

MAKERERE UNIVERSITY
MAKERERE UNIVERSITY BUSINESS SCHOOL

**E- PROCUREMENT, RISK MANAGEMENT AND PROCUREMENT
PERFORMANCE OF FOOD AND BEVERAGE MANUFACTURING FIRMS IN
KAMPALA**

BY

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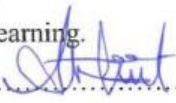
**A DISSERTATION SUBMITTED TO MAKERERE UNIVERSITY BUSINESS
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THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION OF
MAKERERE UNIVERSITY**

PLAN A

NOVEMBER, 2023

DECLARATION

I Agaba Martin, declare to the best of my knowledge that this dissertation is my original work and has never been published and/or submitted for any award in any other University/Institution of Higher Learning.

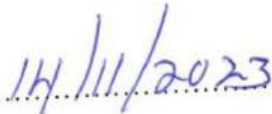
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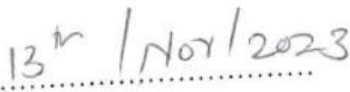
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APPROVAL

This dissertation has been developed under our supervision, and it is hereby approved for submission for university assessment and/or examination.

Signed.......... Date..........
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DEDICATION

This dissertation is dedicated to my wife Agaba Olivia & my daughter Agaba Graice and I truly thank them for believing in me and trusting me this long and for standing with me throughout this journey. Their smiles and encouragement have kept me going each and every day and I will forever be grateful.

ACKNOWLEDGMENT

Special thanks go to my mentor and supervisor Dr Bagenda who has taught me from my undergraduate to my masters. He believed in me and encouraged me to push on. I will forever be grateful. To my second supervisor Mrs Nantongo, am very grateful.

To my daughter and wife, thanks a lot for the continuous encouragement. Your place is special.

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ABSTRACT

This study was aimed at examining the relationship between e-procurement and risk management practices and procurement performance of food and beverage manufacturing firms in the Kampala Metropolitan Area. The study was initiated because of the continued poor procurement performance of food and beverage manufacturing firms despite the numerous efforts to improve their performance. The study objectives were: to assess the relationship between e-procurement and procurement performance of food and beverage firms in the Kampala Metropolitan Area, to analyze the relationship between risk management and procurement performance of food and beverage firms in the Kampala Metropolitan Area, to determine the relationship between e-procurement and risk management of food and beverage firms in the Kampala Metropolitan Area, and to examine the mediation effect of risk management in the relationship between e-procurement and procurement performance of food and beverage firms in the Kampala Metropolitan Area.

The study adopted a quantitative and cross-sectional research design. The study population included 229 beverage manufacturing firms from which 172 firms were randomly selected. Primary data was obtained using a structured questionnaire. Results show that there is a positive and significant relationship between; e-procurement and procurement performance ($r = .739^*$, $p < .01$), risk management and procurement performance ($r = .820^*$, $p < .01$), e-procurement and risk management ($r = .797^*$, $p < .01$). The study further reveals that risk management ($\beta = 0.631$, $p < .01$) and e-procurement ($\beta = 0.238$, $p < .01$) are significant predictors of procurement performance in food and beverage manufacturing firms. More to that, 68.9 per cent of the variance in procurement performance of the firms in question can be explained by e-procurement and risk management practices. It was recommended that food and beverage firms in the Kampala Metropolitan Area should integrate e-procurement and supply chain management, strengthen supplier collaboration via e-procurement platforms, implement tailored risk management strategies to address unique industry challenges and incorporate risk management as a core component of e-procurement strategies for improved performance, while concurrently investing in training and capacity building to ensure effective use of e-procurement tools and adaptability to technological changes.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter provides the background to the study, a statement of the problem, the purpose of the study, research objectives, research questions, the scope of the study, the significance of the study and the conceptual framework.

1.2 Background to the study

Sound procurement performance is vital to all organizations because it boosts the competitiveness of firms (Hamza, Gerbi, & Ali, 2017). Though procurement performance is key in both public and private entities, it is more pronounced in the private sector. This is because of the competitiveness associated with the private sector. As such, procurement performance has become a foundation for private firms' success. Business organizations that do not continuously improve their procurement performance find themselves unable to compete because of poor quality products, delayed deliveries, and other financial and technical risks (Bag, Wood, Mangla, & Luthra, 2020). Besides, procurement accounts for close to 50% of the company's expenditure in most of the firms. Procurement performance entails ensuring the quality, effectiveness and efficiency of the procurement function, and it is an integral part of organizational performance (Njeru, 2015). Globally, procurement has been used as one of the fundamental operations of most organisations for many years (Hong and Kwon, 2012). Organisations have used procurement to save costs and support other functions of the organisation. According to Fan and Stevenson (2018) organisations which have exhibited a sound procurement performance globally have increased productivity and positively improved their overall performance.

Several factors have been advanced that affect procurement performance in manufacturing firms. For instance, factors like changes in technology and outbreaks of pandemics like COVID-19 have impacted the procurement performance of most organizations (Bags et al., 2021). In Africa, for example, Kabegho (2012) indicated that both micro and macro factors have hindered procurement performance. For instance, (Ali, 2016) indicated staff competency, procurement procedures and resource allocations affect procurement performance. Other factors highlighted include procurement planning, departmental coordination, internal controls, and ethics.

In East Africa procurement performance has seen an improvement in the last years (Mukungu 2019). Abubakar (2020) indicated that this improvement has been due to factors like stiff competition among companies, employment of professionals, and the set procurement laws or procedures like the public procurement and disposal Act (PPDA) in the case of Uganda. However, similarly to the case in the rest of Africa, procurement performance remains poor in small and medium firms (Acheng, 2018). On the other hand, Kitui (2018) indicated that organisations which deal with government or international organisations have adopted better procurement practices which have improved their procurement performance.

Consequently, however, it has been established that procurement risk management and e-procurement are vital in improving procurement performance (Nyamah, Feng, Nyamah, Opoku, & Ewusi, 2022). Risk management helps companies ensure the smooth and successful running of purchasing and supply operations. It involves risk identification, assessment, mitigation and monitoring. Sound procurement performance among firms, therefore, leans so much on e-procurement and risk management. Jonathan et al (2019) state that different e-procurement is associated with different risks which could impend the whole procurement activities in an organisation. Igarashi (2013) argues that these risks need to be well managed if

procuring organisations are to avoid any disruptions resulting from these risks. Once risks in e-procurement aren't well identified, measured and mitigated, they are capable of reducing the quality of procurement performance (Hong et al., 2012). Most procuring organisations mind the process that they go through to acquire the goods, services or works and forget about the practices that make the procurement process (Florio & Leoni 2017). In the available literature, there is a dearth of research relating e-procurement and risk management to procurement performance, especially in developing countries in the private sector.

In Uganda, food and beverage manufacturing firms were some of the most badly affected businesses during the COVID-19 pandemic in terms of procurement performance because many of them import raw materials (Uganda Business Impact Survey, 2020). Procurement activities of food and beverage manufacturing firms were severely disrupted by rising costs and supply chain lockdowns. As a mitigating mechanism, the government tried to cushion firms by encouraging them to use local raw materials, but this did not help. Kwezi (2019) indicated the manufacturing firms continued to suffer from quality issues and low efficiency and effectiveness with material costs rising as high as 30%. It is upon this background that this study aims to investigate the relationship between e-procurement, risk management and procurement performance of food and manufacturing firms in Uganda.

1.3 Statement of the problem

Food and beverage firms in Uganda are expected to exhibit good procurement performance if they are to save on costs and remain competitive in the industry. However, food and beverage firms' procurement performance has stagnated especially during the COVID-19 pandemic. This has significantly stalled their growth and efficiency (Uganda Business Impact Survey, 2020). In general, manufacturing firms in Uganda registered decreases in procurement quality, efficiency, and effectiveness. Specifically, the report shows that food and beverage

manufacturing firms registered large increases in cost of inputs by more than 30% coupled with procurement delays. Although food and beverage firms have embarked on prioritizing supplier relationship management, utilization of global sourcing, developing strong risk management policies, and embracing technology, the problem still has persisted (Namara,2021). If this problem remains unchecked, it may impede their growth and expansion and thus limit their economic significance in Uganda's economy. A good procurement performance is the potential for greater agility, enhanced efficiency, and improved quality. Beyond that, procurement plays a pivotal role in the overall savings potential of a business (Rolls, 2020). Although existent literature suggests that poor procurement performance could result from inadequate use of e-procurement and poor risk management practices (Nyamah et al., 2022; Watermeyer, 2022). However, little is known about the contribution of e-procurement and risk management in food and beverage manufacturing firms in Uganda, hence the need for a special investigation.

1.4 Purpose of the study

This study was aimed at examining the relationship between e-procurement and risk management practices and procurement performance of food and beverage manufacturing firms in the Kampala Metropolitan Area.

1.5 Objectives of the study

- i. To assess the relationship between e-procurement and procurement performance of food and beverage manufacturing firms in the Kampala Metropolitan Area.
- ii. To analyze the relationship between risk management and procurement performance of food and beverage manufacturing firms in the Kampala Metropolitan Area
- iii. To determine the relationship between e-procurement and risk management of food and beverage manufacturing firms in the Kampala Metropolitan Area.

- iv. To examine the mediation effect of risk management in the relationship between e-procurement and procurement performance of food and beverage manufacturing firms in the Kampala Metropolitan Area.

1.6 Research Questions

- I. What is the relationship between e-procurement and the procurement performance of food and beverage manufacturing firms in the Kampala Metropolitan Area?
- II. What is the relationship between risk management and procurement performance of food and beverage manufacturing firms in the Kampala Metropolitan Area?
- III. What is the relationship between e-procurement and risk management of food and beverage manufacturing firms in the Kampala Metropolitan Area?
- IV. What is the mediation effect of risk management in the relationship between e-procurement and procurement performance of food and beverage manufacturing firms in the Kampala Metropolitan Area?

1.7 Research Hypotheses

H1: There is a positive and significant relationship between risk management and procurement performance in food and beverage manufacturing firms in Uganda.

H2: E-procurement positively predicts procurement performance in food and beverage manufacturing firms.

H3: E-Procurement positively influences risk management in food and beverage manufacturing firms in Uganda.

H4: risk management positively mediates the relationship between e-procurement and procurement performance in food and beverage manufacturing firms.

1.7 Scope of the study

The scope of the study explains the boundary of the research in terms of depth of investigation on content, time and geography as explained below.

1.7.1 Subject scope

This study sought to examine the relationship between e-procurement, risk management and procurement performance of food and beverage firms in Kampala.

1.7.2 Time scope

The study was limited to a single period (2023) in the lifetime of food and beverage firms in Kampala. This scope was dictated by the cross-sectional nature of the research design of the study.

1.7.3 Geographical scope

The study was limited to the Kampala Metropolitan Area which comprises of Wakiso, Mukono and Kampala districts. Kampala Metropolitan Area was selected because it is where most food and beverage firms are located according to the Uganda Bureau of statistics (UBOS) census reports on Business establishments in 2020/2021 and the Private sector foundation 2020/2021 annual report and financial statement.

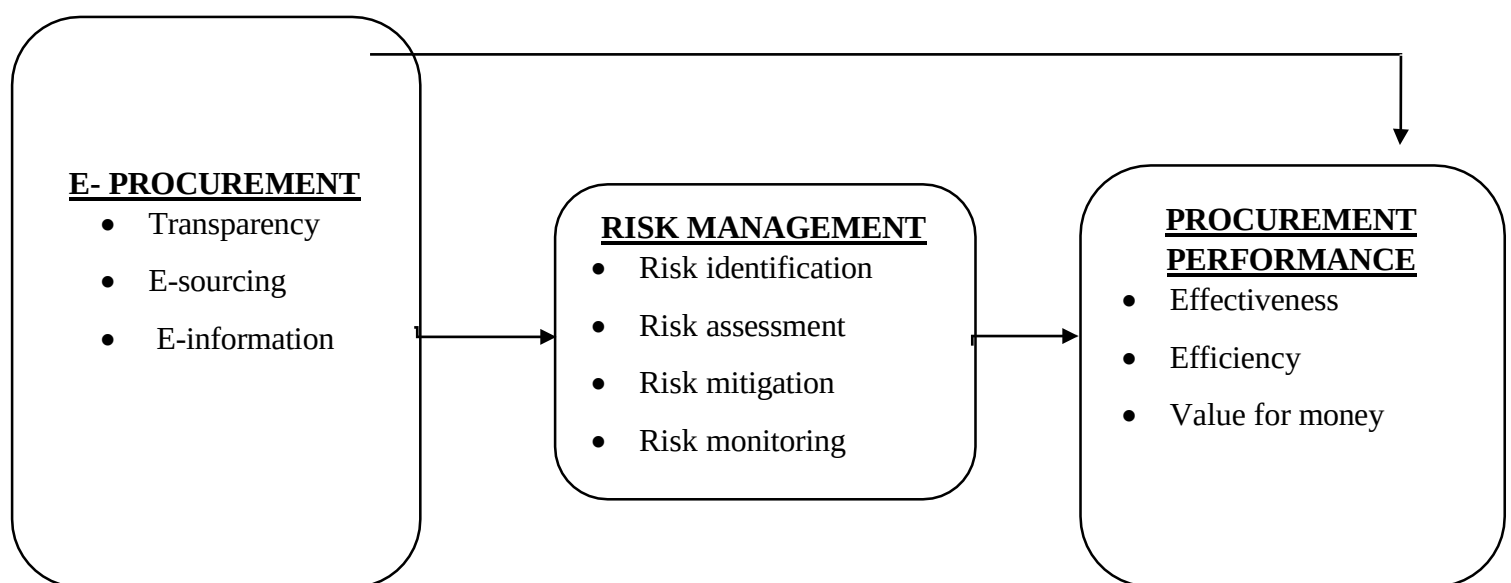
1.8 significance of the study

This study was important to procurement managers in formulating procurement policies. The administrations of firms will be able to understand the importance of e-procurement in improving procurement performance.

The findings of this research may also contribute to empirical evidence for Uganda by providing additional evidence to support the empirical debate. Researchers will use information in this study as part of the literature review while carrying out subsequent research.

The study may also be important to the researcher to complete his MBA Programme at Makerere University Business School.

1.9 Conceptual Framework



Adapted from Immanuel (2022), Tangarey et al (2020) and Carpinet et al (2006)

Description of the conceptual framework

Bierman (2010) indicated that a conceptual framework is an analytical tool which has several variations and contexts. It is used to make conceptual distinctions and organize ideas. The conceptual framework above depicts that e-procurement and risk management are the two independent variables that may influence procurement performance independently. The model also depicts that risk management plays a mediating role in the relationship between e-procurement and risk management.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter includes the theory and a review of the literature on E-procurement, risk management and Procurement Performance of food and beverage manufacturing firms in Uganda and the relationship between the variables.

2.1 Resource-based theory

The theory was originally proposed by Birger Wernerfelt (1984) and later developed and refined by Barney (1991). There are two underlying assumptions of this theory related to the explanation of how firm-based resources generate sustained competitive advantage and why some organisations may continually outperform others by gaining higher competitiveness (Helfat & Peteraf, 2003). First, the bundles of resources owned by firms are different from each other (Helfat & Peteraf, 2003). One of the cornerstones of RBT is the heterogeneity of resources and capabilities in a population of firms, which differentiates the competitive advantage of each firm. The heterogeneity of resources assumes that a firm possesses unique resources in a specific situation and can potentially be more skilled to perform particular activities and create a competitive advantage. Second, the complexities of trading resources across firms may create persistence in differences in resources.

Helks (2018) argued that the procurement performance of the firm depends on the different resources that a firm has. These resources can range from financial to non-financial like the knowledge and experience of the procurement department in the procurement matters. A well-knowledgeable procurement team has perfect knowledge of procurement dynamics. As the procurement team exercises knowledgeable decisions making, the procurement process is

enhanced hence a better procurement performance. On the other hand, organisations with limited knowledge of procurement matters will not perform well. They can at times make poor decisions in procurement which would lead to losses. James et al (2021) indicated that organisations manage risks according to the resources that they possess. The competence of human resources and the ability to detect such risks before they occur and how they are managed depends on the organization's resources.

Ahmed (2020) argued that online purchasing is expensive especially for small organisations since it requires both financial and non-financial resources like skills and knowledge to operationalize it. This means that for big organisations which have both financial and non-financial resources can adopt e-procurement which now gives them a competitive advantage over the other firms in the same industry.

In resource-based theory, resources refer to assets, business processes, capabilities, the firm's attributes, knowledge, and information among others. controlled by a company to comprehend and implement strategies aiming to enhance efficiency and effectiveness (Barney, 1991). The source of firm resources can vary, coming from both within and outside the organisation. Internal resources are, for example, R&D capabilities, logistics, brand management, and low-cost processes (Kozlenkova, Samaha & Palmatier, 2014); while external resources are for instance: the role of suppliers (Lewis et al., 2010), customer demand, technology change (Li & Calantone, 1998).

2.2 Procurement performance

Procurement performance is a measure of identifying the extent to which the procurement function can reach the objectives and goals with minimum costs (Kakwezi & Nyeko, 2019). There are several components of procurement performance including Quality, effectiveness

and efficiency among others (Barsemoi, Mwangagi, & Asienyo, 2014). Procurement effectiveness is the extent to which the previously stated goals and objectives are being met (Nasra, 2014). It refers to the relationship between the actual and planned performance of any human activity (Zania, 2019). Additionally, Zania (2019) explains that procurement efficiency is the relationship between planned and actual resources required to realize the established goals and objectives and their related activities, referring to the planned and actual costs. Procurement quality is the totality of features and characteristics of a product that bears on the ability to satisfy stated needs (Belokrylova, Belokrylov, Tsygankov, Syropyatov, & Streltsova, 2020).

2.3 E-Procurement

Marrie (2020) indicated that E-Procurement has the potential to promote operating efficiency in procurement performance and provide significant cost savings. One of the key logical advantages of electronic transaction management is that it frees procurement staff for procurement evaluation and contract management roles (Hocks et al, 2011). Furthermore, management information can be extracted from the e-Procurement system using standard reporting software. The electronic system allows users to find out the status of transactions in real-time (tendering, delivery, invoice payment, and others) and increases efficiency. Processes are optimized and productivity increases (Rosette, 2019). The transparent management information provided by e-Procurement also permits the monitoring of compliance with service level agreements and the measurement of many other elements of supplier performance (Boudijilda and Pannetto, 2013). The implementation of e-Procurement initiatives should be seen as an effort to improve the procurement goals, which normally include quality; timeliness; cost; minimizing business, financial and technical risks; maximizing competition; and maintaining integrity (Thai, 2001). In a similar vein, cost, quality, program management progress measures (on-time, on-budget, and issue management), process performance factors,

and Return on Investment as the most relevant measurements. There remains, however, the challenge of controlling the range of variables required to reap the benefits of e-Procurement implementation. It should be remembered that because an e-Procurement initiative is expensive, demanding upon staff, and time-consuming, it may take several years for public sector agencies to fully reap the strategic and operational benefits of e-Procurement (Hardy and Williams, 2011).

2.4 Risk Management

Procurement risk management is the measures put in place by organizations to identify potential events that may affect adversely the acquisition process and set up strategic plans geared to avoid or minimize risks in the procurement of goods, services and works (Hong, Lee, & Zhang, 2018). Just like other institutions or organizations in the market, manufacturing firms in Uganda are not immune to perilous events and therefore, risk management should be factored in all the time. It is a common practice in all firms to introduce performance metrics in the procurement process. However, the impending procurement risks in the market can reduce such parameters to an exercise in futility if proper modalities are not adhered to deter such undesirable events (Christopher, 2018). Tomlin (2006) asserts that risk management can leverage a company to establish a long-term competitive advantage by deploying resources properly, ascertaining the right product quality, lead time minimization, stock optimization and supplier development. The indicators of risk management include risk identification, risk assessment, and risk monitoring.

2.5 Relationship between variables

2.5.1 Relationship between e-procurement and procurement performance

In general, procurement performance is focused on compliance with the requirements of internal and external audits rather than in the context of the overall effectiveness of procurement. Performance monitoring is limited since objectives, targets and metrics are generally not established in most cases. This leads to a lack of focus on improving the performance of procurement activities (Qualls and Shaw, 2010). Adopting an efficient public e-procurement system improves the performance of the procuring entity and at the national level: assists policymakers in understanding how various policy goals interact and how policy impacts the overall performance of the procurement system; enables governments and parliaments to improve the quality of decision-making and to take constructive and long-term actions that will most effectively develop e-procurement systems (e.g. in terms of procurement policy and regulatory reform, institutional development and capacity strengthening); create stronger incentives on governments to improve their public procurement systems, help them to set priorities for reform actions in the area of procurement and to monitor progress against the objectives set; and provide valuable information for the assessment of the expenditures (Hardy and Williams, 2011). The economic justification for e-Procurement is based primarily on the following three factors: Reducing off-contract spending by using technology to increase user awareness of existing contract facilities and by making it easier to order against them. Leveraging buying power by using technology to support the identification of opportunities for aggregation and by facilitating the aggregation of user requirements within and across organizations. Titia (2021) carried out a study on the influence of e-procurement and procurement performance in public entities. The finding indicated that there was a positive and significant relation between the variables. Polisha (2021) argued that e-procurement is critical

in enhancing procurement performance. And reducing transaction costs by using technology to automate processes which are currently paper-based, and to streamline and standardize processes and documentation. The financial benefits which can be achieved through the implementation of the strategic recommendations are significant (Plant and Valle, 2008). E-Procurement solutions are seen as a way to address many public sector procurement requirements. It has become apparent that the more the procurement process is supported by Internet technology, the easier it will become to develop and implement e-Procurement. The e-Procurement infrastructure and procedures can improve procurement performance.

H1: e-procurement positively predicts procurement performance

2.5.2 Relationship between risk management and procurement performance

Aghajanian (2018) revealed that to ensure effective procurement and supply chain risk management, the organization should use best practices such as risk identification, risk assessment, decision and implementation of risk management actions and risk monitoring. The study also revealed the significant gap in the identification stage and the pre-identification stage has been proposed to help practitioners better identification of procurement risk. He further found that applying procurement and supply chain risk management best practices have a significant positive impact on procurement performance.

Laradi, Shibani, Douraid, and El Had (2017) researched on evaluation of supply chain risk management for material procurement in Libya's oil industry. The results identified common procurement and supply chain risk for material procurement such as macro risk, demand risk, manufacturing risk, supply risk and infrastructure risk (information risk, transportation risk and financial risk). The study further found that the risk management process for material procurement should include risk identification, risk assessment, and risk monitoring which

implies that applying an appropriate risk management process increases the performance of material procurement. Chaponde (2020) in a study titled an appraisal on risk management in the procurement of Goods at Ghana Greed Company Limited. The findings indicated delays in the delivery of goods, poor contract management, and poor planning due to unrealistic cost and poor timing and information management, poor need assessment, unethical behaviour with procurement process, improper records management and poor management of suppliers among other trigger risks to energy procurement.

Timothy Adu Gyamfia and Amphil (2015), conducted a study on the effects of procurement risk management practices on risk management in construction firms. The findings indicated that procurement management practices for the most of firms complied with the risk identification process, risk analysis, risk responses as well as risk monitoring and generally management team was more concerned with risk identification or risk assessment. Slinicu and Ciobanu (2013), conducted a study on risk management practices on project performance. Their study revealed that monitoring and control of risk in public construction projects are very important as it may track all new risk that affects the performance of the projects and proactively provide corrective action. It also revealed the significant relationship between risk monitoring, control and project performance.

Oehmen et al. (2014), conducted a study on analysis of the effects of risk management practices on the performance of new product development programs. The results showed the six best categories of effective procurement risk management such as developing risk management skills and resources, tailoring risk management to and integrating it with new product development, quantifying the impact of risk in the main objectives, supporting all critical decisions with risk management results, monitor and review your risks, and risk management process as well as creating transparency regarding new product development risks. Okonjo

(2014), studied procurement risk management practices on the supply chain performance of mobile phone service providers in Kenya. The results showed that most mobile service providers implemented procurement risk management practices such as procurement strategy, sourcing and category, supplier relationship, value engineering, back-to-back contract, workforce and organization, insurance, multi-sourcing regular negotiation with supplier and supply chain financing. It also found that there was a significant relationship between procurement risk management practices on procurement and supply chain performance.

Tumuhairwe and Ahimbisibwe (2016) on a study regarding procurement records compliance, effective risk management and procurement performance. The study also indicated that effective risk management has a stronger influence on procurement performance. Further to that, the findings show that procurement records compliance and effective risk management are significant predictors of records management performance hence increasing procurement performance in public organizations.

Wang (2018) carried out a study on risk management for the health supply chain of hospitals in China and the United Kingdom (UK). The study adopted a deductive approach using triangulation of both quantitative and qualitative methods. The results of the study found that risk factor identification, risk assessment, and risk monitoring are significant to the performance of the health supply chain.

Eliufoo (2017) conducted a study on the e-procurement risks and mitigation strategies of Tanzania construction companies and identified major risks associated with e-procurement such as the attack of computer viruses and worms, unreliable internet services, information leakage or hacking and incompatibility of technology. The study indicated that mitigation strategies for the identified risk include exercise management and monitoring of information and communication technologies (ICT), support of the Country's procurement guidelines for

e-procurement in construction companies and possession of e-procurement skills. Another study conducted in Tanzania by Mtullu (2017) on the assessment of risk management on real estate project performance in Tanzania at NHC identified the risks facing NHC which was a delay in payment to contractors after completion of work which affected the market of houses. These findings implied that contractors were not paid timely which affected the relationship and hence reduced the performance of various projects as 20% of individuals went back to collect their money.

H2: There is a positive and significant relationship between risk management and procurement performance.

2.5.3 The relationship between e-procurement and risk management in food and beverage manufacturing firms in Uganda.

Several researches have related e-procurement to risk management. Abutabenjeh et al (2021) argued that risk management helps companies ensure smooth and successful e-procurement. Risk management also contributes to the resilience of a supply chain as a whole and business continuity. Adom and Kwakwa (2014) indicated that procurement risk management is successful if internal and external risks to procurement are identified and dealt with. Effective risk management demands eliminating situations that put an organization's e-procurement process at unnecessary vulnerability (Bags et al., 2020). These risks can include inaccurate internal needs analysis, poor vendor selection, disorganized vendor management, non-compliance and crude contract management processes, and error-prone, wrong specifications Chin (2010), among others. Chopra and Sodhi (2014) indicated that different e-procurement activities are capable of putting the entire procurement process at risk if not dealt with properly. Therefore, organisations have to look for different strategies on how to handle different risks that may come as a result of e-procurement before they negatively affect the procurement

process. Wild (2020) argued that there is a positive and significant relationship between e-procurement and risk management. Walker 2021 investigated the effect of procurement risks on E-procurement practices in not-for-profit organisations in Kenya. His findings indicated that there was a positive and significant relationship between E-procurement and risk management. Kines 2013 investigated how risk management affected e-procurement and contract management in public entities in Tanzania. His findings indicated risk management positively influenced contract management while risk management insignificantly influenced e-procurement.

H3: E-Procurement positively influences risk management in food and beverage manufacturing firms in Uganda.

2.5.4 The mediating role of risk management in the relationship between e-procurement and procurement performance

There has been scarce literature related to risk management, e-procurement and procurement performance. Karim (2018) indicated that e-procurement entails managing activities associated with a company's need to procure the goods and services required to either produce a product or service (direct) or to operate the organisation indirectly using the Internet. Nowadays internet means have been used to acquire goods and services at the best total cost of ownership, the right quantity and quality, at the right time and in the right place (Samson & Ford, 2010). Proper e-procurement strategies are employed to mitigate various risks associated with procurement. The combination of different strategies in e-procurement is a safeguard against different risks that have the potential to negatively affect the procurement process.

Carter (2014) indicated that e-procurement is highly associated with different risks. These risks are capable of negatively affecting the procurement performance of a firm. Karts (2020)

indicated that firms which can manage or minimize different e-procurement risks are likely to improve their procurement performance. Lean and Avery (2015) outlined different risks that need to be managed throughout e-procurement. These risks include inaccurate needs analysis, inadequate vendor management and sourcing, underdeveloped contract management processes, poor automation processes and poor procurement planning (Brammer & Walker 2011). All these risks have to be prepared for by procuring firms for better management which would improve the procurement performance. Bonnie and South 2018 carried out a study on the mediation effect of procurement risk management in the relationship between e-procurement and procurement performance. Results indicated that procurement risk management mediates the relationship between e-procurement and procurement performance. Muthugala (2012) argued that a well management e-procurement process can mitigate different procurement risks which would improve procurement practices.

H4: risk management positively mediates the relationship between e-procurement and procurement performance

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter addresses how the study was undertaken. It highlights the study design, population, sample size, sampling procedure, data collection instruments, measurement of the variables, ethical considerations, reliability and validity, units of inquiry and analysis, as well as the data collection sources and activities.

3.1 Research design

The study used a cross-sectional and quantitative research design, which involves analyzing data collected at a specific point in time. This research design was chosen because it allows the researcher to collect data at a specific point in time. A cross-sectional survey is used when the researcher does not have enough time to study the behaviour of the variables for a different period (Saunders et al, 2019). Scarte (2018) indicated that quantitative research is preferred because it allows a broader study which involves a greater number of subjects. This can also provide summaries of data that can be used to generalize the phenomenon under the study.

3.2 Study Population

The study population included 70 beverage manufacturing firms from the private sector foundation (PSFU) annual report and financial statement for 2020/2021 and 159 food processing firms as provided by the Uganda Bureau of Statistics (UBOS) census report on Business establishments 2020/2021. This brings the total population to 229. The beverage industry offers many types of drinks including energy drinks, health drinks, juices, sodas, coffees and teas, sparkling waters, and alcoholic beverages.

The unit of analysis for this study is food and beverage manufacturing firms in Kampala and the metropolitan area. The reasons for selecting food processing firms process raw fruits,

vegetables, grains, meats, and dairy products into finished goods ready for the grocer or wholesaler to sell to households, restaurants, or institutional food services.

The unit of inquiry was any staff involved in the procurement activities in the selected firms. This is because these people are involved in the daily procurement activities of food and beverage manufacturing firms and they are deemed to have adequate knowledge about the variables under study. The study only chose one person to represent each organisation or an end user of that organisation.

3.3 Sampling Design

The research employed both stratified and simple random sampling techniques. Stratified sampling is a method of sampling from a population which can be partitioned into subpopulations. The population was stratified into food processing firms and beverage processing firms. Simple random sampling was then used to select firms from each of the strata. A simple random sampling method is where all the members of the population have equal chances of being selected (Rajiv 2020). The sample was determined by a raffle method. This involved listing and writing down the names of all food and beverage manufacturing firms and allocating a number to each firm on the list. Each name of the firm was written on a separate piece of paper and folded. The papers were put in the basket and picked out one by one without replacement. This gave equal chances to every firm to be selected.

3.4 Sample Size determination

Based on a population of 229, the sample size was 172 food and beverage manufacturing firms using Krejcie & Morgan (1970). A sample size of 172 respondents was considered adequate for this study (Krejcie & Morgan, 1970). The research selected only one respondent from each firm.

Beverage processing firms	70	59
Food processing firms	159	113
Total	229	172

3.5 Measurement of the variables

Research variable	Dimensions	Source literature
Procurement performance	• Effectiveness • Efficiency • Value for money	Immanuel (2022)
Risk management	• Risk identification • Risk monitoring • Risk Assessment	Tangarev et al (2020)
e-Procurement	• Transparency • E-sourcing • E-information	Ismail 2015, Piga and Zanza (2006)

3.6 Data Collection Methods

The research collected primary data. The researcher used questionnaires to obtain primary data. The questionnaires were administered directly to the respondents by the researcher. Primary data was preferred because it gave first-hand information from the respondents (Marhan, 2020).

3.7 Data collection instrument and procedure

Primary data was obtained using a structured questionnaire to the respondents following systematic procedures. The questionnaire was used because it is simple to administer, can easily be filled by the respondents, is convenience and above all, it is cost-effective and can be used to collect data from a wider number of respondents (Mohammed et al, 2021). The questionnaire consisted of close-ended questions because they were convenient for respondents. The questionnaires were distributed physically by the researcher. The respondents were given two weeks to respond to the questionnaire. The researcher sent the respondents

reminders after every four days. If any respondent didn't respond in that specified time, it was deemed that he was not interested in filling out the questionnaire. All variables were measured using a five-point Likert scale, with responses ranging from strongly disagree (1) to strongly agree (5).

3.8 Reliability

Sekaran (2003) indicated that reliability measures the consistency of the instrument in measuring the concepts under study. If the findings from the research are replicated consistently, they are reliable. In this study, reliability was assessed using Cronbach's Alpha values. According to Elgon (2012), Cronbach's alpha values of 0.7 and above depict acceptable levels of reliability of the measures of the research variables. Reliability results are shown below in Table 1.

Table 1: *Reliability Results*

Variable	No of Items	Cronbach's Alpha
E-Procurement	16	0.906
Risk Management	29	0.938
Procurement Performance	14	0.901

Source: primary data

3.9 Validity

This measures the accuracy of the questionnaire by considering what it is intended to measure (Maxwell, 2009). To ensure validity, the questionnaire was subjected to a content validity index where five experts were requested to rate the relevance of the questions set against the study variables using the scale of relevant and not relevant. The results for CVI are shown in Table 2 below:

Table 2: *Content Validity Index (CVI Results)*

Variables	CVI Score
E-Procurement	0.877
Risk Management	0.801
Procurement Performance	0.799

Source: primary data

As seen in the table above, the results for CVI were above 0.7 which indicates the validity of items in the questionnaire (Chan & Idris, 2017).

3.10 Data Processing and Analysis

Statistical treatment of captured primary data involved sorting, editing, coding and accurate entry using Statistical Package for Social Scientist (SPSS) Version 22.0, and then a descriptive and inferential analysis of measurable relationships between study variables. Descriptive statistics were summarized in categorical frequency tables. Following the study objectives, Pearson`s correlation and hierarchical regression analysis were used for associations and predictor contributions respectively.

3.11 Ethical Considerations

The researcher got an introductory letter from MUBS which was presented to the management and respondents in different organisations where data was collected. The researcher sought permission from the administrators in charge before the questionnaires are administered. The respondents were assured of anonymity, which was achieved through structuring the questionnaire in such a way that they don't disclose either the company's name or the respondent's name. When the questionnaires were returned, data was extracted from them and kept in a closed drawer for two years and then destroyed after. This was done to ensure confidentiality.

CHAPTER FOUR

ANALYSIS, PRESENTATION AND INTERPRETATION OF THE RESULTS

4.0 Introduction

This chapter covers the presentation, analysis and interpretation of the results according to the objectives of the study specified in the first chapter. The objectives were:

- i. To assess the relationship between e-procurement and procurement performance of food and beverage firms in the Kampala Metropolitan Area.
- ii. To analyze the relationship between risk management and procurement performance of food and beverage firms in the Kampala Metropolitan Area
- iii. To determine the relationship between e-procurement and risk management of food and beverage firms in the Kampala Metropolitan Area.
- iv. To examine the mediation effect of risk management in the relationship between e-procurement and procurement performance of food and beverage firms in the Kampala Metropolitan Area.

4.1 Response Rate

The study targeted 172 firms. However, not all the respondents returned the questionnaires in time. Consequently, information was obtained from only 129 firms. This gave a response rate of 75%, which is considered sufficient for this study as indicated by Mugenda and Mugenda (2003).

4.2.1 Background information on the respondents

It was deemed important to understand the characteristics of the respondents and their ability to provide valid responses. As such background information on respondents was collected and presented as shown in Table 3:

Table 3: Sample Characteristics (N=155)

Parameter	Frequency	%
Gender		
Male	84	54.2
Female	71	45.8
Age		
18-25	9	5.8
26-30	91	58.7
36-40	26	16.8
41-45	7	4.5
46-50	13	8.4
51 and above	9	5.8
Education Level		
Certificate	2	1.3
Diploma	14	9.0
Bachelor's degree	80	51.6
Postgraduate diploma	26	16.8
Master's degree	33	21.3
How long they have worked in the firm		
Less than a year	8	5.2
1-2 years	42	27.1
3-5 years	59	38.1
6-10 years	26	16.8
11 years and above	20	12.9

The results in Table 3 show that most of the respondents (54.2%) are males and the females are 45.8 per cent. This implies that the data was obtained from mainly male respondents with a minority of females which indicates that males are most of the staff working in the beverage manufacturing firms. The overrepresentation of males in your study's respondent group likely mirrors the current gender distribution in the food and beverage manufacturing sector in the Kampala Metropolitan Area. This imbalance could stem from a variety of sociocultural, educational, policy-related, and work environment factors.

Results further show that 58.7 per cent of the respondents are aged 26-30 years old followed by 16.8 per cent who are aged 36-40 years. This implies that the findings are majorly based on respondents who are in the age group of 26 to 40 years. It also shows that whereas all age groups are represented, these people in the middle age bracket are the ones that comprise most of the respondents in the firms of interest to this study. This could imply that food and beverage firms require staff who are still energetic given the nature of work in these firms.

The study also inquired about the academic qualification of the respondents. Results have shown that 51.6 per cent of the respondents have a bachelor's degree and 21.3 per cent have master's degrees. This implies that most of the respondents are well educated and thus fully understand the purpose of this study and gave reliable data.

Findings have revealed that 38.1 per cent of these respondents have experience of 3-5 years whereas 27.1 per cent have experience of 1-2 years. From the findings, one can imply therefore that most respondents have worked long enough to know about procurement performance in the food and beverage industry and they are experienced enough to provide information that can be relied upon to arrive at logical conclusions for this study.

4.2.2 Background information on the firms

The background information on the category of the firm, ownership status, years of operation and number of employees was collected. These results are shown in Table 4.

Table 4: *Characteristics of the firms (N=155)*

Parameter	Frequency	%
Category of Business firm		
Sole Proprietorship	21	13.5
Partnership	34	21.9
Private Limited Company	75	48.4
Public Limited Company	25	16.1
Ownership Status of the Firm		
Fully Ugandan	56	36.1
Fully Foreign Owned	57	36.8
Joint Ownership	42	27.1
How long has the company been in business		
less than 3 years	10	6.5
3-6 years	31	20.0
7-10 years	44	28.4
11-14 years	33	21.3
15-18 years	20	12.9
19-22 years	8	5.2
Over 22 years	9	5.8
Number of fulltime Employees		
5-50 employees	65	41.9
51-100 employees	45	29.0
101-150 employees	20	12.9
150-250 employees	21	13.5

Results show that the biggest category of the firms are private limited companies at 48.4 per cent while the partnerships are 21.9 per cent and other types of firms are represented which shows that various types of firms are in the food and beverage industry and they are also represented in the study.

As for the years of operation, results have indicated in Table 4 most firms lie in the 3-14 years bracket although some are very new and even some which have been in business for more than 22 years. This implies that data was obtained from firms which have existed for varying timelines.

The results also show that the biggest category (41.9%) of the firms have 5-50 employees followed by 29 per cent who have 51-100 employees. The implication is that most of the food and beverage firms employ a few staff, and this could be relative to size as they are mainly small and medium enterprises.

4.3 Pearson's Correlation Coefficients

The objectives of the study concerned relationships between the variables. To achieve this, the Pearson (r) correlation coefficient was computed given the interval nature of the data and the need to test the direction and strength of this relationship. Table 5 below shows Pearson's Correlation Coefficient for the variables under study.

Table 5*Showing Pearson Correlation Results (N=155)*

Variable/Indicator	1	2	3	4	5	6	7	8	9
1. Risk Identification	1								
2. Risk Monitoring	.302**	1							
3. Risk Assessment	.739**	.250**	1						
4. Risk Management	.883**	.573**	.856**	1					
5. Transparency	.669**	.501**	.553**	.759**	1				
6. E-Sourcing	.711**	.295**	.690**	.773**	.737**	1			
7. E-information	.636**	.401**	.620**	.730**	.708**	.764**	1		
8. E-Procurement	.712**	.421**	.655**	.797**	.900**	.927**	.898**	1	
9. Procurement Performance	.756**	.310**	.764**	.820**	.649**	.728**	.702**	.739**	1

The study had two independent variables and one dependent variable. These results in Table 5 are interpreted in the subsections that follow, according to the stated objectives of the study:

4.3.1 The relationship between e-procurement and procurement performance of food and beverage firms in the Kampala Metropolitan Area

The first objective of the study was to examine the relationship between e-procurement and the procurement performance of food and beverage firms in the Kampala Metropolitan Area. The results in Table 5 indicate that there is a positive and significant relationship between e-procurement and procurement performance of food and beverage firms in the Kampala Metropolitan Area ($r = .739^*$, $p < .01$).

Even the constructs of e-procurement show a significant association with procurement performance. This is indicated by transparency ($r = .649^*$, $p < .01$), e-sourcing ($r = .728^*$, $p < .01$), and e-information ($r = .702^*$, $p < .01$).

A positive relationship implies that an improvement in e-procurement will result in an improvement in procurement performance.

4.3.2 The relationship between risk management and procurement performance of food and beverage firms in the Kampala Metropolitan Area

The second objective of the study was to examine the relationship between risk management and procurement performance of food and beverage firms in the Kampala Metropolitan Area. The results in Table 5 indicate that there is a positive and significant relationship between risk management and procurement performance ($r = .820^*$, $p < .01$).

Even the constructs of risk management show a significant association with procurement performance. This is indicated by risk identification ($r = .756^*$, $p < .01$), risk monitoring ($r = .310^*$, $p < .01$), and risk assessment ($r = .764^*$, $p < .01$).

A positive relationship implies that the more risks are managed, the better the procurement performance.

4.3.3 The relationship between e-procurement and risk management of food and beverage firms in the Kampala Metropolitan Area

The third objective of the study was to examine the relationship between e-procurement and risk management of food and beverage firms in the Kampala Metropolitan Area. The results in Table 5 indicate that e-procurement and risk management are significantly correlated ($r = .797^*$, $p < .01$).

Even the constructs of e-procurement show a significant association with risk management. This is indicated by transparency ($r = .759^*$, $p < .01$), e-sourcing ($r = .773^*$, $p < .01$), and e-information ($r = .730^*$, $p < .01$).

This means that an improvement in e-procurement will lead to an improvement in risk management.

4.4 Regression Results

To ascertain the degree to which the independent variables affect the dependent variable, a regression analysis was done. Table 6 shows the results of the regression analysis.

Table 6: Regression Coefficients (N=155)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.018	.216		.085	.932
	Risk Management	.757	.090	.631	8.429	.000
	E-Procurement	.282	.089	.238	3.179	.002

R=.832, R Square=.693, Adjusted R Square=.689, Std Error of the Estimate=.47471

a. Dependent Variable: Procurement Performance

The study sought to ascertain the predictive potential of each of the two independent variables on the dependent variable. The results in Table 6 further show that risk management ($\beta = 0.631$, $p < .01$) is a significant predictor of procurement performance. E-procurement on the other hand also is a significant predictor ($\beta = 0.238$, $p < .01$) of procurement performance.

The results in the regression model show that all two independent variables can predict 68.9 per cent of the variance in procurement performance of the firms in question (Adjusted R Square = .689). The remaining 31.1 per cent is predicted by other factors which have not been considered in this study.

4.5 Mediation Analysis

According to the fourth objective, the Mediation analysis was conducted using techniques based on regression analysis as stated by Kumari & Yadav (2018). The mediator is considered an intervening variable which explains the relationship between a predictor variable and a criterion variable. The following conditions must be met in the results to support mediation:

- (i) The independent variable is shown to significantly influence the dependent variable in the first regression equation.
- (ii) Independent variable is shown to significantly influence the mediator in the second regression equation.

- (iii) The mediator must significantly influence the dependent variable in the third equation. Here, the independent variable and mediator are entered as predictors.

Full mediation is present when the independent variable no longer influences the dependent variable after the mediator has been controlled and all the above conditions are met. Partial mediation occurs when the independent variable's influence on the dependent variable is reduced after the mediator is controlled and the relationship remains significant. There are no results to show whether there is full or partial mediation.

4.5.1 The mediation effect of risk management in the relationship between e-procurement and procurement performance of food and beverage firms in the Kampala Metropolitan Area

Testing for mediation was also done using the Sobel (1982) Mediator Test. Barron and Kenny (1986) posit that a mediator variable is a variable that explains the relationship between a predictor variable and a criterion variable. The first model assesses if there is a significant effect of e-procurement on procurement performance, the second model establishes whether there is a significant effect of e-procurement (independent) on risk management (mediator), then the last model assesses the mediation effect of risk management in the relationship between e-procurement and procurement performance of food and beverage firms in Kampala Metropolitan Area.

The formulae for the Sobel test equation is shown below:

$$z\text{-value} = a*b/\text{SQRT}(b^2*s_a^2 + a^2*s_b^2).$$

Where:

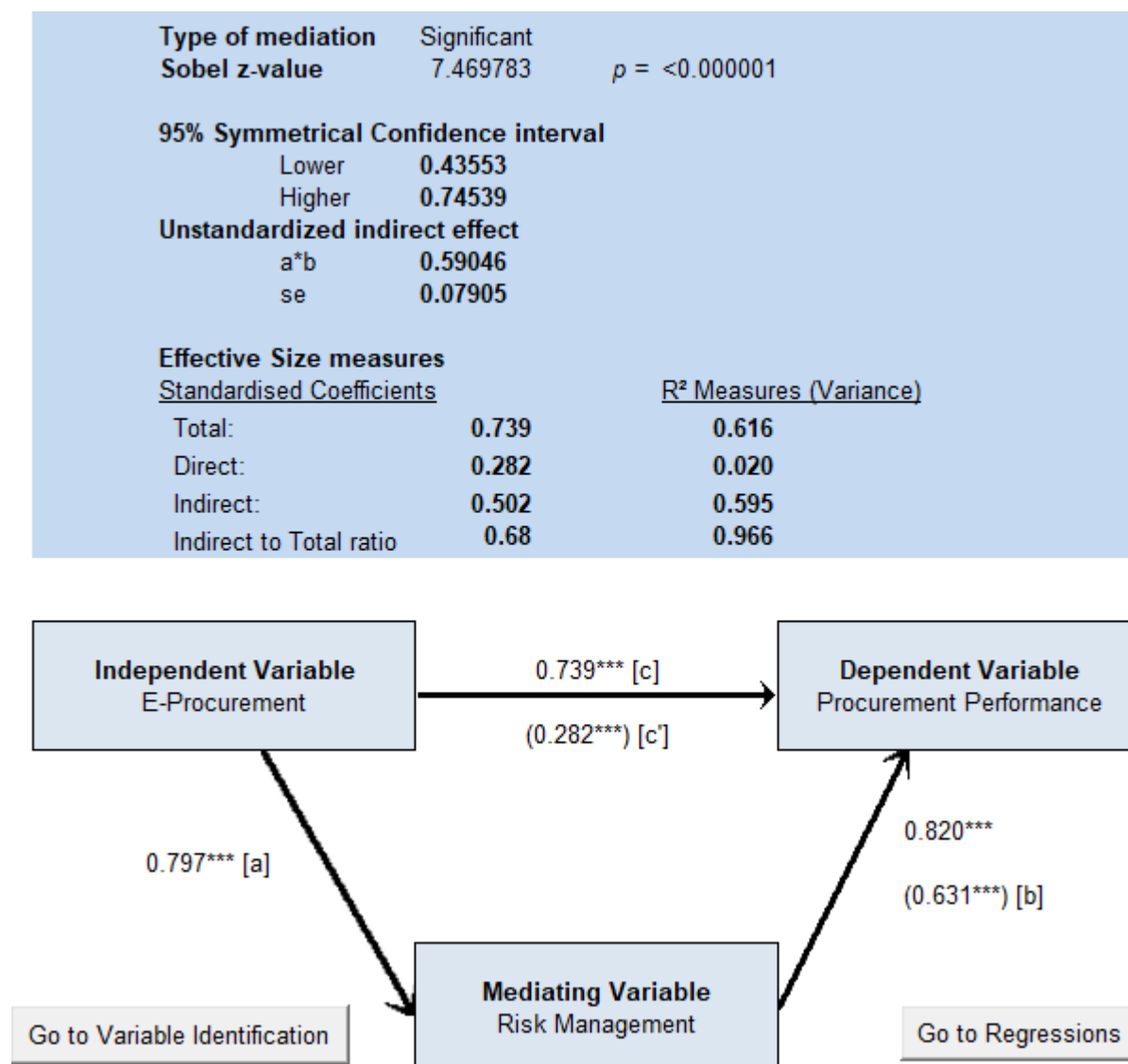
a= the unstandardized beta value for the regression model between e-procurement and risk management

b= the unstandardized beta value for the regression model between risk management and procurement performance

S_a= the Standard error for the regression model between e-procurement and risk management

S_b= the standard error for the regression model between risk management and procurement performance.

Figure 2: Medgraph illustrating the mediation effect of risk management in the relationship between e-procurement and procurement performance of food and beverage firms in the Kampala Metropolitan Area



The results in figure 2 show that the p-value is less than 0.01. The results, therefore, indicate that risk management partially mediates the relationship between e-procurement and procurement performance of food and beverage firms in the Kampala Metropolitan Area.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS

5.0 Introduction

This chapter contains a discussion of study findings concerning research objectives. The findings are explained in detail and related to existing literature. The chapter also contains recommendations and areas for further research.

5.1 Discussion of Findings

5.1.1 The Relationship between e-procurement and procurement performance of food and beverage firms in the Kampala Metropolitan Area

The first objective of the study was to investigate the relationship between e-procurement and procurement performance within the context of food and beverage firms in the Kampala Metropolitan Area. The empirical evidence supports a positive and significant relationship between e-procurement and procurement performance. This correlation extends to various e-procurement constructs including transparency, e-sourcing, and e-information. The findings suggest that enhancements in e-procurement practices directly influence improvements in procurement performance and vice versa. The regression results reinforce the notion that e-procurement is a substantial predictor of procurement performance within this specific industrial context.

The results align with Titia's (2021) research on public entities, further establishing a positive correlation between e-procurement and procurement performance. Furthermore, these findings echo the insights of Hardy and Williams (2011), Plant and Valle (2008), and Carr and Pearson (2002), who all observed the positive impacts of e-procurement on procurement performance across various sectors.

Within the specific context of the food and beverage industry, the adoption of e-procurement can lead to increased transparency, more efficient sourcing, and improved information dissemination. These

improvements contribute to the overall procurement performance by streamlining processes, reducing transaction costs, and ensuring better compliance with regulatory requirements. These factors are of particular significance in the food and beverage industry where strict compliance with quality standards and sourcing norms is crucial.

As Qualls and Shaw (2010) pointed out, an overemphasis on compliance could inadvertently stifle the overall effectiveness of procurement processes if firms become overly reliant on technology, neglecting the critical role of human judgment and expertise in procurement decisions.

From the resource-based theory perspective, the findings are consistent with the view that e-procurement represents a strategic resource that can be leveraged to gain a competitive advantage. This theory posits that firm performance is largely determined by its unique resources and capabilities (Barney, 1991). In the context of food and beverage firms, e-procurement systems serve as an invaluable resource that enhances procurement performance, thereby providing firms with a competitive edge in the market.

5.1.2 The relationship between risk management and procurement performance of food and beverage firms in Kampala Metropolitan Area

The second objective of this study was to assess the relationship between risk management and procurement performance, specifically within the context of food and beverage firms in the Kampala Metropolitan Area. Empirical evidence gathered strongly suggests a positive and significant relationship between risk management and procurement performance, with distinct constructs of risk management - risk identification, risk mitigation, risk monitoring, and risk assessment - exhibiting noteworthy associations with procurement performance. In essence, changes in risk management practices mirror changes in procurement performance. The regression results further reinforce the argument that risk management is a significant predictor of procurement performance within this industry.

These findings align with previous studies, underscoring the importance of best practices in risk management, such as risk identification, risk assessment, risk mitigation, risk monitoring, and contingency planning, for effective procurement and supply chain risk management (Aghajanian, 2018; Laradi et al., 2017). The correlation between these risk management constructs, and procurement performance suggests a broad consensus on the positive influence that comprehensive risk management exerts on procurement performance.

Notably, the food and beverage sector grapples with unique risk factors due to perishability, stringent safety standards, and fluctuating demand patterns. As such, the applicability of risk management practices across different industries and contexts may vary. The studies by Oehmen et al. (2014) and Wang (2018), although conducted within different sectors, revealed the positive impacts of risk management on performance. Furthermore, these findings underscore the potential benefit of tailored risk management strategies for specific sectors, such as the food and beverage industry.

From a resource-based theory viewpoint, these findings are consistent with the theory's premise that strategic resources and capabilities, like effective risk management in this case, are pivotal to a firm's performance. Risk management serves as a critical resource in the food and beverage industry, helping firms navigate complex procurement processes, mitigate risks, and ultimately, enhance procurement performance.

Jüttner's (2005) suggestion that understanding and managing supply chain risks require a systematic approach integrating several business functions further emphasizes the importance of organization-wide coordination in effective risk management. In this respect, firms within the food and beverage sector should look towards fostering a culture of shared responsibility and cross-functional collaboration in risk management to optimize procurement performance.

5.1.3 The relationship between e-procurement and risk management of food and beverage firms in the Kampala Metropolitan Area

The third objective of the study was to delve into the relationship between e-procurement and risk management, specifically within the food and beverage firms in the Kampala Metropolitan Area. The results demonstrate a significant positive relationship between e-procurement and risk management. It is further underscored by significant associations between constructs of e-procurement such as transparency, e-sourcing, e-information, and risk management. A noteworthy implication of these results is the reciprocal nature of improvement in these areas; as e-procurement is refined, risk management is correspondingly likely to advance.

These findings are aligned with numerous studies. For instance, Abutabenjeh et al. (2021) and Wild (2020) contended that efficient risk management underpins the successful execution of e-procurement, corroborating the study's findings. Similarly, Walker (2021) discovered a positive and substantial relationship between e-procurement and risk management, echoing the associations detected in this study.

Moreover, Adom and Kwakwa (2014), as well as Bags et al. (2020), highlighted the crucial role of identifying and managing both internal and external risks in e-procurement to forestall vulnerabilities. This concurs with the study's findings that improvements in e-procurement practices - including enhanced transparency, e-sourcing, and e-information - facilitate more effective risk management. The inference is that as e-procurement processes become more transparent, data-driven, and streamlined, they invariably mitigate vulnerabilities and bolster firms' ability to manage procurement risks.

However, Kines's (2013) findings contest this view, positing that risk management exerts an insignificant influence on e-procurement. This discrepancy may stem from regional or industry-specific variations in procurement practices.

Finally, it's critical to acknowledge Chopra and Sodhi's (2014) assertion that e-procurement activities, if not judiciously managed, could inadvertently introduce risks to the procurement process. This insight illustrates the multifaceted nature of the relationship between e-procurement and risk management: while e-procurement can enhance risk management capabilities, it can also spawn new risks. Particularly in the food and beverage industry, where product integrity is paramount, rushed or improperly implemented e-procurement can generate unanticipated challenges like technical glitches, resistance from suppliers, or cybersecurity threats. Consequently, these obstacles necessitate the need for robust risk management strategies, underscoring the critical interplay between e-procurement and risk management.

5.1.4 The mediation effect of risk management in the relationship between e-procurement and procurement performance of food and beverage firms in the Kampala Metropolitan Area

Testing for mediation was also done using the Sobel (1982) Mediator Test. The results indicate that risk management partially mediates in the relationship between e-procurement and procurement performance of food and beverage firms in the Kampala Metropolitan Area. The mediation effect of risk management in the relationship between e-procurement and procurement performance is a critical component for food and beverage firms in the Kampala Metropolitan Area. Findings from this study suggest that risk management plays a partial mediating role between e-procurement and procurement performance. This aligns with the works of several scholars. For instance, Bonnie and South (2018) found that procurement risk management mediates the relationship between e-procurement and procurement performance. This aligns with the field findings and emphasizes the importance of risk management in ensuring that e-procurement systems contribute positively to procurement performance. Similarly, Karim (2018) highlighted the importance of managing the activities associated with e-procurement and emphasized that proper e-procurement strategies mitigate various procurement risks. This is crucial because, as Carter (2014) pointed out, e-procurement is inherently associated with different risks which could potentially have a negative impact on procurement performance.

Karts (2020) goes on to assert that companies which can effectively manage or minimize the various risks associated with e-procurement are likely to witness improvements in their procurement performance. This supports the mediation effect, suggesting that the benefits of e-procurement on procurement performance are not direct but are contingent upon the effective management of associated risks. Muthugala (2012) is also aligned with these findings by arguing that a well-managed e-procurement process can mitigate different procurement risks, thereby enhancing procurement practices.

5.2 Conclusion

From the data collected and the literature reviewed, it is evident that e-procurement has a significant positive relationship with procurement performance. Enhancements in e-procurement practices, such as transparency, e-sourcing, and e-information, lead to improved procurement performance. This implies that while e-procurement is an important factor, it is not a standalone solution for the complex procurement issues faced by these firms.

The results support the positive relationship between risk management and procurement performance. However, it is also clear that effective risk management is complex and needs to be tailored to the specific industry and organizational context. Moreover, addressing challenges in risk identification and dealing with emergent risks, particularly in the realm of technology, are critical for maximizing procurement performance. The need for an integrated approach that spans across different business functions also emerges as a critical factor in effective risk management.

In further conclusion, the discussion indicates that there is generally a positive correlation between e-procurement and risk management as supported by most of the literature and primary data findings. However, it is also essential to understand that e-procurement can present its own set of risks that must be managed. The relationship between these two is multi-faceted and demands attention both in the

implementation of e-procurement and the continuous development of risk management strategies tailored to handle the dynamics introduced by e-procurement.

Regarding mediation, it is evident that risk management is not just a complementary process, but a crucial mediator that can amplify or diminish the effects of e-procurement on procurement performance. The findings of the field data show a partial mediation effect. However, organizations must recognize the challenges and risks associated with e-procurement and be proactive in employing robust risk management strategies. The synergistic application of e-procurement and risk management can be a catalyst in improving procurement performance in food and beverage firms, particularly in the Kampala Metropolitan Area.

5.3 Recommendations

Based on the study findings and discussions. This study presents the following recommendations.

Integrate e-procurement and supply chain management: Food and beverage firms should integrate e-procurement systems with wider supply chain management practices. This involves not just the automation of procurement processes, but also the utilization of e-procurement data for decision-making in supply chain management. This can help in optimizing supplier relationships, reducing lead times, and achieving cost savings through more informed sourcing decisions. Incorporating predictive analytics into e-procurement systems can also help in forecasting demand and supply trends, which can mitigate procurement delays and stabilize input costs.

Strengthen supplier collaboration through e-procurement: This could include creating joint initiatives for cost reductions, sharing market intelligence, and implementing real-time communication systems that can provide early warnings of potential delays. By working closely with suppliers through e-procurement platforms, firms can develop more flexible and responsive procurement strategies that can adapt to market fluctuations and reduce overall costs.

Implement tailored risk management strategies: Food and beverage firms should develop and implement risk management strategies that are specifically tailored to the industry's unique challenges, such as perishability, fluctuating demand, and compliance with food safety standards. This includes the creation of a specialized risk management team that would be tasked with continually monitoring the market and regulatory landscape, identifying emerging risks, and developing adaptive strategies. This team should also be responsible for training staff in risk management best practices and ensuring that these practices are deeply ingrained in the corporate culture.

Investment in risk management strategies: Food and beverage manufacturing firms in the Kampala Metropolitan Area should invest, adopt and encourage risk management as a core component of their e-procurement strategies. This integration should be based on a structured framework that systematically addresses the various risks associated with e-procurement. Such a framework should entail the identification, assessment, mitigation, and monitoring of risks. Implementing this integrated approach will help food and beverage firms in the Kampala Metropolitan Area to maximize the benefits of e-procurement while minimizing the risks. This, in turn, can lead to improved procurement performance, which can contribute to the growth and competitiveness of these firms in the marketplace. Moreover, considering the fast-paced nature of technology, firms should also engage in training and capacity building to ensure that their workforce is equipped with the necessary skills to effectively use e-procurement tools and to adapt to changes. This human resource investment is essential for realizing the full potential of e-procurement in enhancing procurement performance.

5.4 Limitations

This study used a cross-sectional research design approach, which has some limitations regarding historical trends in the variables. Poor levels of procurement performance today do not necessarily mean that the trend has been the same over the past years hence the results can be misleading.

The study is specifically within the context of food and beverage manufacturing firms in Kampala. It's important to consider whether the findings can be generalized to other sectors or regions. For example, the importance of e-procurement in the food and beverage sector might be driven by regulatory or market conditions in Kampala that may not necessarily apply elsewhere.

Lack of cooperation from the respondents was faced by the researcher as many were guarded on this sensitive procurement matter. However, the researcher laboured to inform them of the confidential and academic nature of this effort, and this made many of them comfortable enough to participate.

5.5 Areas for further study

Future studies should consider a longitudinal approach because cross-sectional research may wrongly bias the findings and lead to wrong conclusions about the situation on the ground.

Other factors that contribute to procurement performance should be probed since this study has shown that the independent variables don't fully explain the issue of procurement performance. Such variables may be service quality, credit policies, customer attitude, and marketing effort, among others.

Further research should be conducted in other service sectors to ascertain whether the variables are similarly related within those contexts, given the unique relationships that have been shown in the results of this study. A good example is the education services sector and even the commercial banking sector.

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APPENDIX I: RESEARCH SURVEY QUESTIONNAIRE

Dear respondent,

I am Agaba Martin, a student at Makerere University Business School, pursuing a Master of Business Administration. As part of my study programme, I am conducting research “**E- PROCUREMENT, RISK MANAGEMENT AND PROCUREMENT PERFORMANCE OF FOOD AND BEVERAGE MANUFACTURING FIRMS IN KAMPALA**”.

This research is purely academic. You have been identified as a key respondent in this research because of your vast related experience. Kindly spare some of your precious time to complete this survey questionnaire. There is no correct or wrong answer. Your responses will be treated with utmost confidentiality and will be purely used for this study. The questionnaire takes about 15 minutes to complete.

SECTION A

PART I: FIRM PROFILE

What category of business organization is your firm? (Please TICK as appropriate)

Sole proprietorship	Partnership	Private limited company	Public Ltd. Company	Other, specify.....
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What is the ownership status of the firm? (Please TICK as appropriate)

Fully Ugandan owned	Fully foreign owned	Joint ownership	If jointly owned, state the % of foreign ownership.....
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How long has the company been in existence?

Less than 3	3-6	7-10	11-14	15-18	19-22	Over 22
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What is the number of full time employees in the company?

Less than 5	5 – 50	51 – 100	101–150	201-250	Over 250
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Indicate what exactly you are involved in producing

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Part I1 SECTION A: PROFILE OF RESPONDENTS

1. Gender

Male ☐

Female ☐

2. Age bracket (in years)

a). 18-25 ☐ b). 26-30 ☐ c).31-35 ☐ d). 36-40 ☐

e). 41-45 ☐ f). 46-50 ☐ g). 51 and above ☐

3. How long have you worked at this organization?

a). Less than a year ☐ b). 1-2 years ☐ c). 3-5 years ☐

d). 6-10 ☐ e). Over 11 years ☐

4. Indicate your highest level of education you have attained.

☐	Certificate	☐	
☐	Diploma	☐	
☐	Bachelor's degree	☐	
☐	Post graduate diploma	☐	
☐	Master's degree	☐	
☐	PhD	☐	
☐	Professional qualifications (please indicate e.g. ACCA, CPA, CIPS, CIM, CIMA, etc)	☐	

In the following sections, please state the degree to which you agree or disagree with the given statement by ticking the appropriate response as follows;

(1) Strongly disagree (SD), (2) Disagree (D), (3) Neither agree nor disagree (N), (4) Agree (A), (5) Strongly agree (SA)

SECTION B: PROCUREMENT PERFORMANCE

	Effectiveness	1 (SD)	2 (D)	3 (N)	4 (A)	5 (SA)
EFFE1	We have short delivery lead times for all our procurements.					
EFFE2	The procurement costs for our products is low.					
EFFE3	The quality of the products that we procure is good.					
EFFE4	We incurred less inventory costs.					
EFFE5	We maintain a safety stock to avoid backorders.					
EFFE6	All our suppliers are compliant with negotiated terms.					
	Efficiency					
EFFI1	We always consolidate our procured items					
EFFI2	We work hard to identify inefficient procurement activities and processes.					
EFFI3	The time in days between order receipt and order delivery is minimal.					
EFFI4	Our suppliers are credited for reliable delivery performance.					
	Value for money					
V01	We are economical in using the different resources while procuring.					
V02	We always mind about the quality of the materials that our suppliers give to us.					
V03	We incorporate issues of sustainability in our procurements.					
V04	We always look at our procurement in terms of the whole life cost of an item.					

SECTION C: RISK MANAGEMENT

	Risk identification	1 (SD)	2 (D)	3 (N)	4 (A)	5 (SA)
RI01	We have well knowledgeable and experienced teams to identify and manage risks.					
RI02	We identify risks to develop plans to minimize harmful events before they arise.					
RI03	We can identify risks in this organisation by brainstorming.					
RI04	Risk identification has enabled us to properly allocate resources.					
RI05	We have a clear process that we go through to identify risks in this organisation.					
	Risk monitoring					
OC01	We monitor risks to learn more about them.					
OC02	We monitor risks to avoid reoccurrence of the same.					
OC03	We monitor risks to know the types of risks that affect our operations and bottom line, as well as which strategies best mitigate them					
OC04	We monitor risks to highlight whether strategies to risk management are effective or not.					
OC05	We monitor risks to be able us to ensure the execution of the risk plan.					

Contingency Planning

RPE01	We identify conditions that could lead to risk in advance	1	2	3	4	5
RPE02	We maintain a risk register for our outsourced services	1	2	3	4	5
RPE03	We plan for measures for the identified condition in advance	1	2	3	4	5
RPE04	We have an alternative measure in case the service providers fail to deliver.	1	2	3	4	5
RPE05	Our contracts have provisions for adjustment of prices to enable service providers to accept additional risk in the execution of the contract.	1	2	3	4	5
RPE06	End users are involved in the development of the plans in outsourcing.	1	2	3	4	5

Risk assessment

RAE01	We have a risk management policy in our PDE	1	2	3	4	5
RAE02	We follow a clear risk evaluation procedure to assess risk in outsourcing.	1	2	3	4	5
RAE03	We have a risk management team that carries out risk identification and analysis.	1	2	3	4	5
RAE04	Staff at different levels are involved in periodic review of risk which lead to the identification and quantification of risk in outsourcing	1	2	3	4	5
RAE05	We keep a register of all assessed risks	1	2	3	4	5
RAE06	We use past risk experience to assess likely risk in current contracts.	1	2	3	4	5

Risk Treatment

RTE01	Our service providers are always prepared to accept an increased amount of risk in the contract	1	2	3	4	5
RTE02	Our service providers are given incentives to accept addition risk	1	2	3	4	5
RTE03	Our service providers are flexible enough to handle any risk that may arise.	1	2	3	4	5
RTE04	We carry out markets surveys to avoid cost overruns	1	2	3	4	5
RTE05	We have a unit that reviews adherence to risk management policy	1	2	3	4	5
RTE06	We carry out continuous risk monitor in each contract.	1	2	3	4	5
RTE07	We accept insignificant risks.	1	2	3	4	5

SECTION D: E-PROCUREMENT

	Transparency	1 (SD)	2 (D)	3 (N)	4 (A)	5 (SA)
SDE01	All our procurement processes and decisions are monitored and reviewed.	1	2	3	4	5
SDE02	Our e-procurement system enables us to be open to our suppliers.	1	2	3	4	5
SDE03	Our e-procurement system enables us to be accountable for every action that we do.	1	2	3	4	5
SDE04	E-procurement helps us to disclose all relevant information so that others can make informed decisions.	1	2	3	4	5
SDE05	Our systems help to ensure that decision-makers can be held accountable.	1	2	3	4	5
SDE06	Our procurement processes are open to more competition.	1	2	3	4	5

	E-sourcing	1	2	3	4	5
SDD01	<i>E-sourcing has enabled this organisation to collect and compare information about several suppliers.</i>	1	2	3	4	5
SDD02	E-sourcing has enabled us to get access to several suppliers unlike the traditional sourcing	1	2	3	4	5
SDD03	E- Sourcing has presented significant cost savings for the procurement team in this organisation.	1	2	3	4	5
SDD04	Electronic sourcing speeds up the time it takes to award a contract to our suppliers.	1	2	3	4	5
SDD05	e-sourcing has promoted transparency in our procurement process.	1	2	3	4	5
	E-information	1	2	3	4	5
PO1	Our suppliers can always access information online.	1	2	3	4	5
PO2	We can get instant feedback from our suppliers.	1	2	3	4	5
PO3	We have a wider range of suppliers to source from through e-information.	1	2	3	4	5
PO4	E-information has saved us time in communicating with our suppliers	1	2	3	4	5
PO5	We have saved paperwork through the use of e-information.	1	2	3	4	5

END OF THE QUESTIONNAIRE