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Procurement Staff Familiarity, Organizational Incentives and Adoption of Sustainable Public Procurement in Uganda

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ABSTRACT

This study examined the effect of procurement staff familiarity and organizational incentives on adoption of sustainable public procurement in Uganda. The study adopted a descriptive cross-sectional survey design with a quantitative approach supported by the positivism philosophy. This research used stratified sampling method to source for the 259 respondents from 790 civil servants and survey questionnaires were used to collect data. The respondents were Chief Procurement Officers, Senior Procurement Officers, Assistant Procurement Officers, Inventory Management Officers, and Assistant Inventory Management Officers from 260 central government in four regions in Uganda. Analysis was conducted using SPSS 23 and AMOS 25 statistical packages. Results have shown that procurement staff familiarity and organizational incentives have an effect on sustainable public procurement adoption. Additionally, given the need for sustainable public procurement in the diaspora and Uganda in particular, this study offers the understanding of a holistic view of sustainable public procurement from the public procurement perspective and this is relevant for the private sector players and academicians.

Keywords: Procurement staff familiarity, Organizational incentives, Sustainable public procurement adoption, Stakeholder theory, Sustainable Theory, Uganda

INTRODUCTION

Considerable changes have been witnessed in the ways different entities carry out their procurements, especially in the past decade. The changes have been occasioned by the rise in environmental, social and economic challenges in the diaspora (Chaudhary, 2016). Most countries globally are moving away from the traditional way of focusing only on their procurements' profits and economic aspects to accommodate two more vital facets of social and ecological aspects (Delprato & Antequera, 2021). This is happening because entities have realized that it is unsustainable and unethical to only concentrate on the economic benefits while overlooking the environment. The importance of sustainability in procurement has

substantially increased in practice and research, prompting many entities to engage in sustainable procurement practices (Basheka & Bisangabasaija, 2019). This has made firms make more efforts to ensure that their operations meet the vital sustainability pillars of ecology, social and economic pillars, while aiming at achieving organizational performance (Mirembe, 2019).

In that spirit, governments, private companies and international agencies have increasingly included social and environmental criteria within their procurement processes to contribute to broader organizational goals of sustainable development (Nabiswa, 2011). In the United Kingdom, public sector procurement policy is built on a set of guiding principles, including competitiveness, transparency, efficiency, accountability, legality and integrity, to support the delivery of sustainable public procurement (Hoejmose et al., 2012). Sustainable public procurement is a process whereby public organizations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organisation but also to society and the economy, whilst minimizing damage to the environment (Skea & Nishioka, 2008).

World leaders adopted the 2030 Development Agenda in September 2015. At its heart are 17 so-called Sustainable Development Goals (SDGs), which aim to improve on the Millennium Development Goals by considering the three pillars of sustainable development: economic, social, and environmental. The government of Uganda, like its regional counterparts, has set in place a complex system of institutions, policies, laws, and regulations to ensure the responsible use of public resources. For example, sections 59A and 59B of the modified PPDA Act 2014 discuss preference and reservation schemes. The Buy Uganda Build Uganda (BUBU) program was implemented to encourage local consumption and the participation of small and medium enterprises (SMEs) in government tenders. Furthermore, in 2013, the National Planning Authority (NPA) developed the Uganda Vision 2040 in consultation with other government institutions and stakeholders to address strategic bottlenecks such as ideological disorientation, unsustainable production and consumption, a weak private sector, underdeveloped human resources, inadequate infrastructure, a small market, a lack of industrialization, an underdeveloped services sector, agricultural underdevelopment, and poor democracy.

Unfortunately, public procuring and disposing entities (PDEs) in Uganda that spend about 75% of the national budget on services, supplies and works that are supposed to implement the country's macroeconomic policies, structural reforms, fiscal policies and spur the sustainability agenda in a bid to achieve the Sustainable Development Goals (SDGs) and Uganda Vision 2040, seem not to be in this pursuit. Public procurement in Uganda is primarily conducted in an unsustainable manner, characterized by shoddy work, environmental resource exploitation, human resource exploitation, economic exploitation, poor disposal, unhealthy offering, quantity over quality and value, addictive consumption patterns, complex opaque value chain, short-term shareholder value and financing, limited purchases from minority/women-owned businesses, as decried by the CEO of Uganda Women Entrepreneurs Association Limited, suppliers employ minors and do not pay a living wage, PDEs don't use a life-cycle analysis to evaluate the environmental friendliness of products and packaging, no arrangements for product recycling or reuse are made, massive use of foreign suppliers at the expense of the local

contractors, and misuse of procurement information. These practices have resulted into a lack of value for money, unfavourable climate changes, natural disasters, and socio-economic instability in the country (Dempster et al., 2020; NEMA, 2022; Executive Director PPDA, 2021).

Several studies conducted on the state of sustainable public procurement adoption in developing countries like Uganda point a bleak status (Abdullahi et al., 2017; Brammer & Walker, 2011; Cader Da Silva et al., 2018a; Gelderman et al., 2017; J. Grandia & Voncken, 2019; Nasiche & Ngugi, 2014; Ochieng, 2019). Similarly, research findings on determinants of sustainable public procurement adoption are characterized by contradictions, controversies, fragmented details, uncoordinated, lack of assimilation, synthesis and consensus (Meehan & Bryde, 2015; Cader Da Silva et al., 2018a; Gelderman et al., 2017; J. Grandia & Voncken, 2019; Nasiche & Ngugi, 2014; Ochieng, 2019).

Problem Statement

Sustainable public procurement has been identified by researchers and practitioners as the surest way of achieving the national development goals, sustainable development goals and Uganda's Vision 2040, given the magnitude of public sector purchasing power to make substantial contributions to the sustainable development agenda (IISD 2016; Obicci, 2017). This is because public procurement accounts for an average of 12% of GDP in OECD-developed countries and up to 30% of GDP in developing countries (OECD, 2017). As such, there is a growing interest from the public towards the impact of procurement on the economy, environment and the society, forcing countries to embrace sustainable procurement practices.

Unfortunately, Uganda, as one of the developing countries expected to be in this league, is slow in taking up structured and policy-driven approaches to adopt sustainable public procurement, the benefits notwithstanding (Nasiche & Ngugi, 2014). Procurement in Uganda is entirely conducted in an unsustainable manner. It is marred with unsustainable practices such as: lack of value for money, inappropriate supplier evaluation, shoddy works/substandard, addictive consumption patterns, poor disposal & waste mgt methods, complex opaque/unclear value chain, discriminative contract awards for example, limited purchases from minority/women-owned businesses, as decried by the CEO of Uganda Women Entrepreneurs Association Limited, suppliers employ minors and do not pay a living wage, PDEs don't use a life-cycle analysis to evaluate the environmental friendliness of products and packaging, no arrangements for product recycling or reuse are made, massive use of foreign suppliers at the expense of the local contractors, misuse of procurement information and suppliers are not asked to commit to waste reduction and environmental protection goals (Executive Director PPDA, 2021).

The unsustainable procurement practices have led to poor quality services, environmental degradation, adverse climate change (average temperature in Uganda has increased by 1.3°C), income disparity, food insecurity (hunger killed 2,207-Karamoja sub region in 2022), and gender inequality, natural disasters, and socio-economic instability in the country (UHRC, 2023; Bocken & Short, 2021; Twesigye, 2013; NEMA, 2022). This status quo is worrying. It has caused and may continue to cause human suffering and jeopardize the achievement of the SDGs, and Uganda Vision 2040 to transform the Ugandan society from a peasant to a modern and prosperous country within 30 years. This disquiet could be attributed to lack of knowledge on

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the determinant factors of sustainable public procurement adoption such as sustainable procurement staff familiarity and organizational incentives, a gap this study addresses.

The Purpose of the Study

The purpose of this study was to examine the effects of determinant factors on sustainable public procurement adoption in Uganda

The Research Objectives were:

1. To establish the relationship between procurement staff familiarity and sustainable public procurement adoption.
2. To determine the relationship between organizational incentives and sustainable public procurement adoption.
3. To assess the effect of procurement staff familiarity and organizational incentives on sustainable public procurement adoption.

Significance of the Study

This study has both theoretical and practical contributions. Theoretically, the study adds to the knowledge of determinants of sustainable public procurement adoption. Scholars and academicians will also find this study an invaluable source of reference material for future studies in the area for discussions in the field of sustainable procurement. Practically, the study will inform managers/directors, professionals, practitioners and policymakers in policy formulation and implementation, especially policy concerning sustainable public procurement adoption in Uganda to enhance the country's sustainable public procurement agenda. Lastly, from the national procurement perspective, the findings could improve overall PDEs' performance and image.

LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESES

Theoretical Underpinning

This study is anchored Freeman's (1984) Stakeholder Theory and Waring's (2015) Sustainability Theory. The stakeholder theory of Freeman (1984) that has been widely applied in a variety of disciplines, such as law, healthcare, public administration, environmental policy, business and ethics. The stakeholder theory suggests that if we adopt a unit of analysis of the relationships between the business (in our view, the entities) and the groups and individuals who affect or are affected by it, then we have a better chance to deal with organizational issues. It is about how customers, suppliers, employees, financers, communities and managers interact to create and trade value jointly (Freeman, 1984).

The theory holds a broad perspective about the role of a company in society as the organization is not only accountable to its shareholders but also to other stakeholders like the public or society directly or indirectly influenced by the company's action (Freeman 1984; Frooman,1997; Mathur,1997). An organisation is seen as a corporate citizen who must care and be obliged to a wide range of stakeholder groups within a society (Freeman,1984). The need for this extended responsibility arises from the fact that a business often produces externalities like negative social and environmental influences during its operations that impact internal and external stakeholder groups (Freeman,1984). For this reason, stakeholders put pressure on an

organization to reduce the negative externalities and play a positive role that benefits the natural environment and can enhance society (Fiorino & Bhan,2014).

The public sector, in particular, has to consider and involve stakeholders such as employees and suppliers, especially when ecological issues are introduced. The government usually creates environmental regulators as government agencies that have the autonomy to formulate environmental requirements and inspect the firm's compliance with those requirements, and those that fail to comply risk incurring non-compliance penalties. In aggregate, the above views point to the fact that there is a positive relationship between stakeholder pressures and sustainable public procurement practices. Integrating sustainability is driven mainly by the increasing stakeholder expectations from the improved ethical, transparent, accountable and responsible roles of organizations and firms in society (Bansal & Roth, 2000).

Stakeholder theory has initially centered on defining the stakeholder concept and classifying stakeholders into categories which provide stakeholder relationships. Three approaches are adopted in the literature: 1) a psychology-based approach of personalities in management and society (Ackerman and Alstott, 1999), 2) the effects of groups or individuals towards the achievement of an organization's goal (Freeman, 1984), and most recently; 3) the study of stakeholders in an inter-organizational setting in relation to power and collaboration (Henriques & Sadorsky, 1999). The motivation and inclusion of stakeholders in a PDE management setting reflect the current interest in the adoption of sustainable public procurement, where it is necessary to take a whole system. This idea fits with the interest in boundary-spanning and stakeholder networks that extend beyond the boundary of the firm.

Consideration of stakeholders, therefore, forms an integral part of procurement planning. Freeman (1984) attributes the source of an increasingly turbulent organizational environment to a change in the relationships between internal and external stakeholders. Furthermore, it has been understood that key stakeholders are critical to the success or failure of an organisational endeavour, which explains the rapid increase in critical evaluations of stakeholders' responsibilities. Although stakeholders have been the topic of heated debate in academia and the corporate world, there is surprisingly little literature on their role in procuring public activities. Nweze, (2016) stated in their work on 'Incrementalism: Eroding the Impediments to Global Procurement Markets' that the "fundamental issue of identifying and understanding the interests and priorities of the various stakeholders in public procurement—is a critical yet underexplored piece of the public procurement policy puzzle."

According to Eja and Ramegowda, (2020), many stakeholders can play an important role in the implementation of the SPP. Similarly, experts suggest that the political settlement is crucial to all improvements, and one that excludes influential people is more likely to stymie progress. Furthermore, because studies show that power is the most important aspect of any connection with stakeholders, extreme caution and monitoring are required when working with stakeholders that wield the most power, which are frequently elites. In conclusion, it is evident that engaging stakeholders is vital to success, and having a strategy for engagement is critical (Jeffery, 2009). It is important to note that "stakeholder engagement is an inexpensive and efficient way of creating a better operational environment for sustainable public procurement." The consultation process lowers risks and increases the likelihood of success (Ystems et al.,

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2008). Stakeholder engagement focuses on ensuring that all types of contact amongst government players, both interactive and non-interactive, are properly and efficiently managed in order to promote successful SPP adoption. Engaging stakeholders has become common practice in effective SPP implementation, with the only optional part being the 'choice of when and how to successfully' carry out the engagement (Gomes & Torres, 2004). Successful engagement is dependent on knowing why an organization is engaging (the goal), what issues to engage on (the scope), and who should be included in the engagement. Stakeholder involvement should be managed similarly to any other company function, with clearly stated objectives and targets, professional, dedicated people, and fixed timetables (Eja & Ramegowda, 2020).

The diversity of stakeholders and its facility for identifying and prioritizing conflicting requirements has rejuvenated interest in the literature of the possibilities of sustainable public procurement adoption. The stakeholder theory thus provides insight into stakeholders' relevance when integrating sustainability during procurement. In this case, stakeholders in PDEs involved during planning include all the user departments, the accounting officer, the contract committee, and the board/council as internal stakeholders, and external stakeholders such as suppliers, investors, customers, government media, NGOs, and environmentalists are the way to go. Otherwise, Ugandan PDEs will be unable to attain goals without including users, employees, suppliers, environmentalists, special interest groups and the media (Freeman, 1984). However, the exclusive use of ST may restrict thinking on how relationships between firms are affected beyond power, legitimacy, and urgency, where a response may need to include in-depth explanations about the precise nature of issues like sustainable public procurement.

Another vital perspective to this study is the sustainable theory, a modern theory developed by Professor Waring in 2015 was adopted to guide this study. As the Brundtland definition indicates, sustainability must seek a way to balance obligations to the present and the future (Brundtland, 1987; Lélé, 1991). Sustainability means “a capacity to maintain some entity, outcome, or process over time” (Bakir et al., 2018) and carrying out activities that do not exhaust the resources on which that capacity depends. Since this is a general understanding of sustainability, this meaning can be analogous to all human activities, including procurement.

This theory explains how and when human societies manage environmental resources sustainably. The authors of sustainability theory suggest that by encouraging the conditions for cooperation in environmental use, sustainable resource use can be grown. Thus, Waring proposes a recipe for how to grow sustainability, including groups at the scale of the resources they manage, a population of such groups, learning between groups, high stakes for group failure, and rules to support cooperation.

The proponents of this theory contend that to tackle the global sustainability crisis; societies need reliable and generalizable knowledge about the functioning and management of economic and social-ecological systems. Economic health, ecological integrity, social justice, and responsibility to the future must be integrated to address multiple global problems within a coherent, durable, and moral social vision. That inclusive scope and prospective vision make sustainability ideologically absorptive and politically popular.

Over the last decades, human activities have led to increasingly unfavourable climate changes, natural disasters, and socio-economic instability. These conditions have indicated changes in behaviour aiming towards more rational and efficient management of all resources that will allow less pressure and have less environmental impact. The immediacy of this need raises both the stakes and uncertainty of the science. Sustainability is important for understanding and developing our society (including business, government, and NGOs). Henceforth, public procurers must integrate social, economic and ecological issues into their procurement systems.

Environmental sustainability refers to the measurement of change in the resource base that supports existing populations (Russell et al., 1995). It focuses on maintaining the quality of the environment, which is necessary for conducting people's economic activities and quality of life. For example, use of energy-saving lighting systems, renewable energies, alternative energies such as solar, wind and water, maintaining fossil fuel levels, CO2 reduction, protection of ecosystems, pollution and waste management (Brammer et al., 2007).

Social sustainability relates to the soundness, richness and flexibility of organizations that govern access to and transmission of resources (Waring et al., 2015). It strives to ensure human rights and equality, preservation of cultural identity, respect for cultural diversity, race and religion, health and safety for publicly contracted construction workers, fair pay and labour law protections, disabled access in public buildings, employment opportunities for marginalized groups, working against child labour, gender equality, fair trade, and healthy lives and well-being for all (Brown, 2014).

Economic sustainability is the ability of a population and or organization to generate revenue to maintain itself in the economy and society (Russell et al., 1995). It emphasizes maintaining the natural, social and human capital required for income and living standards. For instance, procurement includes usage costs of electricity and water consumption, economic regeneration, value for money, poverty reduction, maintenance expenditures and disposal costs at the end of the product's life (Adjei, 2010; Preuss, 2009; UNOPS, 2012).

The relevance of sustainability theory to the study is that it can help PDEs achieve desirable economic and social-ecological states by improving the design of sustainable procurement interventions. The theory also provides measures of the dependent variable–Sustainable public procurement adoption. However, the theory has been critiqued for lack of conceptual clarity, emphasis on generational needs rather than human rights, lack of legal enforcement mechanisms, and a judgmental and sloganistic attitude (Vaezzadeh, 2014). The summary of the theories on which the study is anchored is presented in Table 1 below:

Table 1: Summary of theories underpinning the study

Theory	Author (s)	Year	The gist of the theory	Relevancy	Limitation (s)
Stakeholder theory	Freeman	1984	Stakeholder influence on organizational success	• Stakeholder inclusion in integrating	• Meeting the interests of a broad category of stakeholders

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				sustainability during proc't.	
Sustainable Theory	Waring	2015	Knowledge about the functioning and management of economic and social-ecological systems.	• Provides measures of the dependent variable–SPPA	• Absence of conceptual clarity • Priority placed on generational needs rather than human rights.

Source: Literature Review (2024)

Conceptualization of Determinant Factors

Determinants are explanatory variables of a given phenomenon or cause something happen or lead directly to a decision. A determining factor is one that increases and directs any activity (Perera & Coverson, 2012). One of the groundbreaking publications on the determinants of sustainable public procurement adoption was done by Gelderman et al. (2006). The study entitled "Public Procurement and European Union-directives explaining non-compliance" sought to categorize explanations of non-compliance of European Union tendering directives and report the impact of these reasons. A review of the literature identified three potential reasons for noncompliance: perceived inefficiency, purchaser familiarity with procurement rules, and organizational incentives to comply. Both purchaser familiarity with procurement rules and organizational incentives has a positive, statistically significant impact on compliance. Neither the stated inefficiency of the guidelines nor the anticipated supplier resistance appears to have an impact on compliance with the directives. However, the scope of this study is limited because it only examined the attitudes of purchasing experts inside the Dutch Ministry of Defense and disregarded other public agencies.

Bryngemark et al. (2023) used a survey of civil workers from 140 Swedish towns to study the factors of the adoption of sustainable public procurement. The bivariate ordered probit estimator results demonstrated a positive link between political variables, individual factors, organizational factors, and the adoption of sustainable public procurement. These data show that positive changes in political, individual, and organizational factors result in increased SPP adoption.

Nasiche and Ngugi (2014) conducted another study capturing the literature on determinants of sustainable procurement adoption. This study responded to the comments and recommendations of Gelderman et al. (2017). This study empirically examined and validated claims made and presented by Gelderman et al. (2017) based on the following variables: Organizations' green capacity, Cost of green products, incentives, and pressure and supply capacity. Data were collected using a semi-structured questionnaire from 90 civil servants directly involved in procurement. Findings revealed that the organization's green capacity, incentives and pressures are the main determinants of green Public Procurement adoption at KPC. The findings confirmed studies by earlier researchers on the subject while contradicting others at the same time.

Puspitasari et al. (2022) evaluated eight factors that affect the application of green public procurement in Indonesian hospitals by collecting data from 34 people involved in the procurement process. The eight factors included government policy, size of the organization, knowledge of environmental issues, cost of sustainable resources, operation methods, availability of eco-labelled products, supplier availability and environmental management. The results show that two of the eight (cost of sustainable resources and availability of eco-labelled products) significantly affect the implementation of green public procurement.

In the same vein, Gelderman et al. (2017) investigated the actors and factors that influence the speed of implementation of sustainability initiatives in four public healthcare organizations in The Netherlands. Semi-structured interviews were used to collect data from top management, budget owners and procurement professionals. Results implied that top management assigned strategic importance to sustainability initiatives, and budget owners had the final say in implementation. Procurement professionals had very little influence on the implementation process of sustainability. This study segregated determinants of SPP into internal and external factors. Their study, however, was limited to the perspectives of institutional top management, budget owners and procurement professionals. They recommended that researchers focus on external stakeholders and their impact on sustainability initiatives.

Ochieng (2019) wrote an article about sustainable practices in Kenyan water sector institutions. According to the survey, the urge to comply with new legislation, client expectations, cost reduction to manufacture more inexpensive goods and services, and cost reduction to operate were the primary influencers for sustainable procurement methods. However, this study lacks the theoretical foundation to adequately comprehend the phenomenon. In addition, Grandia and Kruyen (2020) evaluated the impact of Ability, Motivation, and Opportunity on implementing sustainable public procurement in the Netherlands. This study emphasizes that the multidimensionality of SPP necessitates a multimodal and tailored response. However, in this study, they failed to identify and include an antecedent of the more social nature of SPP. As a result, they advocated for additional investigation.

Ngunjiri (2019) studied the factors affecting the implementation of green public procurement in Laikipia County, Kenya. This study aimed to evaluate the factors affecting the implementation of Green Public Procurement in the Laikipia County government. The study established that the knowledge gap (0.561) and buyer's perception of GPP (0.143) positively affected GPP implementation, with the knowledge gap as the major. This study added knowledge to the existing data on determinants of sustainable public procurement adoption. However, this, being a single case study, makes generalization problematic.

Using a case study, Aldenius and Khan (2017) investigated the factors influencing the adoption of sustainable public procurement in Sweden. The project sought to promote renewable fuels in public bus transportation networks through public procurement. The findings demonstrated that business size, costs, knowledge, and information are all critical factors in the adoption of sustainable public procurement.

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A survey study conducted by Plaček et al. (2023) on the attitudes and perception of green public procurement, which paid particular attention to education, training and information sharing of managers in the Czech Republic, indicated that sharing experiences is a more critical factor in shaping manager's attitudes towards sustainable public procurement than education and training.

Some of the established determinant-sustainable public procurement relationships are presented in Table 2 below.

Table 1: Determinants of Sustainable Public Procurement Adoption

Determinant	Relationship	Studies identified
Purchaser's familiarity with sustainable procurement	+	Brammer and Walker 2011; Nasiche and Ngugi; 2014.
political factors, individual factors, organizational factors	+	Bryngemark et al. (2023)
Perceived cost/benefits	+	Ochieng, 2019; Aldenius and Khan, 2017
	-	Nasiche and Ngugi; 2014
Organizational incentives/pressures	+	Brammer and Walker 2011
	-	Nasiche and Ngugi, 2014
Supplier availability/resistance	+	Brammer and Walker 2011; Nasiche and Ngugi; 2014.
Top management	+	Brammer and Walker, 2011; Ehrgott et al., 2011; Bowen et al., 2011; Paulraj, 2011.
Budget owners	+	Ehrgott et al., 2011; Bowen et al., 2011; Paulraj, 2011.
Procurement professionals	+	Gelderman, Janjaap and Vluggen, 2017; Ehrgott et al., 2011; Bowen et al., 2011; Paulraj, 2011; Ochieng, 2019.
Regulations/rules	+	Ochieng, 2019; Brammer and Walker 2011
Client expectations	+	Ochieng, 2019.
Cost of production	+	Ochieng, 2019; Ochieng, 2019, Aldenius and Khan, 2017.
Ability	+	Walker et al,2015; Grandia, 2019.
Motivation	+	Walker et al,2015; Grandia, 2019
Opportunity	0	Walker et al,2015; Grandia, 2019.
Knowledge	+ (0.561)	Ngunjiri, 2018; Grandia,2015; Grandia, Gelderman, Janjaap and Vluggen, 2017; Ehrgott et al., 2011; Bowen et al., 2011; Paulraj, 2011; Ochieng, 2019, Aldenius and Khan, 2017.
Buyers' perception	+ (0.143)	Ngunjiri, 2018; Grandia, 2017;
Firm size	+	Aldenius and Khan, 2017
Information sharing, Education and Training	+	Plaček et al. (2023)
Cost of sustainable resources, Availability of eco-labelled products.	+	Puspitasari et al. (2022)

Source: Literature review, 2024

(+) = positive relationship, (-) = negative relationship, (0) = no relationship

Based on the examination of the articles in Table 2 above, it can be deduced that there are many determinants of sustainable public procurement adoption. The question that arises is, how does an entity know all the determinants and operationalize them to realize sustainable public procurement adoption? This attests to the complexity of the phenomenon of sustainable public procurement. Notably, available literature shows that research focuses on three major variables influencing sustainable public procurement adoption: procurement perceived costs/benefits, procurement staff familiarity with sustainable procurement, and organizational incentives/pressures (Brammer & Walker, 2011). Thus, for thorough examination and validation, in this study, we considered procurement staff familiarity (PSF), and organizational incentives (OGI).

Procurement Staff Familiarity and Sustainable Public Procurement Adoption

Procurement staff familiarity (SFM) refers to the level of knowledge and experience procurement professionals have with their suppliers, markets, and ethical standards. Staff familiarity in this context refers to how well procurement staff are educated and experienced in ethical standards, regulations, and practices that shape procurement decisions (Giménez & Sierra, 2020). It denotes staff knowledge and information about sustainable products, legislation, knowledge/expertise, competence, leadership, and sustainable procurement plans (Brammer & Walker, 2011).

The relationship between staff familiarity and sustainable procurement has been examined extensively. For instance, Grandia and Voncken (2019) established that individual-level factors, such as knowledge and skills, influenced sustainable public procurement adoption in the Netherlands. De Giacomo et al. (2019) Similarly, procurers must be aware of sustainable public procurement processes and understand how to implement appropriate rules and regulations.

The study by Sönnichsen and Clement (2020) found that operational and information tools were key in establishing environmental criteria in public procurement, while Walker & Brammer (2009) found that the main problem limiting the adoption of green public procurement was a lack of information about the real environmental impacts of the products, difficulty in the preparation of call for tenders and purchasing, and lack of guidelines.

Furthermore, Delmonico et al. (2018) argue that well-trained and skilled employees outperform those who are not trained. We believe a comparable mechanism exists in the implementation of sustainable public procurement. Walker and Brammer (2009) argue that procurers must be knowledgeable about sustainable procurement and adequate communication to assist in operationalizing policies. According to Brammer and Walker (2011), for an entity to effectively implement sustainable procurement, it is necessary to understand the concept of sustainable procurement and related government policies. Organizations need the skills, competencies and tools necessary to make sustainable procurement happen. Sustainability is a contested and complex concept, and procurement professionals may lack the skills and knowledge to implement it successfully.

A survey carried out by Delmonico et al. (2018) found that 83 per cent of purchasing professionals considered themselves ill-equipped to deliver sustainability through procurement. Studies have also found that purchasing managers are unsure of how to

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incorporate ethical and social issues in their buying (Sönnichsen & Clement, 2020). Based on these views, the link between familiarity with sustainable procurement and sustainable public procurement adoption can be hypothesized as:

- **Hypothesis 1:** There is a positive relationship between procurement staff familiarity and sustainable public procurement adoption.

Organizational Incentives and Sustainable Public Procurement Adoption

Organizational incentives (OGI) refer to measures such as salaries, secondary benefits, intangible rewards, recognition or sanctions designed and established to influence the motivation and behaviour of individuals, groups or organizations. Remarkable efforts have been made to develop measures for organizational incentives (Bansal & Roth, (2000); Padron et al., (2008); Brammer & Walker, 2011; Gelderman et al., 2017; Grandia & Voncken, 2019). For instance, Brammer and Walker (2011) operationalized organizational incentives on four indications: support from senior managers, directives from top management, and organizational processes and procedures. Conversely, Gelderman et al. (2017) operationalized the construct using three dimensions: motivation, commitment and opportunity.

Several studies have shown that organizational support is one of the factors used in achieving the implementation of innovative practices such as sustainable public procurement in every nation (Kagoya & Mbamba, 2020). Employees are assets of an organization and influence sustainability. Organizations today apply innumerable strategies to retain, motivate and recognize the efforts of their employees by providing rewards or incentives that enable them to contribute positively to the organisation (Asare, 2019). The incentives can be in the form of funds, donations, budget allocations, rewards and tools. Pakdeechoho and Sukhotu (2018), for example, used 215 food manufacturing enterprises to investigate the relationship between incentives and sustainable supply chain collaboration in Thailand. Exploratory component analysis, hierarchical regression analysis, and cluster analysis were used to test hypotheses. The findings revealed that incentives provided by supply chain organizations boost efforts for long-term supply chain collaboration. These findings offer managers and policymakers significant insights on how to employ incentives to promote individual firm sustainability.

Grandia and Voncken (2019), in yet another study, assessed the influence of talent, ambition, and opportunity on sustainable public procurement in the Netherlands using an online survey administered amongst procurers working in Dutch Public organizations, revealed that ability and motivation affect the uptake of sustainable public procurement, but opportunity does not affect SPP. Similarly, de Mello Brandão Vinholis et al. (2021), who investigated the effect of meso-institutions on the adoption of sustainable agricultural technology using a sample of 175 farmers in Brazil, discovered that economic incentives The information provided by meso-institutions had a statistically significant impact on the likelihood of implementing sustainable integrated crop-livestock systems.

Gelderman et al. (2017) highlighted the need for corporation incentives. They argued that incentives are an indicator of an organization's attitude towards sustainability development and the extent to which there is a positive environment for sustainable procurement. In addition, a lack of incentives is a major challenge to implementing sustainable initiatives. Moody-Stuart and Quotes (2002) argue that the process of talking about, identifying and

specifying the many benefits of sustainable development might be potentially the most valuable part of embracing sustainability by stimulating interpersonal and inter-organizational contacts.

According to Björklund (2011), the degree to which green procurement is implemented in organizations concerns organizational attitudes and incentives for green public procurement. He contends that in the public sector, procurement officers are the agents of the principal (the state) to realize the goals of the state. Therefore, the agent's goals must conform with those of the principal (the state) to achieve efficient reform in the public procurement programme. Without high-level support, employees are often unwilling or unable to pursue GPP initiatives. In the same vein, Gelderman et al. (2017), who studied actors and factors that influence the speed of implementation of sustainability initiatives in the Dutch public sector procurement using semi-structured interviews, established that top management support in the form of motivation and or incentives is of strategic importance to sustainability initiatives. To this end, we hypothesize that:

- **Hypothesis 2:** Organizational Incentives positively associate with sustainable public procurement adoption.
- **Hypothesis 3:** Procurement staff familiarity and organizational incentives have a positive effect on sustainable public procurement adoption.

Summary and Research Gaps

Extant literature has created the impression that sustainable public procurement is complex to understand. Findings from meta-analysis of sustainable public procurement determinants have shown contradictions, controversies, fragmented details, and a lack of assimilation, synthesis and consensus on the crucial determinants of sustainable public procurement adoption (Meehan & Bryde, 2011; Brammer & Walker,2011; Grandia et al., 2014; Vluggen et al.,2020). Additionally, most of the previous studies have been done in the developed world, yet sustainable procurement is claimed to be the least understood in the least developed and developing countries like Uganda (Kalubanga, 2012). Additionally, previous research mostly used exploratory designs, analytical designs, convenient sampling methods, cluster sampling, and purposive sampling methods with either qualitative or quantitative paradigms, as well as basic analysis methods such as narrative, thematic, descriptive and some correlational analyses (Brammer et al., 2007; Brammer & Walker, 2011; Grandia et al., 2014b; Vluggen et al., 2020). Thus, this current study attempts to bridge some of the gaps by 1) conducting this study in Uganda, a developing country in Africa, to attempt to improve, confirm, and promote generalizability of research findings, since different countries have different economic, social, and environmental settings; 2) attempt using multiple indicators to measure SPP; 3) trying to fit procurement staff familiarity and organizational incentives as independent variables into sustainable public procurement adoption model.

The Conceptual Framework

The conceptual framework expresses the relationship between, procurement staff familiarity, organizational incentives and sustainable public procurement adoption. The independent variables are procurement staff familiarity and organizational incentives. While, the dependent variable is sustainable public procurement adoption as portrayed in figure 1 below:

INDEPENDENT VARIABLES **DEPENDENT VARIABLE**

URL: http://doi.org/10.14738/abr.1303.18459

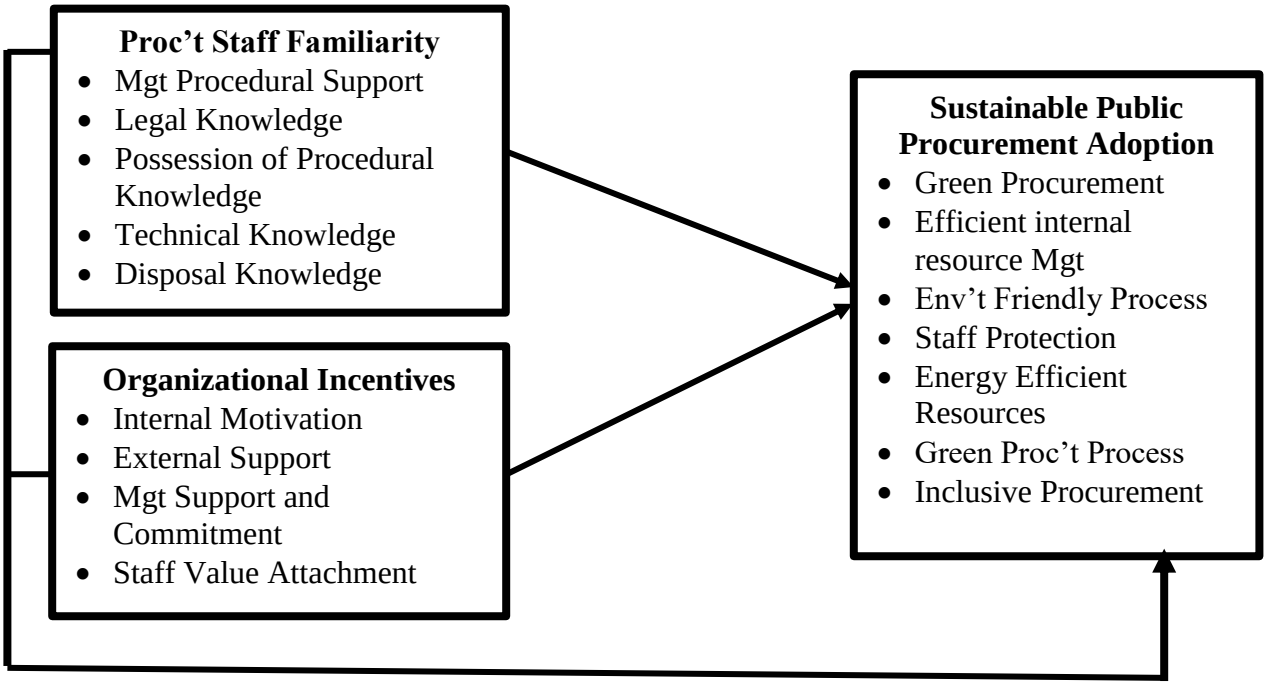

Figure1: The effect of procurement staff familiarity and organizational incentives on sustainable public procurement adoption.

Source: Adopted and modified from Brammer and Walker (2011), Grandia and Voncken (2019), Jaafar et al. (2016) and Raj et al. (2020).

The hypothesized model is built on the assumption that there is a relationship between determinant factors and sustainable public procurement adoption which is expressed as:

$$Y = \beta_0 + \beta_1\chi_1 + \beta_2\chi_2 + \beta_3\chi_3$$

Where:
Y = the dependent variable (Sustainable public procurement adoption)
χ = the independent variables (Determinant factors)
β_0 = a constant
β = parameters to be estimated
χ_1 = procurement Staff Familiarity, χ_3 = Organizational Incentives

METHODOLOGY

A descriptive cross-sectional research design was adopted in this study. The target population consisted of 790 civil servants from 79 central government procuring and disposing entities (UBOS, 2023). The 79 central government procuring and disposing entities ministries, hospitals, commissions and parastatals that spend over 75% of the national budget on procurement (MOPFED, 2023). A sample size of 302 employees based on Krejicie and Morgan's (1970) table for determining sample size was used. A stratified sampling technique was used to obtain the required sample for the study. The respondents encompassed Principal procurement officers, Senior procurement officers, Procurement officers, Assistant procurement officers, Inventory Managers, Assistant Inventory Managers, and Procurement Committee Members.

Primary data were collected using a five-point Likert scale questionnaire ranging from strongly disagree to agree with close-ended questions. To obtain comprehensive and conclusive results, this study adopted a four-stage analysis process. First, a descriptive analysis was performed to understand demographic characteristics of the respondents. Second, exploratory factor analysis (EFA) to identify a relatively small number of factors was carried out using Statistical Package for Social Sciences (SPSS). Third, confirmatory factor analysis (CFA) using analysis of moment structures (AMOS) was conducted to ascertain the constructs' dimensionality and confirm the underlying factor structures for further structural analyses. Lastly, structural equation modelling was performed to establish the predictive power of the independent variables on the dependent variable.

ANALYSIS AND RESULTS

Descriptive Statistics

The descriptive statistics of the respondents is displayed in Table 3 below;

Table 3: Demographic Characteristics of Respondents

S/No	Demographic Variable	Frequency	Percentage
1	**Gender of the Respondents:**		
	Female	97	38.1
	Male	158	61.9
	Total	**255**	**100**
2	**Age Category:**		
	25-30 Yrs	58	22.6
	31-36 Yrs	54	21.3
	37-42 Yrs	58	22.6
	43-48 Yrs	49	19.4
	49-54 Yrs	35	13.5
	55 Yrs Above	1	0.4
	Total	**255**	**100**
3	**Duration of time served in the entity:**		
	LESS THAN 4YRS	53	20.9
	5-9YRS	92	35.6
	10-14YRS	49	19.4
	15-19YRS	33	13.2
	20-24YRS	18	7.3
	25YRS ABOVE	10	0.3
	Total	**255**	**100**
4.	**Education level:**		
	DIPLOMA	53	20.6
	BACHELOR'S	161	63.3
	MASTER'S	38	14.8
	PhD	3	1.3
	Total	**255**	**100**
5	**Job designation/post:**		
	Procurement Officer	128	50.2
	Inventory Manager	41	15.9
	Assistant Procurement	58	22.5

	Assistant Inventory Manager	15	5.8
	Contract Committee Member	13	5.1
	Total	255	100

Source: Primary data (2024)

The characteristics of the respondents were extensively captured as shown in Table 3 above. The coverage of the characteristics included gender, age, duration of time served in the entity, education level, and job designations, as presented in in table 3 below. These features were captured in order to understand the kind of respondents who participated in the survey (De Vous, 2002). The findings revealed that most of the respondents, 158 (62%) were males, compared to female who were 38%. Respondents belonging to the age category of 25- 42 years were 170 in number, making 68.5%. The least represented age group is 55 years and above, with only 1 respondent, making 0.4%. Regarding length of time served, most of the respondents had served between 5-9 years, making about 36%. Implying that they have the experience of what is going on int the PDES. Most of the respondents, 161(63%), possess bachelor's degree, thus the basic qualification for performing procurement activities. Master Degree holders formed 15%. Only 3(1.3%) held PhDs. Lastly, most of the respondents 169(66%) occupy managerial positions in procurement related activities. Meaning, they are involved in strategic issues such as procurement panning, sourcing and supplier development. This was followed by assistant procurement managers, who were 73 in number, making 28%. The 5% fall in the category of inventory assistants and contract committee members.

Descriptive statistics of the entities that participated in the study is presented in Table 4 below;

Table 4: Characteristics of Entities

S/No.	Characteristic Variable	Frequency	Percentage
1	**Entity Location:**		
	CENTRAL	133	52.3
	WESTERN	41	16.1
	NOTHERN	35	13.5
	EASTERN	46	18.1
	Total	**255**	**100**
2	**Number of Staff:**		
	1-50	16	6.5
	51-100	31	8.4
	101-150	39	9.0
	151-200	35	13.5
	200 ABOVE	143	56.1
	Total	**255**	**100**
3	**Category of Entity:**		
	MINISTRY	97	37.4
	COMMISION	37	14.8
	HOSPITAL	72	28.3
	PARASTATAL	49	19.4
	Total	**255**	**100**

Source: Primary data (2024)

To capture the characteristics of the entities that participated in the survey, simple descriptive statistics was performed. The characteristics featured included: physical location of the entity, number of staff in the entity, category of the entity in the central government structure, and sector/industry that the entity belongs to. Table 4 presents the details. The statics indicated that most 133(52%) of the entities that participated in the survey are located in the central region of the country. Geographically, Uganda's central region lies in the south, but politically, it is considered "central Uganda" because it is where the capital city and central government entities are located. The entities concentrate in the central region to benefit from the good economic infrastructure. With regards to the size of the entities, based on the number of staff, most 143(56%) of the entities have staff number ranging from 151-200 and above, a typical characteristic of a public procuring and disposing entity (PDE). Those entities with staff ranging from 50-150 make about 31%. while, entities with less than 50 staff make 6.5%. As concerns the category of the entities, most of the entities 97(37%) belonged to a ministry, followed by hospitals 72(28%). Parastatals were in 49 in number, making 19%. The least entities (15%) belonged to the commission category.

Descriptive Statistics for all the Study Variables

Table 5: Descriptive statistics for all the variables

Constructs	Mean	Std. Dev.
Procurement Staff Familiarity (PSFM)	3.622	0.640
Organizational Incentives (OGIS)	3.262	0.613
Sustainable Public Procurement Adoption (SPPA)	3.564	0.537

Source: Primary data (2024)

This study adopted a 5-point Likert scale to measure the construct items, where: 1 is 'strongly disagree', 2 is 'disagree', 3 is 'neither agree nor disagree', 4 is 'agree' and 5 is 'strongly agree'. The mean and the standard deviation of the constructs were computed and the summary of averages presented in Table 5 above. The analysis indicates that respondents agreed with questionnaire items, as were presented. The mean value ranged from 3.262 (Organizational Incentives) to 3.622 (Procurement Staff Familiarity). The mean standard deviation ranged from 0.537 (Sustainable Public Procurement Adoption) to 0.640 (Procurement Staff Familiarity).

Reliability and Validity Tests

The validity and reliability results of the study variables are presented in the Table 6 below;

Table 6: Summary of Validity and Reliability of Study Variables

Variable	Validity Coefficient (CAC)	Cronbach's Alpha Coefficient (CAC)
Procurer/staff Familiarity (PSFM)	0.568	0.786
Organizational Incentives (OGIS)	0.535	0.728
Sustainable Public Proc Adoption (SPPA)	0.557	0.702

Source: Primary data (2024)

The validity and reliability of the study variables tests were conducted on the study variables to ascertain whether the variables were understood by the respondents. The reliability was checked by computing the Cronbach's Alpha coefficient. A threshold of 0.7 was considered.

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Validity was tested using Average Variance Explained (AVE). A threshold of 0.5 was considered. The results are presented in Table 6 above. According to results, all the four study variables had AVE and Cronbach's Alpha coefficients above the cut-off points above the as recommended by Hair (2010). Thus, were valid and reliable.

Exploratory Factor Analysis

Exploratory factor analysis results using principal component analysis method are displayed in the Table 7 below;

Table 7: Total Variance Explained (Eigenvalues)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	8.575	12.992	12.992	8.575	12.992	12.992	6.258
2	4.548	6.891	19.883	4.548	6.891	19.883	3.611
3	3.628	5.496	25.379	3.628	5.496	25.379	3.717
4	3.032	4.594	29.973	3.032	4.594	29.973	3.305
5	2.152	3.260	33.233	2.152	3.260	33.233	3.741
6	2.066	3.131	36.364	2.066	3.131	36.364	3.228
7	1.902	2.882	39.246	1.902	2.882	39.246	3.575
8	1.769	2.680	41.927	1.769	2.680	41.927	3.579
9	1.681	2.547	44.473	1.681	2.547	44.473	2.226
10	1.626	2.464	46.937	1.626	2.464	46.937	3.114
11	1.533	2.323	49.260	1.533	2.323	49.260	2.644
12	1.477	2.237	51.497	1.477	2.237	51.497	2.525
13	1.423	2.157	53.654	1.423	2.157	53.654	2.428
14	1.337	2.026	55.680	1.337	2.026	55.680	2.331
15	1.276	1.933	57.613	1.276	1.933	57.613	2.167
16	1.240	1.879	59.491	1.240	1.879	59.491	2.331
17	1.162	1.760	61.252	1.162	1.760	61.252	1.957
18	1.130	1.712	62.963	1.130	1.712	62.963	2.255
19	1.016	1.540	64.503	1.016	1.540	64.503	1.574

Extraction Method: Principal Component Analysis.

In total, 64.5% of the variance is explained by the nine factors extracted. Eigenvalue 1 and above was considered for the factors to be extracted as displayed in Table 7 above.

Rotated Component Matrix of The Retained Items

The results of the retained items are presented in Table 8 below;

Table 8: Rotated Component Matrix[a]

Factors	1 PSFM	2 OGIS	3 SPPA
FM1	.603		
FM3	.807		
FM4	.733		
FM5	.600		
FM6	.795		
FM12	.698		
FM13	.731		
FM14	.578		
FM15	.694		
FM16	.638		
FM17	.755		
FM19	.691		
OI1		.778	
OI2		.760	
OI4		.645	
OI5		.774	
OI6		.674	
OI7		.561	
OI8		.568	
OI9		.681	
OI10		.677	
OI11		.611	
OI12		.755	
SPA1			.904
SPA2			.808
SPA3			.778
SPA5			.606
SPA6			.714
SPA7			.888
SPA8			.698
SPA9			.794
SPA10			.663
SPA12			.801
SPA13			.958
SPA15			.728
SPA17			.653
SPA18			.706
SPA20			.509

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 13 iterations.

Accordingly, 10 items were rejected: Under procurement staff familiarity (PSFM): FM2, FM7, FM8, FM9, FM10, FM11 and FM18. Under organizational incentives (OGIS): OI3, and under sustainable public procurement adoption (SPPA): SPA4, SPA11, SPA14, SPA16 and SPA19.

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While a total of 40 items were retained and they included FM1, FM3, FM4, FM5, FM6, FM12, FM13, FM14, FM15, FM16, FM17 and FM19; OI1, OI2, OI4, OI5, OI6, OI7, OI8, OI9, OI10, OI1 and OI2; SPA1, SPA2, SPA3, SPA5, SPA6, SPA7, SPA8, SPA9, SPA10, SPA12, SPA13, SPA15, SPA17, SPA18, and SPA20 respectively as shown in Table 8 above.

Confirmatory Factor Analysis

After EFA, confirmatory factor analysis was carried out to test model fit for each variable that was considered in the study. The CFA results highlighted six (6) additional indicators of procurement staff familiarity for deletion in addition to the five (5) that were deleted at the EFA phase, thus, retaining FM4, FM5, FM6, FM8, FM9; FM10 and FM11; four (4) additional indicators of organizational incentives were deleted in addition to the one (1) that was deleted at the EFA phase, hence, leaving OI1, OI5, OI6, OI8, OI9, OI10 and OI1 were retained; and eight (8) additional indicators of sustainable public procurement adoption deleted in addition to the five (5) that were deleted at the EFA phase, retaining SPA1, SPA2, SPA5, SPA7, SPA10, SPA17, SPA18, and SPA20.

Measurement Model

The underlying factor structure of the measurement model conducted using AMOS-SPSS inbuild tool are displayed in Figure 2 below;

χ^2 = 209.714, *df* = 146, *p* = 0.000, GFI = .910, IFI = .921, TLI = .903 CFI = .943, RMSEA = .074, PNFI = .555

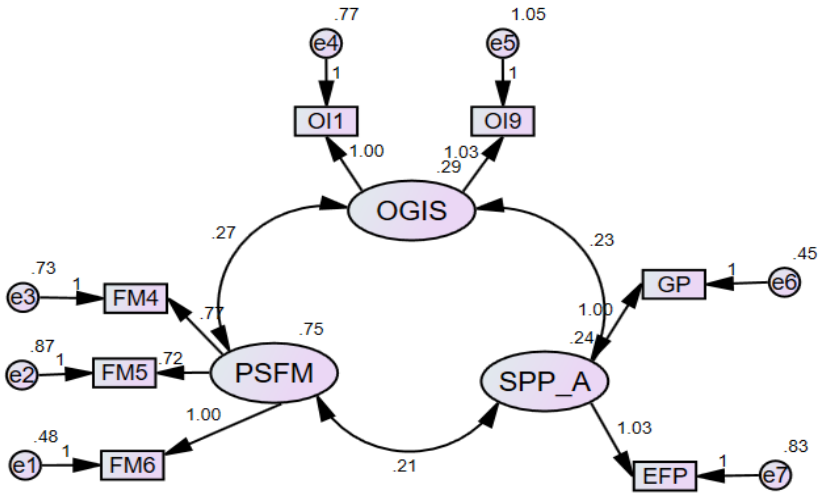

Figure 2: The Measurement model for the study Variables

The measurement model in this study was assessed using Chi-Square, p-value and root-mean-square error of approximation (RMSEA), comparative fit index (CFI), Tucker–Lewis Index (TLI); parsimony normed fit index (PNFI) and goodness fit index (GFI) as proposed by Meyers et al. (1990). The cut-off points adopted for the assessment were: Normed Chi-Square (CMIN) = < 5, CFI = > 0.9 (Bentler, 1990); RMSEA = < 0.08 (Byrne, 2010), TLI and PNFI with thresholds of .90 and .50 respectively (Meyers et al., 1990). Hair et al. (2010) suggest that 3 to 4 fit indices should be used to assess model fit.

It was observed from the assessment results in Figure 2 that the fit indices support the specified proposed model. The baseline model appropriate indices obtained were: Chi-square = 215.914 (more than 5), p-value = 0.000 (less than 0.05), CFI = 0.939 (more than 0.90), RMSEA = 0.064 (less than 0.08), TLI = 0.924 (more than 0.90), IFI = 0.940 (more than 0.90) and PNFI = 0.689 (more than 0.50), hence the model is considered. The fitting of this model meant a match between the data and the hypothesized model (Meyers et al., 2006). Based on Mueller and Hancock (2018), a fitting measurement model institutes high chances of a fitting structural model.

Correlation Analysis

Pearson correlation coefficient was conducted to establish the strength of the relationships between the study variables as hypothesized from literature review. The results are presented in Table 9 below;

Table 9: Correlation Analysis Results

Variables	1	2	3
Procurement staff Familiarity (1)	1		
Organizational Incentives (2)	.318**	1	
Sustainable Public Procurement Adoption (3)	**.286****	**.381****	1

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

Results in Table 9 above have demonstrated positive and significant relationship between procurement staff familiarity, organizational incentives and sustainable public procurement adoption. Specifically, the results denote a significant positive relationship between procurement staff familiarity and sustainable public procurement adoption (r= .286**). Organizational incentives have also a significant positive relationship with sustainable public procurement adoption (r= .381**). The findings imply that a unit increase in procurement staff familiarity and organizational incentives lead to an increase in sustainable public procurement adoption.

Regression Analysis

To establish the contribution by the independent variables on the dependent variable, a spearman's regression analysis was done. The results are presented in Table 10 below;

Table 10: Regression Analysis Results

Coefficients[a]							
Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**	**Collinearity Statistics**	
	B	**Std. Error**	**Beta**			**Tolerance**	**VIF**
(Constant)	.793	.297		2.674	.000		
Procurement Staff Familiarity	.104	.050	.119	2.071	.039	.868	1.152
Organizational Incentives	.107	.056	.124	1.899	.044	.674	1.483
	R Square = .281, Adjusted R Square = .273, F= 36.717, Sig.= .000						
Dependent Variable: Sustainable public procurement adoption							

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Source: Primary data (2024)

The regression results in Table 10 above indicate that all the independent variables (*procurement staff familiarity and organizational incentives*) had a significant influence on the dependent variable sustainable public procurement adoption. Organizational incentives that had the highest influence on sustainable public procurement adoption with a Beta= 0.124 and P< 0.01, which was significant at P<.000, meaning accounted for 12.4%. followed by procurement staff familiarity explained 11.9% of the variation in sustainable public procurement adoption (Beta = 0.119, P = 0.03), which was significant. Considering the overall prediction level of the model, the results indicate 27.3% change in sustainable public procurement adoption is contributed by the independent variables of procurement staff familiarity and organizational incentives. This means that 72.7% contribution is done by other factors other than in the model.

Structural Equation Model

Structural Equation Modeling was conducted using AMOS to establish the independent variables' predictive power on the dependent variable. The results are presented in figure 3 below;

χ^2 = 32.5 *df* = 11, *p* = 0.000, CMIN = 211.661, GFI = .950, IFI = .930, TLI = .933, CFI = .927, RMSEA = .069, PNFI = .547

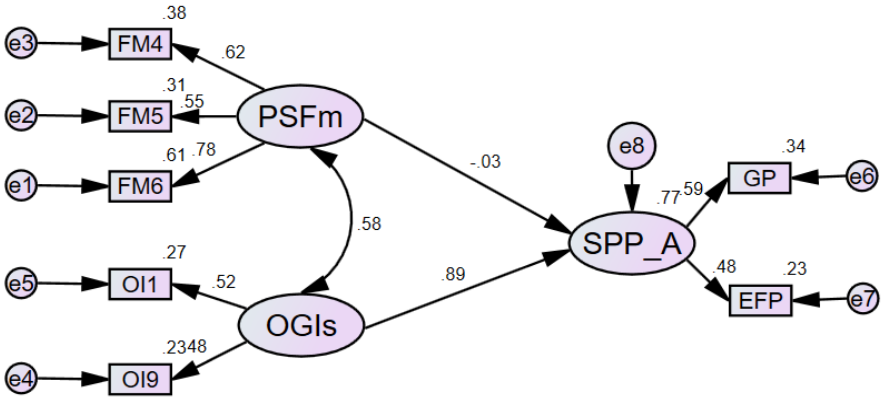

Figure 3: SEM results – path analysis for the model

Model Fit Indices

The model fitting results indicated a good fit based on the specified assessment criteria. The results are presented in Table 11 below.

Table 11: Fit Indices Criteria Compared to Baseline Model Results

GoF Category	Fit Index	Threshold	Result	Comment
Absolute fit	χ2 - CMIN	χ2 >5	211.661 (144)	Achieved
	GFI	>.90	.950	Achieved
	RMSEA	<.08	.069	Achieved
Relative fit	CFI	>.90	.927	Achieved
	TLI	>.90	.933	Achieved
	IFI	>.90	.930	Achieved

Parsimonious fit	PNFI	>.5	.547	Achieved

Source: Primary data (2024)

The Predictive Power of the Independent Variables

In order to establish the prediction power of the independent variables of procurement staff familiarity and organizational on the dependent variable sustainable public procurement adoption, regression weights from the SEM default model were extracted. The results are presented in Table 12 below;

Table 12: Regression weights: (Group number 1-Default model)

			Estimate	SE.	CR.	P
SPPA	<---	PSFM	-.037	.933	-.888	.122
SPPA	<---	OGIS	.894	.352	.629	.000

Source: Primary data (2024)

The regression weights as displayed in Table 12 indicate that organizational incentives (OGIS) are a significant predictor of sustainable public procurement adoption with a p-value of 0.000 (less than 0.05). However, procurement staff familiarity (PSFM), p-value = 0.122 (more 0.05) is not significant predictor of sustainable public procurement adoption.

Table 13: Decisions on the study hypotheses

Label	Hypothesis	P-Value	Decision
H1	There is a positive relationship between procurement staff familiarity and sustainable public procurement adoption.	β = -.037, P= .122 > .05	Reject
H2	Organizational Incentives positively associate with sustainable public procurement adoption.	β=.894, P = .000< .05	Accept
H3	Procurement staff familiarity and organizational incentives have a positive effect on sustainable public procurement adoption.	Adjusted R^2 =.273, P= .000 < 0.05	Accept

Source: Primary data (2024)

DISCUSSION OF FINDINGS

The results revealed positive and significant relationship between procurement staff familiarity, organizational incentives and sustainable public procurement adoption. Specifically, the results denote a significant positive relationship between procurement staff familiarity and sustainable public procurement adoption (r= .286**). This implies that a unit change in procurement staff familiarity leads to a unit change in sustainable public procurement adoption. These findings corroborates with the study findings of Grandia and Voncken (2019) who established that individual-level factors, such as knowledge and skills, influenced sustainable public procurement adoption in the Netherlands. Similarly, a study by Sönnichsen and Clement (2020) found that operational and information tools were key in establishing environmental criteria in public procurement. Organizational incentives have also a significant positive relationship with sustainable public procurement adoption (r= .381**). This implies that a unit change in organizational incentives leads to a unit change in sustainable public procurement adoption. These findings are agreement with the study findings of Kagoya and Mbamba (2020) who have shown that organizational support is one of the factors used in achieving the implementation of innovative practices such as sustainable public procurement in every nation.

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In regard to the study variables' predictive ability, results (Table 12) demonstrate that Organizational incentives have influence sustainable public procurement adoption (β=.894, P = .000 < .05) and thus contribute to variance in sustainable public procurement adoption by 89.4%. This infers that when organizations engage in motivational practices such as internal and external support, management commitment and staff value attachment, staff would be motivated to adopt sustainable public procurement. Furthermore, the study results indicate that the independent variables together contribute 27.3% change in sustainable public procurement adoption at a significance of .000 and F. statistics of 36.717. The structural equation modelling (SEM) analysis also confirmed the combined effect of the independent variables on sustainable public procurement adoption with a CMIN/DF = 211.66, GFI = 0.950 AGFI = 0.901, IFI = 0.930, CFI = 0.927, PNFI = 0.547 and RMSEA=.069. Implying that, procurement staff familiarity and organizational incentives together have a positive effect on sustainable public procurement adoption. These findings are consistent with the study findings of Olsson et al. (2021) who assert that procurers who understand sustainability concepts, receive sustainable procurement training are more prepared to make educated decisions that are consistent with environmental, social, and economic goals. Again, the findings corroborate with the study findings of Loughlin et al. (2023) who aver that financial incentives like performance bonuses or money for sustainability programs, recognition and job security help procurement officers prioritize sustainability in their purchase decisions. Regarding hypotheses, study H1, stating that there is a positive relationship between procurement staff familiarity and sustainable public procurement adoption was rejected. H2 and H3 stating organizational incentives positively associate with sustainable public procurement adoption, and procurement staff familiarity and organizational incentives have a positive effect on sustainable public procurement adoption respectively were accepted (Table 13).

CONCLUSION

This study sought to establish whether procurement staff familiarity and organizational incentives have an effect on sustainable public procurement adoption in Uganda. Results have shown that procurement staff familiarity and organizational incentives have effect on sustainable public procurement adoption. Specifically, the findings have indicated that organizational incentives are a significant predictor of sustainable public procurement adoption at 89.4%. Therefore, we conclude that both procurement staff training and organizational incentives affect the uptake of sustainable public procurement practices.

IMPLICATIONS OF THE STUDY

The government of Uganda and procuring and disposing entities should invest in procurement staff training, specifically train staff on sustainable procurement procedures, policies, laws and regulations and technical requirements. Organizational incentive such as internal motivation management support and commitment, and staff value attachment be practiced to build the confidence and encourage commitment to participate in sustainable public procurement practices. Theoretically, given the need for sustainable public procurement in the diaspora and Uganda in particular, this study offers the understanding of a holistic view of sustainable public procurement from the public procurement perspective and this is relevant for the private sector and academicians.

LIMITATIONS OF THE STUDY

The study's findings should be viewed in light of the following potential limitations: The data gathering technique was a standardised questionnaire that was operationalized through quantitative methods. An in-depth interview could have provided remarkable insights into the researched phenomenon. This study also being cross sectional instead of longitudinal, gave a limited time frame for the study yet if more time was allocated maybe, different findings compared to what was obtained would be possible. The selected determinants may not encompass the entire extent of determinants, leaving out other significant antecedents.

SUGGESTION FOR FURTHER RESEARCH

Based on the findings, we recommend additional research in the following areas: First, a policy and regulatory framework in encouraging sustainable public procurement adoption practices. Secondly, private sector perceptions on sustainable public procurement adoption. Thirdly, role of Technology and Innovation in sustainable procurement. Lastly, a comparative study with other countries should also be done. Investigating the practices of other African nations and global best practices would help to understand what has worked in terms of promoting sustainable procurement, and drawing lessons for Uganda.

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