

Exploring Firms' Reaction to Sustainability Pressures and its Impact on Management Control Tools in a Stone District

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Abstract

Sustainability is crucial for safeguarding ecosystems and promoting collective well-being, increasingly influencing company management practices through various institutional pressures. Leveraging extended institutional theory (Kauppi, 2013) and the institutional framework proposed by Gonzalez-Gonzalez and Zamora-Ramirez (2016), this study explores the drivers that prompt micro, small, and medium-sized enterprises (SMEs) to adopt sustainable practices and it examines how these responses differ by firm size. Through an in-depth case study of the Apuan-Versilian marble industrial district in Italy, we analyze the dynamic interplay between institutional pressures and sustainability adoption patterns, and the role of management control.

Our findings indicate that institutional pressures, intensified by the district consortium's Life Cycle Assessment initiative, have led firms to transition from predominantly symbolic to more substantive sustainability responses. This shift was facilitated by recognizing the economic benefits inherent in sustainability-oriented practices, such as improved raw material efficiency, cost savings, and optimized packaging. Management control tools emerged not merely as outcomes of increased institutional pressures but also as essential enablers for integrating sustainability into strategic decision-making processes. Additionally, the consortium's role as an institutional mediator significantly supported SMEs, enabling them to overcome resource constraints and adopt sophisticated sustainability practices.

The study contributes to existing literature by clarifying the interplay among institutional pressures, firm size, and management control tools sustainability-oriented, highlighting the pivotal role of collective intermediaries.

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Table 5-The institutional pressure in the Apuan-Versilian ID

| Type of pressure | Definition | Examples in the ID | Firms Isomorphism behavior |
|--|--|--|---|
| Social variant of institutional theory (traditional approach) | | | |
| Regulative | Formal rules, laws, and sanctions imposed by authorities | Compliance with extraction limits (R.D. 1443/1927); Waste management obligations; Water use standards (ISO 14046); Enforcement by ARPAT and Park Authorities | Close water cycles; Use of biodegradable lubricants; Reuse of wastewater |
| Normative | Standards, expectations and values from professions, networks, or society | Promotion of LCA through consortium; Adoption of ISO 14001/14064; Expectations from banks and trade associations; Influence of environmental activists | Adoption of ISOs; EDP Certification; LCA Project participation |
| Cognitive | Imitation of peers in uncertain contexts to reduce risk and gain legitimacy | Imitation of lead firms; Adoption of LCA tools after peer success; Conformity to dominant district narrative | Initiate targeted changes in practices such as packaging, energy use, and waste management. |
| Economic variant of institutional theory (extended approach) | | | |
| Frequency-based | Adoption of practices due to their perceived ubiquity and normalization, without critical assessment | Largely absent before LCA; no widespread sustainability routines; most firms perceived sustainability as a cost or an issue for 'others' in the sector | Not perceived: it's someone else's problem |
| Trait-based | Emulation of practices from referent firms sharing relevant traits (e.g., size, reputation, geography) | Inspired by leading firms outside the district (e.g., Verona, Carrara); reinforced by local companies engaging with ISO certifications, EPDs, and the LCA initiative | Initial achievement of certifications and mutual encouragement to adopt LCA |
| Outcome-based | Replication of practices based on perceived or demonstrated strategic and operational benefits | Firms adopted sustainability tools to access funding, improve efficiency, and reduce costs | Material digital scanning application, energy monitoring, sustainable packaging |

APPENDIX A - The participation of the Consortium's firms to the LCA

| Participation level | N. of firms | % of consortium | Characteristics |
|-----------------------------|-------------|-----------------|--|
| Active contributors | 15 | 29% | Provided full datasets; attended workshops; contributed to data interpretation |
| Partial contributors | 20 | 38% | Offered comments and insights; limited ability to provide complete datasets |
| Observer firms | 17 | 33% | Attended meetings to learn; plan future adoption of LCA practices |
| Total | 52 | 100% | Approved initiative unanimously through the Board |

APPENDIX B - The ID value chain

