, several theories on the specific study objectives were investigated.

4.6.1 Multiple Regression Analysis

Kothari (2014) states that regression analysis was utilized to investigate the association between a single dependent variable and many predictor factors. As a result, the R-square was used to assess the model's goodness of fit, and the F-Test was used to assess its validity. Each independent variable is significantly influencing the dependent variable's prediction if its significance value (p-value) is less than 0.05; if it is greater than 0.05, the variable is not significantly influencing the dependent variable's prediction.

4.6.1.1 Multiple Regression Assumptions

Pallant (2013) states that there are three underlying assumptions of multiple regression analysis. Outliers, normality, and multicollinearity are a few of them. The three possibilities that the researcher investigated are as follows.

The study verified the existence of outliers, which is one of the requirements for multiple regressions, by examining the skewness and kurtosis values. According to Kline (2015), skewness and kurtosis values less than 3 and 10, respectively, indicated that there might not have been an issue with an outlier.

Table 4.11 Normality and Outliers

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Procurement Risk Identification	70	-.012	.218	-.206	.433
Procurement Risk Monitoring Practices	70	.383	.218	-.944	.433
Procurement Risk Mitigation Practices	70	-1.881	.218	3.215	.433
Valid N (listwise)	70				

Sources: Researcher (2023)

Given that all of the variables were reported to have a normal distribution in the findings, it was reasonable to assume that this assumption was true. -1.881 and positive kurtosis 3.215 were the values of the procurement risk mitigation techniques; -0.383 and negative kurtosis -0.944 were the values of the procurement risk monitoring activities; and -0.012 and negative kurtosis -0.206 were the values of the procurement risk identification practices.

Furthermore, as indicated by Pallant (2013), the multicollinearity test's objective is to confirm that the independent variables have only a weak correlation (r 0.90). Tolerance factors and VIF were employed in this study to test the multicollinearity problem. The VIF must be between 10 and 0.2 in order for the tolerance measure to be within the allowed range and not violate the multicollinearity assumption.

Table 4.12 Multicollinearity

	Collinearity Statistics	
	Tolerance	VIF
Procurement risk identification	.477	2.097
Procurement risk monitoring practices	.476	2.099
Procurement risk mitigation practices	.987	1.013
a. Dependent Variable: procurement performance		

Source: Researcher (2023)

Given that all variables had tolerance values greater than 0.2 and VIF values less than 10, indicating that none of the variables had a multicollinearity issue, it was acceptable to believe that this criteria was satisfied.

Table 4.13 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.602[a]	.362	.356	1.96645	.362	62.618	3	67	.000
a. Predictors: (Constant), procurement risk identification practice, procurement risk mitigation practice, and procurement risk monitoring practice									
b. Dependent Variable: Procurement performance									

Source: Researcher (2023)

The relationship between the variables under investigation is explained by the correlation coefficient, or R. Table 4.13 shows that R value of 0.602, or 60.2%, indicates that there may have been a relationship between the variables in the study. Furthermore, Table 4.13 depicts that R square value of 0.362, or 36.2%, shows that the three independent variables are responsible for 36.2% of the variation in the influence of procurement risk management methods on Tanzania's procurement performance. This illustrates how modifications to the identification, monitoring, and mitigation of procurement risks all affect Tanzania's procurement performance.

Table 4.14 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	726.410	3	242.137	62.618	.000[a]
	Residual	1279.948	67	3.867		
	Total	2006.358	70			
a. Predictors: (Constant), procurement risk identification practice, procurement risk mitigation practice, and procurement risk monitoring practice						
b. Dependent Variable: Procurement performance						

Source: Researcher (2023)

The results shown in Table 4.14 indicate that the model has a significance level of less than 5%. With dfs of 3 for the numerator and 67 for the denominator, the computed F value was 62.618. This makes the regression model statistically significant. Being less than 5% (0.05), the P-value of 0% (0.000) suggests that the model is a reasonable predictor of how procurement risk management techniques would affect procurement performance.

Table 4.15 Regression Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.395	.711		1.962	.051
	Procurement risk identification	.109	.043	.159	2.560	.011
	Procurement risk mitigation	.189	.039	.312	4.854	.000
	Procurement risk monitoring	.184	.054	.211	3.394	.001
a. Dependent Variable: Procurement performance						

Source: Researcher (2023)

The procurement performance was found to benefit from Table 4.15 that procurement risk detection practice (Beta value = 0.159, P = 0.011<0.05). This suggests that, when all other variables are held constant, a one-unit improvement in procurement risk identification practice results in a 15.9% unit gain in procurement performance efficiency. The results showed that, at a significance level of 5%, the variable was relevant for the procurement risk detection process. Thus, the findings support the alternative hypothesis that procurement risk identification practice has a positive impact on procurement performance in Tanzania by demonstrating a correlation between high levels of procurement performance and the application of procurement risk identification practice.

It was found in Table 4.15 that the procurement risk mitigation was positively impacted by the procurement performance (Beta value = 0.312, P = 0.000<0.05). This suggests that, assuming

all other factors stay the same, a one-unit improvement in procurement risk mitigation results in a 31.2% unit gain in procurement performance efficiency. The results indicate that the value of procurement risk mitigation was considerable at a 5% level with respect to the variable's importance. Thus, the findings support the alternative hypothesis that procurement risk mitigation influences Tanzania's effective procurement performance by showing that higher levels of procurement performance are impacted by greater procurement risk reduction.

Procurement performance is positively impacted by procurement risk monitoring, as demonstrated by Table 4.15 (Beta value= 0.211, P=0.001<0.05). This suggests that, when all other variables are held constant, a one-unit improvement in procurement risk monitoring leads to a 21.1% unit increase in procurement performance efficiency. The results indicate that, in terms of the variable's importance, the value of procurement risk monitoring was significant at less than 5%. Consequently, the results demonstrate that high levels of procurement risk monitoring lead to high levels of procurement performance, which is consistent with the hypothesis that high levels of procurement performance will raise procurement risk monitoring in Tanzania. Consequently, the alternative hypothesis was accepted and the null hypothesis was refuted.

4.7 Discussion of the Findings

The researcher evaluated the impact of risk identification practices on procurement performance in the first goal. Due to an aggregate mean of 4.01 and a smaller standard deviation of 0.877, the study's descriptive statistics analysis showed that early procurement risk identification practices led to effective and efficient procurement performance in Ruwasa. This result is in line with the findings of a study conducted by Stoyanova (2017), which concluded that all risks must be managed through specific procedures in both the initial and subsequent phases of water projects. These procedures must describe potential events, their consequences, and the

implementation of the most suitable activities. By doing this, the detrimental consequences would be reduced and the beneficial outcomes would be increased. For the purpose of project management, it is important to identify, assess, and document the risks that may have an impact on the project. The majority of firms' procurement management practices, according to a study by Timothy et al. (2015), complied with the risk identification process. In general, management teams were more concerned with risk identification or risk assessment to ensure that procurement performance was enhanced by reducing expected risk at an early stage.

Additionally, the study's multiple regression analysis showed that the practice of identifying procurement risks had a favorable impact on procurement performance. This suggests that, while all other variables are held constant, a one-unit improvement in procurement risk identification practice leads to a unit increase in procurement performance efficiency. This finding is consistent with a study by Aghajanian (2018), which found that an organization should use best practices like risk identification to ensure effective supply chain and procurement risk management. The study also claimed that a significant gap exists between the identification and pre-identification stages, which could aid practitioners in better identifying procurement risk. It is therefore claimed that using procurement risk detection significantly improves procurement performance. According to Laradi's (2017) study, a risk management process for material procurement should involve risk identification. This suggests that implementing a suitable risk management strategy improves material procurement performance.

The results align with theories such as principle agency theory and contingency theory, which maintain that procurement risk is an uncertain process and that risks must be identified as unexpected events and handled accordingly given the current situation (Ongola, 2017). Early identification of uncertainties (risks) that usually improve procurement performance in terms of quality, timeliness, quality enhancements, and end-user satisfaction requires participation from a range of procurement process stakeholders (Wittke, 2014).These results provide a clear

understanding of the significance of procurement risk identification operations, including risk identification methods, risk documentation of identified risks, and risk identification sources, for procurement functions.

The researcher evaluated the impact of procurement risk mitigation on procurement performance in the second goal. The study's descriptive statistics analysis showed that, with an aggregate mean of 4.23 and a reduced standard deviation of 0.705, effective risk mitigation practices in procurement result in effective and efficient procurement performance. This outcome is consistent with research by Ahimbisibwe (2016), which found that procurement performance is more strongly impacted by effective risk reduction. Additionally, the results demonstrate that compliance with procurement records, one of the most successful risk mitigation measures, is a significant predictor of records management effectiveness, which in turn improves procurement performance in businesses. In a similar vein, Pawar, Jain, and Gaikwad's (2015) study discovered that risk management policies should be set up at every stage of the project life cycle to improve efficient procurement performance. By allocating risks to various stakeholders for various contracts, effective contract management can be a helpful tool for risk minimization.

Furthermore, the study's multiple regression analysis showed that procurement performance positively impacted procurement risk mitigation. This suggests that, while all other factors stay the same, a unit increase in procurement risk mitigation leads to a unit increase in procurement performance efficiency. This outcome is consistent with Wang's (2018) study, which discovered that risk mitigation has a major impact on the efficiency of the health supply chain and procurement. Exercise management and monitoring of information and communication technologies (ICT), support of national procurement guidelines to e-procurement in construction companies, and possession of e-procurement skills are examples of mitigation strategies for the identified risk, according to Eliufoo et al. (2017), who conducted a study. Ahimbisibwe's (2016)

study also showed that procurement performance is more strongly impacted by effective risk reduction. Additionally, the results demonstrate that compliance with procurement records, one of the most successful risk mitigation measures, is a significant predictor of records management effectiveness, which in turn improves procurement performance in businesses.

The study looked at how risk monitoring affected procurement performance in the final goal. The study's descriptive statistics analysis revealed that, with an aggregate mean of 4.11 and a reduced standard deviation of 0.577, effective practices for monitoring procurement risks result in effective and efficient procurement performance. Exercise management and monitoring of information and communication technologies (ICT), support of national procurement guidelines to e-procurement in construction companies, and possession of e-procurement skills are examples of mitigation strategies for the identified risk, according to Eliufoo et al. (2017), who conducted a study. This result also agrees with a study by Timothy et al. (2015), which found that most firms followed risk identification, analysis, response, and monitoring procedures in their procurement management practices to guarantee high procurement performance by reducing high risks. According to Stoyanova (2017), it is appropriate to establish a department or controlling body that will be in charge of risk assessment and management, since risk monitoring is crucial to reducing it.

Additionally, the study's multiple regression analysis showed that procurement performance is positively impacted by procurement risk monitoring. This suggests that, while all other variables remain unchanged, a one-unit improvement in procurement risk monitoring leads to a unit increase in procurement performance efficiency. This is also in line with a study by Aghajanian (2018), which discovered that using best practices for supply chain and procurement risk management, like risk monitoring, significantly improves procurement performance. The study by Laradi (2017) discovered that risk mitigation and risk monitoring should be part of the risk management process for material procurement, suggesting that using the right risk

management approach improves material procurement performance. Wang (2018) found that risk factor identification, risk assessment, risk mitigation and risk monitoring is significant to the performance of health procurement and supply chain.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter provides an overview of the research, a conclusion on the results, and suggestions regarding how procurement risk management practices affect procurement performance.

5.2 Summary of the Study

This study's main objective was to assess how procurement risk management techniques affected procurement performance. The research explicitly examined the effects of procurement risk identification, mitigation, and monitoring strategies on procurement performance in order to achieve this overarching goal. Seventy RUWASA workers who work primarily in procurement and those who deal with procurement activities in their daily work comprised the study's population. A census was applied due to the small population. A mixed research design incorporating both qualitative and quantitative methods was used for the study. Both primary and secondary sources were used in this study, along with questionnaires, interviews, and document reviews. Multiple regressions, factor analysis, and descriptive statistics were applied. Due to an aggregate mean of 4.01 and a smaller standard deviation of 0.877, the study's first goal claims that early procurement risk identification practices contribute to effective and efficient procurement performance in Ruwasa. The practice of identifying procurement risks was found to positively impact procurement performance in the regression study (Beta value = 0.159, P = 0.011<0.05). This suggests that, when all other variables are held constant, a one-unit improvement in procurement risk identification practice results in a 15.9% unit gain in procurement performance efficiency. Due to an aggregate mean of 4.23 and a smaller standard deviation of 0.705, the study's second goal demonstrated how effective risk mitigation practices

in procurement contribute to effective and efficient procurement performance. Furthermore, a significant relationship between procurement performance and procurement risk reduction was found in the regression study (Beta value = 0.312, P = 0.000<0.05). This suggests that, assuming all other factors stay the same, a one-unit improvement in procurement risk mitigation results in a 31.2% unit gain in procurement performance efficiency. The study's final goal observed that, with an aggregate mean of 4.11 and a smaller standard deviation of 0.577, effective practices for monitoring procurement risk result in effective and efficient procurement performance. Additionally, the study's regression analysis showed that procurement performance is positively impacted by procurement risk monitoring (Beta value= 0.211, P=0.001<0.05). This suggests that, when all other variables are held constant, a one-unit improvement in procurement risk monitoring leads to a 21.1% unit increase in procurement performance efficiency.

5.3 Conclusion of the Study

After taking into account the findings from data analysis, a useful intuition of the effects of procurement risk management practice on the procurement performance. Following is an insightful conclusion based on the study's objectives:

5.3.1 The Effects of Procurement Risk Identification Practice on the Procurement Performance

The study's conclusion, which suggests that a unit increase in procurement risk identification practice results in a unit improvement in the efficiency of procurement performance, is that procurement risk identification practice was found to have a favorable effect on procurement performance. Ruwasa's procurement performance is therefore effective and efficient as a result of early procurement risk identification practices.

5.3.2 The Effects of Procurement Risk Mitigation on the Procurement Performance

The study concludes that the mitigation of procurement risk was positively impacted by procurement performance. This suggests that a unit increase in procurement performance efficiency is caused by a unit improvement in procurement risk mitigation. Excellent and efficient procurement performance in Ruwasa is thus a result of excellent procurement risk reduction practices.

5.3.3 The Effects of Procurement Risk Monitoring on the Procurement Performance

According to the study's findings, procurement performance benefits from procurement risk monitoring. This suggests that the efficiency of procurement performance increases by one unit for every unit rise in procurement risk monitoring. Consequently, efficient and successful procurement performance in Ruwasa is a direct result of excellent procurement risk management practices.

5.4 Recommendations

The study suggests that in order to improve the performance of procurement operations inside the business, the procurement management team should take these risks into account. When these risks are not recognized early on, procurement performance suffers in terms of project delivery and completion delays, low-quality items, labor, and services, cost overruns, and disgruntled customers.

In order to reduce procurement risk in water supply businesses, the report advises procuring entities such as RUWASA to implement best practices for managing procurement risks.

In order to lower procurement risk in water supply firms and enhance procurement performance, the government may employ advised procurement risk management techniques including risk identification, mitigation, and monitoring.

Since procurement activities operate in a dynamic environment of uncertainty and reduce exposure to risks, the study suggests that policy makers should prioritize investment (research and development) in the field of procurement risk management. This is because procurement is known to account for approximately 80% of the national budget.

5.5 Suggestion for Future Studies

The evaluation of the impact of the procurement risk management approach on the procurement performance at Ruwasa in Dodoma was the main objective of this study. In order to ascertain whether application of procurement risk management procedures under the study yields the same results on water supply firms, comparable studies might be carried out in other parts of the nation. Since they have the potential to deepen understanding of these practices in the context of procurement management, add to the body of knowledge, and develop a framework for procurement risk management practices in various contexts, the suggested areas for additional research are of great interest.

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APPENDICES

Appendix i: Questionnaires

The information given will be treated confidential and used solely for the purpose ofthis study.

Your completion of this study is highly appreciated.

This study will be conducted by

Nelson Basabose Paul

Whenever there is any inquiry (s) with regard to this survey please don'tthe contact researcher through: Mobile 0772909185, Email:

paulnelson106@gmail.com

Thank you for your positive response.

A Note to Respondent

Dear respondent, thank you very much for accepting to respond this questionnaire. Kindly be informed that the core focus of this study is to determine the effect of risk management practices on procurement performance at RUWASA. I am hereby requesting relevant information in order to achieve the study objectives through this questionnaire.

SECTION A: DEMOGRAPHICS AND BACKGROUND INFORMATION (100)

1. Kindly provide the general information about yourself by ticking in the correct boxas presented in the below table:-

S/N	Question	Response
i	What is your Gender	Male ☐ Female ☐
ii	Which among the following describe well about your age?	18-25 ☐ 26-35 ☐ 36-45 ☐ 46+ ☐
iii	Which of the following describe your education Level?	Certificate ☐ Diploma ☐ Degree ☐ Master Degree ☐ Dr.(PhD) ☐
iv	From the given below which one describe your work experience.	1- 3 ☐ 3-6 ☐ 7-10 ☐ Above 10 ☐

SECTION B: QUESTIONNAIRES ON SPECIFIC OBJECTIVES

Questions on measures of particular study objectives (independent variables) including procurement risk identification, mitigation, and monitoring procedures, as well as procurement performance (dependent variable), are included in this section.

PART I: Procurement Risk Identification Practices

2. Based on your understanding of and experience with procurement risk identification procedures in your company, indicate your level of agreement or disagreement with each item in the table below by checking the number that best represents your position on how procurement risk identification procedures affect procurement performance at your

company. The likert scale is given as 1.Strong disagree 2.Disagree 3.Neutral 4. Agree 5.Strongly agree.

S/N	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
i	Our organization has formal procurement risk identification techniques	1	2	3	4	5
ii	Our organization uses risks register to document procurement risks	1	2	3	4	5
iii	Our organization has procurement risk identification management strategies	1	2	3	4	5
iv	Our organization document procurement risks based on its occurrence.	1	2	3	4	5
v	Our organization has a practice of risk source determination	1	2	3	4	5

PART II: Procurement Risk Mitigation Practices

3. Based on your experience with procurement risk mitigation strategies in your company, indicate your level of agreement or disagreement with each item in the table below by checking the number that best represents your view of how risk mitigation practices affect procurement performance at your company. The likert scale is given as 1.Strong disagree 2.Disagree 3.Neutral 4. Agree 5.Strongly agree.

S/N	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
i	Our organization mitigate procurement risks through the use of information technologies	1	2	3	4	5
ii	Our organization mitigate procurement risks through postponement strategy	1	2	3	4	5
iii	Our organization mitigated procurement risks through multiple sourcing strategy	1	2	3	4	5
iv	Our organization reduce procurement risks through regular negotiation with suppliers, contractors and service providers	1	2	3	4	5
v	Purchase of insurance mitigate procurement risks in our organization	1	2	3	4	5

PART III: Procurement Risk Monitoring Practices

4. For each item in the table below, indicate your level of agreement or disagreement by selecting the number that best represents your perspective on the impact of risk monitoring practices on procurement performance. This should be done after considering your experience with procurement risk monitoring practices in your organization. The likert scale is given as 1.Strong disagree 2.Disagree 3.Neutral 4. Agree 5.Strongly agree.

S/N	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
i	In our organization, comprehensive procurement records reduce procurement risks	1	2	3	4	5
ii	In our organization, procurement audits reduce procurement risks	1	2	3	4	5
iii	In our organization, comprehensive review of procurement documents minimize procurement risk	1	2	3	4	5
iv	Our organization has a tendency of trucking procurement risks	1	2	3	4	5
v	Our organization has a practices of reporting procurement risks	1	2	3	4	5

PART IV: Procurement performance

5. By taking into consideration based on your experience on procurement performance in your organization, then for each item indicated in the table below, show the level of agreement and disagreement by putting a tick on the number that represent your opinion about effect of risk management practices on procurement performance. The likert scale is given as 1.Strong disagree 2.Disagree 3.Neutral 4. Agree 5.Strongly agree.

S/N	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
i	In our organization, procurement risks itentification enhance procurement performance	1	2	3	4	5
ii	In our organization, procurement risks monitoring enhance procurement performance	1	2	3	4	5
iii	In our organization, procurement risk mitigation strategies practices enhance procurement performance	1	2	3	4	5
iv	Our organization has a tendency of assessing the procurement performance	1	2	3	4	5
v	Our organization has a practices of reviewing the procurement risks so as o enhance procurement performance	1	2	3	4	5

Appendix ii: Interview Guide

1. What are the common techniques used to identify procurement risks in yourorganization
2. In your opinion, how procurement risk identification practices influenceprocurement Performance at your organization.
3. What is a document used to document identified procurement risks in yourorganization and how it is used to reduce procurement risks at your organization
4. Based on your knowledge and experience, explain how procurement risk mitigation strategies can influence procurement performance in your organization.
5. What is the procurement risk mitigation strategies used at your organization?
6. Do you think continuous procurement risk monitoring improve procurement performance?
7. With your opinion, what are the ways used to monitor procurement risks in your organizations