Green Public Procurement Practices and Staff Behavioural Intentions in Selected Ministries and Development Agencies in Akwa Ibom and Cross River States, Nigeria

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ABSTRACT

Green public procurement (GPP) enables public institutions to incorporate environmental considerations into purchasing decisions, but its effectiveness depends partly on employees' willingness to support and implement sustainable procurement. This study examined the relationship between four GPP practices: They are environmental criteria integration, eco-friendly product acquisition, supplier environmental assessment, and lifecycle costing and staff behavioural intentions in selected ministries and development agencies in Akwa Ibom and Cross River States, Nigeria. A cross-sectional survey design was adopted. The study population comprised 1,072 employees, from which a sample of 291 was determined using Yamane's formula and proportionally allocated across the selected institutions. A total of 259 usable responses were reported. Questionnaire scales were assessed using factor loadings and Cronbach's alpha, with coefficients ranging from 0.926 to 0.960. Multiple regression indicated that the model was statistically significant, $F(4, 254) = 603.890$, $p < .001$, and explained 90.5% of the variance in staff behavioural intentions ($R^2 = .905$; adjusted $R^2 = .903$). Environmental criteria integration ($B = .601$, $\beta = .600$, $t = 4.547$, $p < .001$) and eco-friendly product acquisition ($B = .363$, $\beta = .372$, $t = 2.861$, $p = .005$) were positive and statistically significant predictors. Supplier environmental assessment was negative and not significant ($B = -.058$, $\beta = -.060$, $p = .464$), while lifecycle costing was positive and not significant ($B = .043$, $\beta = .040$, $p = .637$). The findings suggest that clear environmental requirements and practical access to greener products are associated with stronger staff intentions, whereas supplier assessment and lifecycle costing may require improved implementation, communication, and staff capacity-building.

Keywords: Green public procurement; behavioural intentions; environmental criteria; eco-friendly products; supplier assessment; lifecycle costing; Nigeria.

INTRODUCTION

Public procurement is increasingly viewed as a policy instrument through which governments can influence production, consumption, and environmental performance. Green public procurement (GPP) incorporates environmental considerations into the purchase of goods, services, and works, with the aim of reducing adverse environmental impacts across their life cycles. It can involve environmental specifications, eco-labels, supplier assessment, and lifecycle costing, while retaining the public sector's obligation to achieve value for money (Cheng et al., 2018; Brammer & Walker, 2017; UNEP, 2023; OECD, 2024).

The shift from price-centred procurement towards sustainability-oriented procurement places additional demands on public organisations and their staff. Procurement personnel must understand environmental requirements, identify suitable products, evaluate suppliers, and consider costs beyond the initial purchase price. The Theory of Planned Behaviour (TPB) proposes that behavioural intentions are shaped by attitudes, subjective norms, and perceived behavioural control (Ajzen, 1991, 2020). Institutional Theory complements

this account by explaining how formal rules, organisational norms, and external pressures influence the adoption of organisational practices (DiMaggio & Powell, 1983).

In Nigeria, the integration of environmental priorities into public procurement faces challenges associated with awareness, technical capacity, institutional support, and enforcement. Although related studies have examined factors such as policy clarity, training, funding, and awareness, evidence concerning the combined relationship between specific GPP practices and staff behavioural intentions in Akwa Ibom and Cross River States remains limited. This study addresses that contextual gap by examining environmental criteria integration, eco-friendly product acquisition, supplier environmental assessment, and lifecycle costing as predictors of staff behavioural intentions.

Aim and Research Hypotheses

The study examined the relationship between GPP practices and staff behavioural intentions in selected ministries and development agencies in Akwa Ibom and Cross River States. Four null hypotheses were tested:

- **H_{01}:** Environmental criteria integration has no significant relationship with staff behavioural intentions.
- **H_{02}:** Eco-friendly product acquisition has no significant relationship with staff behavioural intentions.
- **H_{03}:** Supplier environmental assessment has no significant relationship with staff behavioural intentions.
- **H_{04}:** Lifecycle costing practices have no significant relationship with staff behavioural intentions.

LITERATURE AND THEORETICAL FRAMEWORK

Green Public Procurement Practices

GPP refers to the integration of environmental considerations into public purchasing and contract decisions. The present study operationalised GPP through four dimensions. Environmental criteria integration concerns the incorporation of environmental requirements into procurement policies, tender specifications, and evaluation procedures. Eco-friendly product acquisition concerns selecting goods and services with lower environmental impacts, including energy-efficient, recyclable, or low-emission alternatives. Supplier environmental assessment involves evaluating suppliers' environmental performance and compliance. Lifecycle costing considers total costs over acquisition, operation, maintenance, and disposal rather than purchase price alone (Testa et al., 2016; Cheng et al., 2018; Alhola et al., 2019; Andhov et al., 2022).

Staff Behavioural Intentions

Behavioural intention represents an individual's readiness or willingness to perform a behaviour. In sustainable procurement, it reflects staff members' intention to comply with green procurement policies, prioritise environmentally preferable alternatives, advocate for environmental criteria, and support procurement changes that advance sustainability. The TPB suggests that intention is influenced by attitudes, subjective norms, and perceived behavioural control; organisational rules and expectations may also shape whether staff view sustainable procurement as legitimate and feasible (Ajzen, 1991, 2020; DiMaggio & Powell, 1983).

Theoretical Integration and Research Gap

The study combines TPB and Institutional Theory. TPB provides an individual-level explanation of staff willingness, while Institutional Theory highlights how organisational policies, norms, and regulatory pressures may enable or constrain that willingness. The reviewed literature indicates that awareness, training, policy clarity, leadership, and resources can be important for GPP implementation. However, the

study's specific contribution is to examine four operational GPP dimensions together in the sub-national public-sector context of Akwa Ibom and Cross River States.

METHODOLOGY

Research Design and Study Population

A cross-sectional survey design was used to collect standardised responses from employees in selected ministries and development agencies. The reported population was 1,072 staff across eight institutions: the Cross River State Ministries of Environment and Works; Cross River State Investment Promotion Bureau; Cross River State Water Board Limited; Akwa Ibom State Ministry of Environment and Mineral Resources; Akwa Ibom State Ministry of Works and Fire Service; Akwa Ibom State Environmental Protection and Waste Management Agency; and Akwa Ibom State Rural Development Agency.

Sample and Data Collection

The sample size was calculated using Yamane's formula at a 5% level of precision, producing a target sample of 291. Bowley's proportional allocation formula was used to distribute the sample across institutions. Convenience sampling was then used to recruit available and accessible staff. Data were collected using a structured questionnaire covering respondent characteristics and the five study constructs. The instrument used a five-point response scale. The source document reports 259 usable responses, equivalent to approximately 89% of the target sample.

Validity and Reliability

Face, content, and construct validity procedures were reported, including review by the researcher experts in field of marketing and a pilot test involving 26 staff members in institutions in Abia and Imo States. Factor loadings and Cronbach's alpha were used to assess the measures. Reported factor loadings ranged from 0.817 to 0.888 and alpha coefficients ranged from 0.926 to 0.960, indicating high internal consistency in the pilot measures.

Constructs	Reported factor loading	Cronbach's alpha	Items
Environmental criteria integration	0.873	0.953	4
Eco-friendly product acquisition	0.846	0.955	4
Supplier environmental assessment	0.817	0.960	4
Lifecycle costing practices	0.861	0.941	4
Staff behavioural intentions	0.888	0.926	4

Model Specification and Analysis

The data were analysed using descriptive statistics and multiple linear regression in SPSS Version 23. The model was specified as:

$$SBI = \beta_0 + \beta_1 ECI + \beta_2 EFPA + \beta_3 SEA + \beta_4 LCP + \mu$$

where SBI denotes staff behavioural intentions; ECI, environmental criteria integration; EFPA, eco-friendly product acquisition; SEA, supplier environmental assessment; LCP, lifecycle costing practices; and μ, the error term. Statistical significance was assessed at $\alpha = .05$.

RESULTS

Respondent Characteristics

The 259 respondents included 183 men (71%) and 76 women (29%). The largest age group was 35–44 years (39%), followed by respondents aged 45 years and above (33%). More than half held an HND/B.Sc qualification (51%), while 32% reported O'Level/ND qualifications and 17% held postgraduate qualifications. Procurement officers represented 66% of respondents. Cross River State accounted for 53% of responses and Akwa Ibom State for 47%.

Regression Model

The regression model showed a strong overall association between the four GPP dimensions and staff behavioural intentions ($R = .951$). The model explained 90.5% of the observed variance ($R^2 = .905$; adjusted $R^2 = .903$; standard error of estimate = .198). The overall regression was statistically significant, $F(4, 254) = 603.890$, $p < .001$.

Predictor	B	SE	Standardised β	t	p	Decision at 0.05
Constant	.196	.098	—	1.998	.047	—
Environmental criteria integration	.601	.132	.600	4.547	< .001	Significant; positive
Eco-friendly product acquisition	.363	.127	.372	2.861	.005	Significant; positive
Supplier environmental assessment	−.058	.080	−.060	−.733	.464	Not significant
Lifecycle costing practices	.043	.091	.040	.473	.637	Not significant

Note. B = unstandardised coefficient; SE = standard error; β = standardised coefficient. The source output reports significance as .000 for environmental criteria integration and the overall model; these are reported here as $p < .001$.

Hypothesis Tests

Environmental criteria integration was positively associated with staff behavioural intentions ($B = .601$, $\beta = .600$, $p < .001$); therefore, H_{01} was rejected. Eco-friendly product acquisition was also a positive, significant predictor ($B = .363$, $\beta = .372$, $p = .005$); H_{02} was rejected. Supplier environmental assessment had a negative but statistically non-significant coefficient ($B = −.058$, $\beta = −.060$, $p = .464$), so H_{03} was not rejected.

Lifecycle costing had a positive but non-significant coefficient ($B = .043$, $\beta = .040$, $p = .637$), so H_{04} was not rejected.

DISCUSSION

The results indicate that the four GPP dimensions do not have uniform relationships with staff behavioural intentions. Environmental criteria integration was the strongest significant predictor. Embedding environmental requirements in procurement policies and procedures may make sustainability expectations clearer and help employees understand how to apply them. This result is consistent with the TPB emphasis on beliefs and perceived expectations and with Institutional Theory's focus on formal organisational rules and norms.

Eco-friendly product acquisition was also positively associated with behavioural intentions. Where staff encounter practical examples of sustainable purchasing and organisational policies support environmentally preferable products, sustainable procurement may become more tangible and easier to endorse. This finding aligns with literature that identifies perceived environmental benefits and supportive procurement frameworks as relevant to green procurement adoption.

Supplier environmental assessment did not show a statistically significant relationship with staff behavioural intentions. One possible interpretation is that supplier screening and evaluation are less visible to employees than procurement rules or the products selected. The study did not directly test this explanation, so it should be treated as a possibility rather than a demonstrated mechanism.

Similarly, lifecycle costing was positive but non-significant. Although respondents reported that lifecycle costs were considered, this practice may not independently predict intention once the other dimensions are included in the model.

The model's high R^2 should be interpreted cautiously. The study used self-reported questionnaire data and convenience sampling, and the constructs may share measurement content. The cross-sectional design also does not establish causal effects. In addition, the very high explanatory power warrants checking the raw data, construct correlations, regression diagnostics, and possible overlap among predictors before drawing strong predictive conclusions.

CONCLUSION AND IMPLICATIONS

This study examined the relationship between GPP practices and staff behavioural intentions in selected ministries and development agencies in Akwa Ibom and Cross River States. Environmental criteria integration and eco-friendly product acquisition were positive, statistically significant predictors of staff behavioural intentions.

Supplier environmental assessment was negative and non-significant, while lifecycle costing was positive and non-significant. The findings suggest that clear environmental procurement requirements and visible access to greener products may be particularly relevant to staff willingness to support sustainable procurement.

PRACTICAL RECOMMENDATIONS

- Public institutions should incorporate clear, measurable environmental criteria into procurement policies, specifications, evaluation procedures, and contract monitoring.
- Management should support the acquisition of environmentally preferable products and provide staff with guidance on identifying credible environmental attributes and assessing value for money.
- Supplier environmental assessment procedures should be communicated transparently to procurement teams and relevant staff, with clear indicators and documented evaluation processes.
- Institutions should provide practical training on lifecycle costing, including acquisition, operation, maintenance, and end-of-life costs, and integrate lifecycle-cost templates into procurement planning.
- Future research should use probability sampling where feasible, test the model in other Nigerian states, and report diagnostic tests and confidence intervals alongside regression coefficients.

LIMITATIONS AND FURTHER RESEARCH

The study was limited to eight institutions in two states and used convenience sampling, which restricts generalisability. It relied on self-reported cross-sectional data and therefore cannot establish temporal order or causality. Future studies could use longitudinal or mixed-method designs, broaden the institutional sample, and examine whether awareness, training, leadership support, or organisational capacity mediates or moderates the relationships observed.

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