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Sustainability Practices and Firm Performance in the Food Industry: A Systematic Review

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 27 February 2026 and was last updated on 27 February 2026.

INTRODUCTION

Review question / Objective This systematic review examines when and why sustainability practices improve firm performance in the food industry. Specifically, it investigates how organizational capabilities (operational, marketing, and innovation) moderate sustainability-performance relationships, explaining why firms adopting similar sustainability practices experience divergent financial outcomes. Population: food industry firms (manufacturing, retail, restaurants, supply chain). Exposure: sustainability practices including ESG initiatives, food waste reduction, organic certification, and environmental management. Outcomes: firm performance, including financial returns, profitability, and competitive advantage. Study designs: quantitative, qualitative, reviews, meta-analyses, and industry reports.

Condition being studied The heterogeneous relationship between sustainability practices and firm performance in the food industry. Food companies adopting similar sustainability practices experience widely divergent outcomes – from 14:1 ROI to net cost burdens – yet prior literature treats this variation as measurement error rather than systematic patterns. The food industry's distinctive characteristics (perishability, supply chain complexity, consumer visibility, structural fragmentation, certification proliferation) intensify the role of organizational capabilities in determining performance outcomes. This review synthesizes evidence on how capability differences explain this heterogeneity.

METHODS

Participant or population Food industry firms including manufacturing, processing, retail, restaurants, food service, supply chain, organic/certification, and agri-food segments.

Intervention Sustainability practices including ESG initiatives, environmental management, corporate social responsibility, food waste reduction, organic certification, sustainable sourcing, and circular economy practices.

Comparator Firms with varying levels of organizational capabilities (operational efficiency, marketing capability, innovation capability). No single comparator group; heterogeneity across capability endowments serves as the basis for comparison.

Study designs to be included Quantitative empirical studies, qualitative studies, systematic reviews, meta-analyses, industry reports, and mixed-methods studies published in peer-reviewed journals or by recognized institutions.

Eligibility criteria Inclusion: empirical evidence on sustainability-performance relationships in food industry contexts; published 2000–2025; English language; peer-reviewed or institutional reports. Exclusion: studies focused exclusively on consumer behavior without firm-level performance implications; purely descriptive or normative works; conference abstracts; studies lacking identifiable food industry context.

Information sources Web of Science Core Collection, Scopus, Business Source Complete, Google Scholar, and institutional repositories. Supplemented by backward and forward citation tracking of included studies.

Main outcome(s) Firm performance measures including financial performance (profitability, ROI, revenue), operational efficiency, competitive advantage, and ESG performance ratings. Effect direction (positive, mixed, negative) assessed for sustainability-performance relationships.

Quality assessment / Risk of bias analysis 2-point quality scale assessing four dimensions (3 points each): methodological rigor, theoretical grounding, evidence transparency, and practical relevance. Inter-rater reliability verified with two independent coders (ICC = 0.85; Cohen's κ = 0.62). Risk of bias assessed at study and outcome levels following PRISMA 2020 guidance.

Strategy of data synthesis Narrative synthesis due to heterogeneity in study designs, contexts, and outcome measures. Four stages: preliminary synthesis (organizing by theoretical orientation and methodology), pattern identification (coding effect direction, moderators, mechanisms), proposition development (iterative refinement against

evidence), and robustness assessment (sensitivity analyses and confidence ratings).

Subgroup analysis Subgroup analyses by: (1) research design (quantitative, qualitative, meta-analysis, review, industry report); (2) geographic region (Global, Europe, North America, Asia, Africa); (3) publication period (pre-2010, 2010–2014, 2015–2019, 2020–2025); (4) food industry segment (manufacturing, restaurants, supply chain, retail, organic/certification, agri-food).

Sensitivity analysis Four pre-specified sensitivity analyses: (1) restriction to high-quality studies (score $\geq 10/12$); (2) restriction to primary empirical studies only; (3) restriction to meta-analyses only; (4) restriction to recent studies (2020–2025).

Language restriction English.

Country(ies) involved United States.

Keywords sustainable food business; organizational capabilities; ESG performance; firm heterogeneity; Sustainable Development Goals; systematic literature review.

Contributions of each author

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