Attitudinal and Contextual Barriers to Green Product Adoption among Educators and Administration: A Case Study of Educational Institutions in Meerut

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Abstract

This study investigates the perceived barriers hindering the adoption of green products within the educational ecosystem of Meerut, India, specifically adopting an institutional perspective. Recognizing educational institutions as crucial agents for promoting sustainability, the research aims to identify the structural, procedural, and normative impediments faced by schools, colleges, and universities in transitioning towards environmentally preferable goods and services. Utilizing a qualitative approach, data was gathered from secondary sources, through online mode and focus group discussions with key institutional stakeholders, including administrators, and faculty members in Meerut. The analysis reveals a complex interplay of perceived barriers operating at multiple institutional levels. Key impediments identified include: 1) Economic Constraints: Predominant concerns regarding the higher initial costs, green products and stringent, inflexible budgetary allocations; 2) Structural & Procedural Hurdles: Lack of clear institutional green procurement policies, cumbersome bureaucratic approval processes, and limited access to reliable suppliers/vendors offering certified green alternatives; 3) Behavioral & Awareness Factors: Insufficient institutional commitment and leadership prioritization, resistance to changing established procurement habits, and a lack of awareness or training among institution stakeholders regarding the benefits and availability of green options. The findings emphasize that overcoming these barriers requires targeted intervention sat the institutional level, including the formulation of supportive green procurement policies, dedicated budgetary provisions, streamlined processes, capacity building, and fostering a stronger organizational culture of sustainability.

Key Words: *Green Products, Sustainable Procurement, Educational Institutions, Institutional Barriers, Meerut, Higher Education, Schools, Procedural Hurdles, Behavioral Factors.*

1. INTRODUCTION

The escalating global environmental crisis, characterized by climate change, resource depletion, and pollution, necessitates urgent transitions towards sustainable practices across all sectors of society (IPCC, 2023). Educational institutions (Els) -encompassing schools, colleges, and universities - hold a unique and pivotal position in this transition. As microcosms of society, centers of knowledge creation and dissemination, and shapers of future generations, Els possess both a profound responsibility and a significant opportunity to model and drive sustainable development (Wright & Wilton, 2012; UNESCO, 2014). Shifting towards "green products" - defined as goods and environmental impact throughout their life cycle compared to conventional alternatives (ISO 14021:2016) - can significantly lower resource consumption, waste generation, and greenhouse gas emissions associated with institutional functioning (Brammer & Walker, 2011). Beyond environmental benefits, green procurement can foster innovation, potentially yield long-term cost savings, enhance institutional reputation, and provide experiential learning opportunities for students (Walker & Brammer, 2009; Grandia, 2016). Institutional theory posits that organizations operate within frameworks of formal rules(regulations, policies), informal norms (cultures, traditions), and cognitive structures (shared beliefs, schemas) that shape their structures, processes, and behaviors (Scott, 2001; DiMaggio & Powell, 1983).

This study specifically focuses on identifying the perceived barriers from the viewpoint of key stakeholders within the educational institutions of Meerut. The research question guiding this study is: **What are the key perceived barriers hindering the adoption of green products by educational institutions (schools, colleges, universities) in Meerut, from an institutional perspective?** 1, By investigating these barriers through the lens of institutional theory examining regulative, normative, and cognitive-cultural pillars (Scott, 2001) this research aims to provide nuanced insights beyond superficial cost concerns. The findings are intended to inform targeted interventions for policymakers, institutional leaders, and sustainability advocates seeking to accelerate the greening of India's educational infrastructure.

2. LITERATURE REVIEW

2.1. Educational Institutions as Agents of Sustainability

The role of Els in advancing sustainability is well-established in literature. They are recognized as "living laboratories" for experimenting with and demonstrating sustainable solutions (Ferrer-Balas et al., 2008).

Sustainable campus initiatives encompass curriculum development, research, community outreach, and operational greening (Leal Filho et al., 2019). Green procurement, as a core operational strategy, directly reduces the environmental burden of institutional consumption while signaling institutional values and priorities (Zhang et al., 2011). Studies highlight its potential for significant impact due to the scale of institutional purchasing power (Grandia, 2016).

2.2. Green Procurement: Concept and Benefits

This requires considering factors like energy efficiency, recycled content, biodegradability, low toxicity, and ethical sourcing throughout the product lifecycle (Brammer & Walker 2011). Benefits extend beyond environmental protection to include potential long-term cost savings (e.g., lower

energy bills), risk mitigation (e.g., avoiding hazardous substances), enhanced reputation, compliance with regulations, and stimulation of green markets (Walker & Brammer, 2009; Testa et al., 2012).

2.3. Barriers to Green Procurement Adoption: A Global and Indian Context
Research globally identifies a range of barriers to GP adoption in organizations, including Els:

▪ **Economic:** Higher initial purchase price of green products, lack of life-cycle costing, budget constraints, and perceived financial risk (Brammer & Walker, 2011; Walker et al., 2012).

▪ **Organizational/Structural:** Lack of top management support, absence of clear policies and guidelines, complex procurement procedures, departmental silos, insufficient staff, and lack of expertise/knowledge (Grandia, 2015; Erridge & Hennigan, 2012).

▪ **Informational:** Lack of information about green products and suppliers, difficulty in verifying green claims (greenwashing), uncertainty about performance and quality (Michelsen & de Boer, 2009; Zhu et al., 2013).

▪ **Market-Related:** Limited availability and variety of green products, lack of reliable suppliers, concerns about supplier capacity and reliability, and perceived higher transaction costs (Preuss, 2009; Appolloni et al., 2014).

▪ **Behavioral/Cultural:** Resistance to change, entrenched habits favoring conventional products, lack of environmental awareness or commitment among staff, and insufficient training (Meehan Bryde, 2011; Gunther & Scheibe, 2006).

In the specific context of India, studies on GP adoption, particularly within Els, are relatively nascent but growing. Research often highlights:

▪ **Strong Policy-Implementation Gap:** While policies like the Public Procurement Policy for Micro and Small Enterprises (MSEs) Order incorporating green aspects exist, implementation at state and institutional levels is weak and inconsistent (Kumar & Dixit, 2018; Geng & Doberstein, 2008).

▪ **Dominance of Cost-Centric Procurement:** Price remains the overwhelmingly dominant criterion, overshadowing environmental considerations (Prakash & Barua, 2015; Dash et al., 2021).

▪ **Bureaucratic Hurdles:** Complex, lengthy approval processes and rigid financial rules hinder innovation and adoption of newer, greener alternatives (Sharma & lyer, 2012).

▪ **Limited Awareness and Capacity:** Lack of awareness among procurement officers and end-users about GP benefits, standards (like EcoMark), and procedure widespread (Dash et al., 2021; Joshi et al., 2013).

▪ **Supply Chain Limitations:** Underdeveloped markets for certified green products, especially beyond major metros, and concerns about supplier credibility (Prakash & Barua, 2015).

2.4. Institutional Theory and Green Procurement
Institutional theory provides a powerful lens for understanding why organizations adopt certain practices and resist others. Scott's (2001) three pillars offer a framework:

[i] **Regulative:** Formal rules, laws, sanctions, and policies. Barriers here include the absence of mandatory GP policies, misaligned budget rules, or lack of supportive government regulations/incentives.

[ii] **Normative:** Values, norms, roles, expectations, and standards of professionalism.

[iii] **Cognitive-Cultural:** Shared conceptions, frames of mean schemas, and taken-for-granted assumptions.

2.5. Research Gap

While barriers to GP are documented globally and emerging in the Indian context, there is a scarcity of research focusing specifically on the educational ecosystem of Tier-II/III Indian cities like Meerut. This research addresses this gap by investigating the perceived institutional barriers (regulative, normative, cognitive-cultural) to green product adoption within the diverse Els of Meerut.

3. METHODOLOGY

3.1. Research Approach and Design This study employed a **qualitative research** approach, deemed most appropriate for exploring complex perceptions, experiences, and contextual factors surrounding barriers to green product adoption (Creswell & Poth, 2018). An exploratory and descriptive design was used to gain in-depth insights into the phenomenon within its real-world context.

3.2. Study Setting and Participants

The research was conducted within the educational ecosystem of Meerut City, Uttar Pradesh, India. Meerut hosts a diverse range of educational institutions:

- **Schools:** Affiliated with CBSE, ICSE, and UP State Board (Government and Private).

- **Colleges:** Including undergraduate and postgraduate institutions like Meerut College (affiliated with Chaudhary Charan Singh University, Meerut), offering Arts, Science, Commerce, and Management streams.

- **Universities:** Chaudhary Charan Singh University (State Universities and private universities.

    Purposive sampling was used to identify key stakeholders involved in or influencing procurement decisions within these institutions. The sample included:

- **Administrators:** Principals, Directors, Bursars, Finance Officers, Estate Managers, Heads of Departments (HoDs).

- **Procurement Officers/Committee Members:** Staff directly involved in purchasing decisions.

- **Faculty Members:** Particularly those involved in administration finance committees, or sustainability initiatives. Facility/Support Staff: Supervisors involved in the use of consumables (e.g., cleaning, maintenance).

Efforts were made to ensure representation across different types of institutions (schools vs. colleges vs. universities) and management structures (government-aided vs. private). A total of 38 participants were engaged across the study.

3.3. Data Collection Methods

Data triangulation was achieved using two primary methods:

I. Secondary Data Collection:
A comprehensive review of existing literature, including: **Academic journals** on sustainable procurement, institutional theory, and sustainability in education. **Government policies** (National, State, Local) relevant to procurement and environmental sustainability. **Institutional documents** (where accessible): Annual reports, procurement manuals, sustainability policies of participating or similar Els. **Reports from credible organizations** (TERI, CEE, UNEP) on green procurement in India.

II. Primary Data Collection:
Focus Group Discussions (FGDs): The primary method for gathering rich, interactive data on perceptions. Five FGDS were conducted:

FGD 1: School Administrators (Principals, Managers) (n=6)

FGD 2: College/University Administrators (Bursars, Finance Officers, Estate Managers) (n=7)

FGD 3: Faculty Members(HoDs, Active Faculty in Committees) (n=8)

FGD 4: Procurement Staff/Committee Members (n=5)

FGD 5: Facility/Support Staff Supervisors (n=4) Each FGD lasted approximately 90-120 minutes, was audio-recorded (with consent), and facilitated using a semi-structured discussion guide focusing on awareness, practices, perceived barriers (cost, process, knowledge, attitudes), and suggestions. Online FGDs were utilized where physical meetings were impractical.

Brief Online Surveys (Supplemental): Short questionnaires were distributed online to a broader pool of stakeholders (n=8 additional participants, mainly faculty and admin) to gather supplementary data on awareness levels and basic procurement practices, he to contextualize FGD findings.

3.4. Data Analysis

Thematic analysis, following the approach outlined by Braun and Clarke (2006), was employed to analyze the qualitative data (primarily FGD transcripts and notes, supplemented by secondary data insights). The process involved:

[i] **Familiarization:** Repeated reading/listening to transcripts.

[ii] **Initial Coding:** Generating initial descriptive codes from the data.

[iii] **Searching for Themes:** Collating codes into potential themes, guided initially by institutional theory pillars (Regulative, Normative, Cognitive-Cultural) but remaining open to emergent themes.

[iv] **Reviewing Themes:** Checking themes against coded data and entire dataset; refining themes.

[v] **Defining and Naming Themes:** Developing clear definitions and names for each theme and sub-theme.

[vi] **Producing the Report:** Weaving the thematic analysis into a coherent narrative, supported by illustrative quotes.

[vii] NVivo software was used to assist managing and coding the data.

3.5. Ethical Considerations

▪ Informed consent was obtained from all participants before FGDs and surveys.

▪ Participation was voluntary, and anonymity and confidentiality were strictly maintained. Participants and institutions are not identified by name in reporting.

▪ Audio recordings were transcribed verbatim and securely stored; recordings were deleted after transcription verification.

▪ Ethical approval was sought and obtained from the relevant committee at Meerut College prior data collection.

3.6. Limitations

▪ Findings are based on perceptions within Meerut and may not be fully generalizable to all Indian cities, though insights are transferable.

▪ The qualitative nature prioritizes depth over breadth; statistical generalization is not the aim.

▪ Perspectives of suppliers/vendors and students were not directly captured, focusing solely on institutional stakeholders.

▪ Recall bias and social desirable bias might influence participant responses.

4. FINDINGS AND ANALYSIS

These barriers align strongly with Scott's (2001) institutional pillars and are interconnected, often reinforcing each other. The core themes are elaborated below with supporting participant quotes (anonymized).

4.1. Theme 1: Economic Constraints (Regulative & Cognitive-Cultural Pillars)

This was the most frequently cited and intensely felt barrier across all types of institutions and stakeholder groups.

▪ **Higher Perceived Initial Cost:** Participants overwhelmingly perceived green products (e.g., recycled paper, energy-efficient bulbs/equipment, eco-friendly cleaning agents, bio-

degradable utensils) as significantly more expensive than conventional alternatives. *"When we get quotations, the recycled paper option is always 20-25% higher. This perception often overshadowed discussions about potential long-term savings (e.g., energy efficiency), which were viewed as uncertain or difficult to quantify within institutional accounting cycles.

▪ **Stringent and Inflexible Budgetary Allocations:** "Our budget head fixed - 'Stationery', 'Cleaning. We get allocations based on historical spending, and there's no separate line item for 'green' or 'sustainable' purchases. Even if we wanted to, we couldn't easily justify spending more from an existing head." (Bursar, Government-Aided College). *"Auditors question any deviation from L1 [Lowest Price Tender 1]. Explaining that we chose a slightly higher quote for an energy-saving device is a lengthy.., battle we often avoid."* (Finance Officer, University).

▪ **Lack of Financial Incentives:** Participants noted the absence of government subsidies, tax breaks, or other financial incentives specifically targeted at encouraging green procurement in educational institutions. "If the government could give some rebate or make green products GST-free for institutions, it would make a huge difference in closing the price gap." (Principal, Private School).

4.2. Theme 2: Structural & Procedural Hurdles (Regulative & Normative Pillars)

Barriers related to the formal structures and processes governing procurement were pervasive, particularly in larger colleges and universities.

▪ **Absence of Clear Institutional Green Procurement Policies:** The vast majority of institutions lacked any formal policy, guideline, or mandate prioritizing environmentally preferable products. "There is nothing in our procurement manual that mentions 'environment' or 'sustainability'. Our rules only talk about quality, quantity, and price." (Administrative Officer, University). This absence left procurement staff without clear direction or authority to prioritize green criteria.

▪ **Cumbersome Bureaucratic Approval Processes:** Existing procurement procedures were described as complex, multi-layered, and time-consuming. Introducing new product categories or suppliers, especially those perceived as non-standard (like certified green vendors), was seen as adding further complexity and delay. "Getting a new supplier empaneled, even if they offer good green products, takes months. Multiple committees, approvals from finance, head of institution... it's easier to stick with the existing vendor list." (Procurement Committee Member, College).

▪ **Fragmented Decision-Making and Silo Mentality:** Responsibility for procurement was often fragmented. Decisions about furniture might lie with estates, lab equipment with departments, stationery with administration, with little coordination or shared sustainability goals. "The Chemistry department might want specific green lab chemicals, but the central procurement just buys the cheapest bulk option for everyone based on the master list." (HoD Science, College).

▪ **Limited Access to Reliable Suppliers and Certified Products:** Participants consistently reported difficulty in finding trustworthy local suppliers offering a wide range of certified green products (e.g., carrying EcoMark, Energy Star, or credible third-party certifications). "We know big brands might have green options, but their local distributors often don't stock them. Finding smaller, reliable eco-suppliers is tough, and verifying their claims is another hurdle." (Estate Manager, University). "For a large hostel mess, can a small eco-vendor supply enough biodegradable plates reliably? We have doubts." (Facility Supervisor, University Hostel).

4.3. Theme 3: Behavioral & Awareness Factors (Normative & Cognitive-Cultural Pillars)

Barriers rooted in attitudes, knowledge, and institutional culture were deeply intertwined with the structural and economic issues.

▪ **Insufficient Institutional Commitment and Leadership Prioritization:** While some individual faculty or staff championed sustainability, a lack of visible, consistent commitment from top leadership (Principals, Directors, Vice-Chancellors) was frequently cited as a critical barrier. "Sustainability is not a priority in our leadership meetings. It's seen as a 'nice-to-have', not essential for our core function of education and exams." (Senior Faculty Member, University).

▪ **Resistance to Change and Entrenched Habits:** Moving away from familiar suppliers and conventional products was perceived as risky and inconvenient. "We've been buying Brand X paper for 15 years. It works, it's predictable. Why change and risk complaints if the recycled paper feels different?" (Administrative Staff, School). Procurement staff often favored established routines to minimize perceived risk and workload.

5. DISCUSSION

The findings resonate strongly with global literature on GP barriers (Brammer & Walker, 2011; Grandia, 2016) but offer crucial contextual nuances specific to a Tier-Il Indian city and its educational institutions. The analysis confirms that barriers are not isolated but form a complex, self-reinforcing system operating across Scott's (2001) three institutional pillars.

5.1. Interplay of Institutional Pillars

▪ **Regulative Failures Drive Economic and Structural Hurdles:** The absence of mandatory institutional GP policies (a regulative gap) directly enables the continuation of purely cost-driven procurement. Stringent, inflexible budgetary rules and auditing norms prioritizing L1 (regulative constraints) exacerbate the perceived economic barrier and stifle innovation. The lack of supportive government regulations or financial incentives further weakens the regulative push for GP.

▪ **Normative Inertia Perpetuates Structural and Behavioral Barriers:** The lack of a sustainability ethos embedded in institutional values and norms means GP lacks legitimacy. This normative void allows fragmented decision-making (silos) and resistance to change to persist. Leadership's failure to prioritize GP (a normative failure) signals its low importance, discouraging proactive efforts from lower levels.

▪ **Cognitive-Cultural Gaps Undermine Motivation and Capacity:** Deeply ingrained perceptions of high cost, skepticism about benefits and availability, and a fundamental lack of awareness and understanding (cognitive-cultural barriers) create apathy or resistance among stakeholders. These gaps make it difficult for individual advocate for or implement GP even if regulative or normative support were marginally improved.

5.2. Practical Implications and Recommendations

Overcoming the identified barriers necessitates multi-pronged strategies at institutional, local, and policy levels:

[i] **Develop and Implement Clear Green Procurement Policies:** EIs must formulate mandatory policies integrating environmental criteria into purchasing decisions for key product categories (paper, cleaning, IT, furniture, energy). These should reference standards (EcoMark, Energy Star) and provide practical guidance.

[ii] **Establish Dedicated Budgetary Provisions:** Create specific budget lines for green products. Implement life-cycle costing for major purchases (e.g., energy-efficient equipment) to justify higher initial investments. Explore internal green funds.

[iii] **Streamline and Adapt Procurement Processes:** Simplify procedures for approving green products/vendors. Develop pre-approved lists of certified green suppliers. Integrate environmental criteria clearly into tender documents.

[iv] **Build Leadership Commitment and Culture:** Top leadership must visibly champion sustainability and GP, embedding it into strategic plans and performance metrics. Foster cross-departmental coordination (e.g., forming sustainability/green procurement committees).

[v] **Comprehensive Awareness and Training Programs:** Mandatory training for procurement staff, administrative personnel, facility managers, HoDs, and faculty on the benefits of GP, identifying green products, understanding certifications, and implementing policies. Utilize workshops, seminars, and online resources.

[vi] **Demonstration Projects:** Start with high-visibility, manageable projects (e.g., switching all lighting to LED, converting to 100% recycled paper in the admin office) to demonstrate feasibility and benefits, building confidence and momentum.

6. CONCLUSION

This research has illuminated the complex tapestry of perceived barriers hindering the adoption of green products within the educational ecosystem of Meerut, India. The findings underscore that economic constraints are amplified by inflexible budgetary systems and auditing norms (Regulative pillar), structural hurdles stem from a lack of clear policy and cumbersome processes (Regulative), alongside fragmented responsibilities (Normative), and behavioral barriers are rooted in insufficient leadership commitment, resistance to change, and critical gaps in awareness and training (Normative and Cognitive-Cultural pillars).

Crucially, supportive government action is needed, including stronger regulations, financial incentives, revised audit norms, and capacity building initiatives. By tackling these interconnected barriers, Meerut's educational institutions have the potential to transform from passive consumers into active leaders of sustainability.

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