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# Sustainability Compliance among SMEs in the Food Processing Industry in the Philippines and Thailand: A Systematic Literature Review of Socio-Cultural Influences and Best Practices

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## ABSTRACT

This study undertakes a systematic literature review of sustainability compliance among small and medium enterprises (SMEs) in the food processing industry in the Philippines and Thailand. Guided by the PRISMA framework, the review synthesizes 25 peer-reviewed journal articles published between 2015 and 2025. The study examines environmental and social sustainability practices, structural constraints, and socio-cultural influences affecting SME compliance.

Findings indicate that sustainability adoption remains uneven and largely compliance-driven, shaped by regulatory pressures, market demands, and cost considerations (Klewitz & Hansen, 2016; Testa et al., 2018). In the Philippines, sustainability practices are often community-oriented and embedded in local social systems, while Thailand demonstrates more formalized compliance due to stronger integration into global supply chains (Zhu et al., 2016; Khan et al., 2020).

Socio-cultural factors such as collectivism, family ownership structures, and relational norms significantly influence sustainability behavior in both contexts (Harsanto et al., 2023; Tran et al., 2025). The study argues for culturally responsive and context-sensitive sustainability frameworks that integrate informal institutions and local practices.

**Keywords:** Sustainability compliance; Small and medium enterprises (SMEs); Food processing industry; Philippines; Thailand; Socio-cultural influences; Environmental sustainability; Systematic literature review (SLR); PRISMA framework; ASEAN SMEs; Green practices; Sustainable development.

## INTRODUCTION

Sustainability has become a defining paradigm in contemporary economic governance, particularly with the global adoption of Environmental, Social, and Governance (ESG) frameworks and the Sustainable Development Goals (SDGs) (Bansal & DesJardine, 2015). These frameworks emphasize the need for businesses to balance economic performance with environmental stewardship and social responsibility. Within Southeast Asia, small and medium-sized enterprises (SMEs) play a crucial role in economic development, employment generation, and resilience, accounting for a significant share of national economies (Ayyagari et al., 2015).

In the Philippines, SMEs are predominantly concentrated in agri-based and food processing industries. However, these enterprises often operate under financial, technological, and institutional constraints that limit their ability to adopt sustainability practices effectively (Luken & Stares, 2015; Li et al., 2020). In contrast, Thailand presents a more industrialized SME sector with stronger integration into global supply chains. This integration necessitates stricter compliance with international sustainability standards, thereby encouraging more structured sustainability practices (Zhu et al., 2016; Khan et al., 2020).

Despite these structural and economic differences, both countries share similar socio-cultural characteristics, including collectivist orientations, family-based enterprise structures, and reliance on informal institutions. These factors significantly influence business behavior and decision-making processes, including sustainability adoption (Hofstede, 2011; Tran et al., 2025). Increasingly, scholars argue that sustainability compliance cannot be fully understood without examining these socio-cultural dimensions, as they shape how enterprises interpret, prioritize, and implement sustainability practices (Revell & Blackburn, 2017).

Although existing studies examine sustainability practices among SMEs, much of the literature focuses primarily on regulatory compliance, environmental management, or technological innovation in isolation. Limited attention has been given to the socio-cultural dimensions shaping sustainability behavior among SMEs in Southeast Asia, particularly in comparative contexts involving the Philippines and Thailand. Moreover, current scholarship often applies universal sustainability frameworks without sufficiently accounting for culturally embedded business practices and informal institutional influences.

This study addresses this gap by synthesizing literature through the lens of Institutional Theory and Sustainability-Oriented Innovation perspectives. Institutional Theory explains how formal regulations, market pressures, and informal socio-cultural norms influence organizational behavior, while sustainability-oriented innovation highlights how SMEs adapt sustainability practices within resource-constrained environments. By integrating these perspectives, the study contributes to a more context-sensitive understanding of sustainability compliance among ASEAN SMEs.

Given these contexts, this study conducts a systematic literature review to examine sustainability compliance among SMEs in the food processing industry in the Philippines and Thailand, with particular attention to socio-cultural influences and emerging best practices.

### Objectives of the Study

This study aims to:

1. Examine how sustainability compliance is characterized and practiced among SMEs in the food processing industry in the Philippines and Thailand according to existing literature;
2. Identify the key socio-cultural factors influencing sustainability adoption in both countries;
3. Compare sustainability practices and compliance mechanisms between Philippine and Thai SMEs;
4. Analyze the barriers and drivers affecting sustainability implementation; and
5. Identify best practices related to sustainability compliance among SMEs in the Philippines and Thailand.

### Research Questions

To guide the analysis, this study seeks to answer the following questions:

1. How is sustainability compliance characterized and practiced among SMEs in the food processing industry in the Philippines and Thailand according to existing literature?
2. What socio-cultural factors influence sustainability practices in these SMEs?
3. How do sustainability approaches differ between SMEs in the Philippines and Thailand?
4. What are the major barriers and drivers of sustainability compliance in both contexts?
5. What best practices related to sustainability compliance are identified among SMEs in the Philippines and Thailand?

## METHODOLOGY

This study adopts a Systematic Literature Review (SLR) approach to generate a comprehensive, transparent, and analytically rigorous synthesis of existing research on sustainability compliance among small and medium enterprises (SMEs) in the food processing industry in the Philippines and Thailand. The SLR method is particularly appropriate for this inquiry because it enables the integration of fragmented findings across multiple studies while maintaining a structured and replicable research process. By consolidating both empirical and theoretical contributions, the study identifies recurring patterns, contextual differences, and emerging best practices relevant to sustainability adoption among SMEs.

The review is guided by the PRISMA framework developed by David Moher et al. (2009), ensuring a transparent and systematic process of identification, screening, eligibility assessment, and inclusion of relevant studies. Furthermore, the study follows established procedures in evidence-based management research, particularly the structured review approach of David Tranfield et al. (2003) and the methodological guidance of Yu Xiao and Maria Watson (2019). For data analysis, the study employs Thematic Analysis as proposed by Braun and Clarke (2006), which allows for the systematic identification, organization, and interpretation of key themes across the selected studies.

**Search Strategy**

A comprehensive and structured search strategy was employed to identify relevant literature on sustainability compliance among SMEs in the food processing sector. The search was conducted across major academic databases, including Scopus, ScienceDirect, SpringerLink, and Google Scholar, which are widely recognized for their extensive coverage of peer-reviewed journals in the fields of sustainability, business management, and development studies. These databases were selected to ensure both breadth and depth in capturing interdisciplinary perspectives that are essential to understanding the complex nature of sustainability practices.

The search process utilized a carefully constructed set of keywords designed to capture the central themes of the study. These included terms such as “SME sustainability Philippines food processing,” “Thailand SME environmental compliance,” and “ASEAN socio-cultural sustainability SMEs.” Additional variations and related terms were incorporated to broaden the scope of the search and ensure that relevant studies were not overlooked. Boolean operators such as AND and OR were systematically applied to refine search results, allowing for both specificity and inclusivity in retrieving literature.

To further enhance the comprehensiveness of the review, backward and forward citation tracking was employed, following the methodological guidance of Xiao and Watson (2019). This involved examining the reference lists of selected studies to identify foundational works, as well as analyzing more recent publications that cited key articles. This iterative process ensured that both seminal and emerging contributions to the field were included, thereby strengthening the overall robustness of the literature base.

**Inclusion and Exclusion Criteria**

The selection of studies was guided by clearly defined inclusion and exclusion criteria to ensure the quality, relevance, and consistency of the literature reviewed. These criteria were established prior to the screening process in order to minimize bias and align with established standards in systematic review methodology (Tranfield et al., 2003).

Studies were included in the review if they were peer-reviewed journal articles or scholarly book chapters, ensuring a high level of academic rigor. Only publications released between 2015 and 2025 were considered, as this time frame captures recent developments and contemporary trends in sustainability practices. Furthermore, the selected studies were required to focus explicitly on SMEs, particularly within the food processing sector or closely related industries, and to address sustainability practices encompassing environmental, social, or governance dimensions. Preference was given to studies situated within the Philippines and Thailand, although research conducted in comparable Southeast Asian contexts was also considered where relevant.

Conversely, studies were excluded if they were not published in English, due to limitations in translation and potential issues in interpretation. Non-empirical works, such as opinion pieces, editorials, and articles lacking methodological rigor, were also excluded to maintain the credibility of the analysis. Additionally, studies that did not directly address SMEs or sustainability-related issues were removed during the screening process. Duplicate records identified across databases were eliminated at the initial stage to ensure accuracy and efficiency in the selection process.

**Study Selection and Screening Process**

The study selection process followed a multi-stage screening procedure consistent with the PRISMA framework. The initial search yielded approximately 120 records, which were compiled and organized for systematic review. During the first stage, duplicate entries were identified and removed. This was followed by a preliminary screening of titles and abstracts to assess the relevance of each study to the research objectives. At this stage, studies that clearly did not meet the inclusion criteria were excluded, resulting in a reduced pool of approximately 80 articles.

Subsequently, a full-text review was conducted to evaluate the methodological quality, analytical depth, and contextual relevance of the remaining studies. This stage involved a more detailed assessment of each article’s research design, data sources, and key findings. Through this process, the number of eligible studies was further narrowed down to 40. From these, 25 studies were selected for final inclusion based on their direct relevance to sustainability compliance among SMEs in the Philippines and Thailand, as well as their contribution to the broader research objectives.

This systematic and staged approach ensured that the final set of studies was both comprehensive and analytically robust, thereby enhancing the validity of the review.

**Data Analysis**

To interpret and synthesize the selected studies, this research employed a thematic analysis approach based on the framework developed by Braun and Clarke (2006). This method is particularly suited for systematic literature reviews, as it allows for the identification of recurring patterns and themes across diverse studies while preserving contextual nuances.

The analysis began with a structured data extraction process, wherein relevant information from each study was systematically recorded using a standardized matrix. Key variables included the authors and year of publication, country of focus, research methodology, type of SME, sustainability practices identified, challenges encountered, socio-cultural influences, and reported best practices. This ensured consistency and comparability across all selected studies.

Following data extraction, the studies were subjected to open coding, an inductive process through which key concepts and recurring ideas were identified and labeled. Rather than relying on predefined categories, this approach allowed themes to emerge organically from the data, thereby capturing the complexity and diversity of sustainability practices in different contexts.

The identified codes were then organized into broader thematic categories aligned with the objectives of the study. These themes included environmental sustainability practices, social sustainability initiatives, structural and institutional constraints, socio-cultural influences, and emerging best practices. This categorization enabled a more structured and coherent analysis of the data.

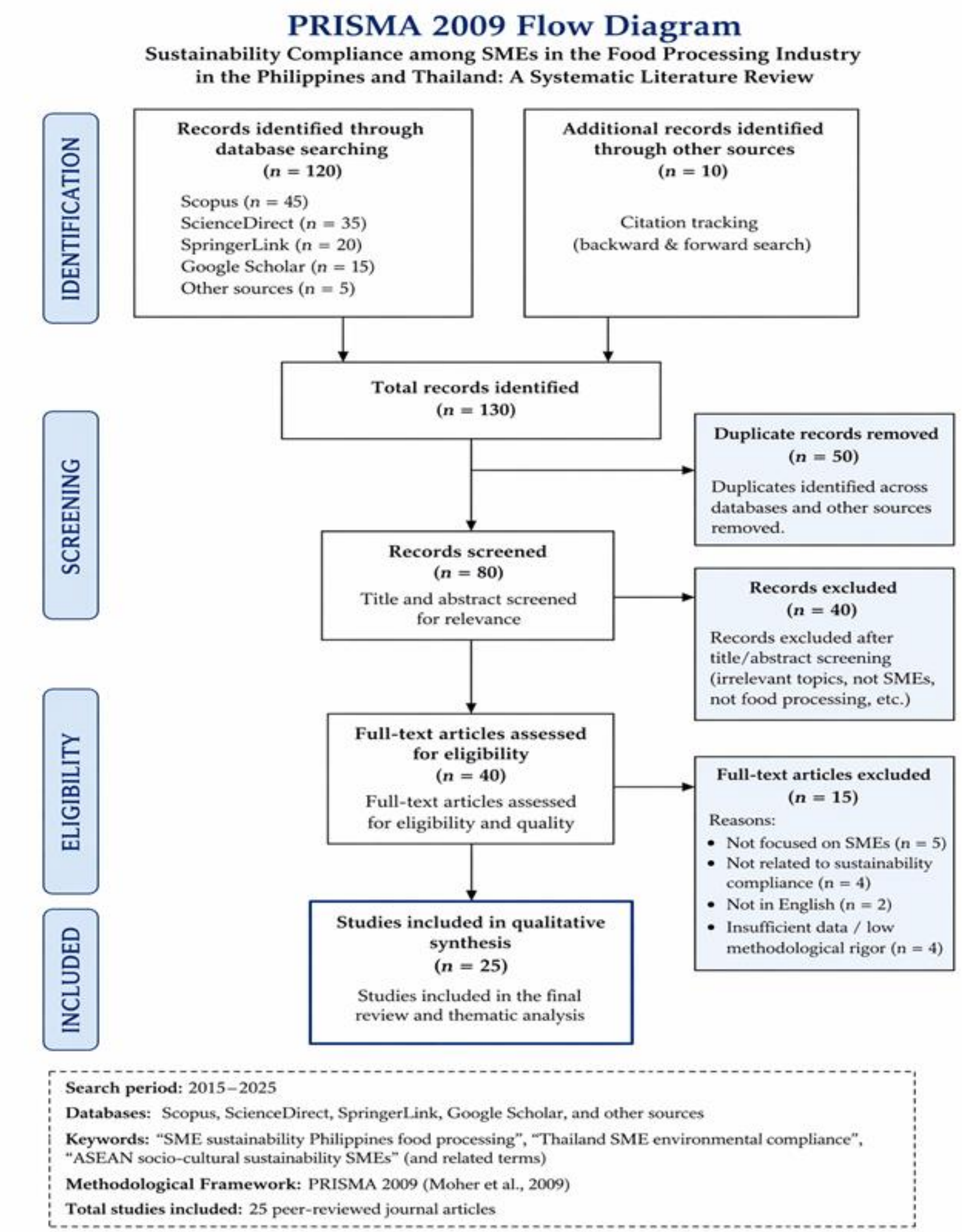
A critical component of the analysis involved a cross-country comparison between the Philippines and Thailand. This comparative approach facilitated the identification of both similarities and differences in sustainability practices, as well as the contextual factors that shape these practices. By examining variations in institutional frameworks, cultural norms, and economic conditions, the study was able to generate more nuanced insights into the dynamics of sustainability compliance.

Finally, the synthesized themes were interpreted in relation to the research questions and existing theoretical perspectives on SME sustainability. Particular emphasis was placed on understanding how socio-cultural embeddedness influences sustainability behavior, thereby providing a deeper and more contextually grounded interpretation of the findings. This integrative approach strengthens the analytical depth of the study and supports the development of more informed and context-sensitive policy recommendations.

### Study Selection Process (PRISMA Flow Diagram)

The study selection process is summarized in Figure 1 using the PRISMA flow diagram. The diagram illustrates the stages of identification, screening, eligibility assessment, and final inclusion of studies. From an initial pool of 120 records, duplicate and irrelevant studies were removed through title, abstract, and full-text screening, resulting in 25 studies included in the final review.

Figure 1. PRISMA Flow Diagram of Study Selection Process



**PRISMA Record Accounting and Study Selection Transparency**

To strengthen methodological transparency in response to the panel's recommendation, the study selection process is reported using the available record counts documented in the review. The initial search identified approximately 120 records across the selected databases. After the preliminary screening of titles and abstracts, approximately 80 records remained; 40 articles proceeded to full-text assessment; and 25 studies were retained for the final synthesis. The original search record did not separately document the exact number of duplicate records removed. Accordingly, this figure is not retrospectively estimated in the present manuscript. The authors recommend that the final submitted version be checked against the database export/reference-manager history so that the exact duplicate count can be entered in the PRISMA diagram before publication.

Table 2. Record accounting for the PRISMA study-selection process

| PRISMA stage | Number of records | Basis/remarks |
|---|---|---|
| Records identified through database searching | ≈120 | Reported in the manuscript's Study Selection and Screening Process. |
| Duplicate records removed | Not separately reported | Exact duplicate count should be verified from the original search/reference-manager records. |
| Records screened by title and abstract | ≈120 initially; ≈80 retained after preliminary screening | Clearly irrelevant records were excluded at preliminary screening. |
| Full-text articles assessed | 40 | Full-text assessment considered design, data sources, methodological quality, and contextual relevance. |
| Studies included in qualitative/thematic synthesis | 25 | Final studies selected for direct relevance to sustainability compliance among SMEs in the Philippines and Thailand. |

Justification for the final sample of 25 studies. The review does not treat 25 as a statistically predetermined sample size. Rather, the final number represents the studies that remained after application of the stated inclusion/exclusion criteria and full-text relevance assessment. The 25 studies were retained because they directly contributed evidence relevant to the review objectives concerning sustainability compliance, socio-cultural influences, comparative practices, barriers and drivers, and emerging best practices among SMEs in the Philippines and Thailand. The final sample should therefore be understood as an eligibility-based evidence set rather than a numerical threshold of sufficiency. This distinction is important because the purpose of an SLR is to identify and synthesize the relevant evidence available under a transparent search and screening protocol.

**Database-Specific Search Procedures and Search Dates**

The databases searched were Scopus, ScienceDirect, SpringerLink, and Google Scholar. The manuscript previously reported the principal search concepts but did not preserve the complete database-specific Boolean strings or exact search dates. To address the panel's recommendation without inventing historical search details, the search strings below are presented as the database-specific search protocol reconstructed from the documented search concepts. The exact dates and any filters used should be checked against the authors' search history before the final submission.

| Database | Search string/protocol | Search date | Filters/limits |
|---|---|---|---|
| Scopus | (SME* OR "small and medium enterprise*" OR "small and medium-sized enterprise*") AND (sustainab* OR "environmental compliance" OR "social sustainability" OR ESG) AND ("food processing" OR "food industry") AND | [VERIFY DATE] | 2015–2025; English; peer-reviewed/relevant scholarly records |

| | | | |
|---|---|---|---|
| | (Philippines OR Thailand) | | |
| ScienceDirect | ("small and medium enterprise*" OR SME*) AND (sustainab* OR "environmental compliance" OR "social sustainability") AND ("food processing" OR "food industry") AND (Philippines OR Thailand) | [VERIFY DATE] | 2015–2025; English; relevant scholarly articles |
| SpringerLink | ("SME" OR "small and medium enterprise*") AND (sustainab* OR "environmental compliance") AND ("food processing" OR "food industry") AND (Philippines OR Thailand) | [VERIFY DATE] | 2015–2025; English; relevant scholarly publications |
| Google Scholar | "SME sustainability" Philippines food processing; "Thailand SME environmental compliance"; "ASEAN socio-cultural sustainability SMEs" | [VERIFY DATE] | 2015–2025; English; relevance screening; backward/forward citation tracking |

Note: The search strategy in the original manuscript also included backward and forward citation tracking. The exact search dates, database result counts, duplicate counts, and filters were not preserved in the manuscript itself; these should be verified from the authors' original search records and entered in the final PRISMA diagram and supplementary materials.

### Strengthened Comparative Synthesis

To strengthen the comparative synthesis, the review distinguishes similarities from country-specific differences and links each comparison to the institutional and socio-cultural conditions identified in the literature. The comparison is organized around sustainability orientation, drivers, barriers, socio-cultural influences, governance mechanisms, enterprise structure, and sustainability motivation. This structure is consistent with the thematic coding described in the data-analysis procedure and allows the Philippines–Thailand comparison to move beyond a descriptive listing of practices toward an interpretation of why the observed patterns differ.

### Conceptual Framework

This study conceptualizes sustainability compliance among SMEs as a product of the interaction between institutional pressures, socio-cultural influences, and organizational capacity. Institutional pressures include government regulations, global market standards, and supply-chain requirements, while socio-cultural influences involve collectivist norms, family ownership structures, relational trust, and community accountability. These factors collectively shape the sustainability practices adopted by SMEs, including environmental management, waste reduction, and socially responsible initiatives.

The framework further assumes that sustainability outcomes differ depending on the balance between formal institutional mechanisms and informal socio-cultural dynamics. In this context, Philippine SMEs tend to exhibit socially embedded sustainability practices, whereas Thai SMEs demonstrate more formalized and export-oriented compliance mechanisms.

## RESULTS AND DISCUSSION

### Sustainability Compliance Practices among SMEs in the Philippines and Thailand

The literature characterizes sustainability compliance among SMEs in the food processing industry in both the Philippines and Thailand as largely incremental, adaptive, and operational rather than fully strategic or institutionally embedded. SMEs commonly implement selective environmental and social practices aligned with immediate operational needs and financial capacities rather than comprehensive sustainability frameworks. Klewitz and Hansen (2016) argue that sustainability-oriented innovation in SMEs often develops gradually because of limited organizational resources and managerial capacities.

In the Philippines, sustainability practices are commonly informal and community-oriented. SMEs frequently engage in localized waste reduction, recycling activities, and resource conservation measures motivated by cost-efficiency and community accountability rather than formal certification systems. Gadenne et al. (2019) and Jenkins (2015) emphasize that many SMEs adopt environmentally responsible practices because of relational obligations within local communities and social expectations from employees and customers.

In contrast, Thai SMEs demonstrate more formalized sustainability compliance due to stronger integration into global production networks and export-oriented food supply chains. Zhu et al. (2016) and Khan et al. (2020) note that Thai SMEs are more likely to adopt internationally recognized standards such as HACCP, GMP, and green supply chain management systems. Participation in global value chains creates pressure for compliance with environmental and quality standards, making sustainability closely associated with competitiveness and market access.

The literature therefore suggests two distinct sustainability pathways. Philippine SMEs rely more heavily on socially embedded and community-driven sustainability practices, while Thai SMEs demonstrate more structured and compliance-oriented approaches shaped by institutional support and global market integration. This supports the argument of Revell and Blackburn (2017) that sustainability among SMEs is highly context-dependent rather than universally standardized.

While the reviewed studies generally portray sustainability compliance as beneficial, the literature also reveals important inconsistencies. Several studies tend to frame sustainability adoption as economically advantageous without sufficiently addressing the unequal resource capacities of SMEs in developing economies. In the Philippine context, informal sustainability practices are often celebrated as adaptive strategies; however, their lack of institutionalization may limit long-term environmental impact and scalability. Similarly, although Thai SMEs demonstrate stronger formal compliance, the literature suggests that sustainability practices are frequently market-driven and externally imposed rather than internally embedded within organizational values. This indicates that compliance does not necessarily equate to transformative sustainability behavior.

**Socio-Cultural Factors Influencing Sustainability Practices**

Socio-cultural factors significantly influence sustainability behavior among SMEs in both the Philippines and Thailand. Existing literature emphasizes that sustainability practices cannot be fully understood through economic or regulatory perspectives alone because business practices in Southeast Asia are deeply embedded within cultural norms and social relationships (Hofstede, 2011).

In the Philippine context, the cultural principle of *pakikisama*, which emphasizes social harmony and interpersonal relationships, strongly influences sustainability behavior. SMEs often prioritize maintaining trust and positive relationships with employees, customers, and surrounding communities. Jenkins (2015) argues that such relational dynamics function as informal governance mechanisms encouraging ethical and socially responsible behavior even where regulatory enforcement is weak.

Similarly, Thai SMEs demonstrate sustainability practices shaped by collectivist values and the cultural norm of *kreng jai*, which emphasizes consideration for others and avoidance of social conflict. Hofstede (2011) explains that hierarchical and collectivist orientations within Thai organizations reinforce compliance through social expectations and respect for institutional authority.

Across both countries, the prevalence of family-owned enterprises further strengthens socio-cultural influences on sustainability practices. Perrini (2016) and Harsanto et al. (2023) observe that family-run SMEs tend to prioritize long-term reputation, social legitimacy, and intergenerational continuity over short-term profit maximization. Sustainability practices therefore emerge not only from regulatory requirements but also from culturally embedded social expectations.

**Comparative Sustainability Approaches in the Philippines and Thailand**

The reviewed literature demonstrates important differences in sustainability approaches between SMEs in the

Philippines and Thailand.

Philippine SMEs generally adopt informal and community-based sustainability approaches. Environmental practices are integrated into everyday operational routines through localized waste management systems, recycling initiatives, and resource conservation strategies. These practices are motivated primarily by cost reduction, social responsibility, and relational obligations rather than formal certification requirements (Li et al., 2020).

In contrast, Thai SMEs demonstrate more formalized and export-oriented sustainability practices. Thailand's stronger integration into global food supply chains requires SMEs to comply with international environmental and quality standards. Zhu et al. (2016) and Testa et al. (2018) argue that global production networks encourage Thai SMEs to adopt structured sustainability management systems, green technologies, and internationally recognized certifications.

Despite these differences, similarities also exist. SMEs in both countries experience financial limitations, limited technical expertise, and operational pressures that hinder comprehensive sustainability adoption. Furthermore, both Philippine and Thai SMEs rely heavily on socio-cultural norms, family ownership structures, and relational networks in shaping sustainability behavior.

These findings suggest that sustainability compliance among SMEs does not follow a single developmental pathway. Instead, sustainability practices emerge through the interaction of institutional conditions, economic pressures, and socio-cultural dynamics specific to each national context.

**Barriers and Drivers of Sustainability Compliance**

The literature identifies several barriers that constrain sustainability adoption among SMEs in both the Philippines and Thailand. Financial limitations remain the most significant obstacle, as many SMEs lack sufficient capital to invest in environmentally sustainable technologies, certification systems, and infrastructure improvements (World Bank, 2020). Ayyagari et al. (2015) and Luken and Stares (2015) similarly emphasize that resource scarcity limits SMEs' ability to fully implement sustainability initiatives.

In the Philippines, these barriers are compounded by weak institutional support, inconsistent regulatory enforcement, and limited access to technical knowledge. Li et al. (2020) argue that many SMEs operate within informal economic environments where sustainability compliance is not consistently monitored or incentivized.

Thai SMEs also face challenges regarding the high costs associated with international certifications and continuous compliance upgrading. Testa et al. (2018) and Filippini and Srinivasan (2021) note that export-oriented SMEs experience constant pressure to align with evolving sustainability requirements imposed by global production networks.

At the same time, the literature identifies important drivers of sustainability compliance. In Thailand, participation in global supply chains strongly motivates SMEs to adopt formal sustainability practices. International buyers and multinational corporations often require compliance with environmental and food safety standards, thereby creating market-based incentives for sustainability adoption (Zhu et al., 2016; Khan et al., 2020).

In the Philippines, community accountability, relational trust, and social legitimacy serve as important informal drivers of sustainability behavior. SMEs often engage in sustainability-related activities to maintain positive relationships with stakeholders and preserve community reputation. Cost-saving opportunities associated with waste reduction and energy efficiency also encourage sustainability adoption in both countries.

The literature also demonstrates a tendency to overemphasize regulatory and financial barriers while underexamining power asymmetries within global supply chains. Export-oriented SMEs often comply with sustainability standards primarily because of pressure from multinational buyers, raising questions regarding the sustainability autonomy of local enterprises. Consequently, sustainability compliance among SMEs may reflect dependency on external market structures rather than genuine organizational sustainability transformation.

Overall, sustainability compliance among SMEs is shaped by a complex interaction between structural constraints and contextual drivers rather than by regulatory enforcement alone.

**Emerging Best Practices Related to Sustainability Compliance**

Despite structural and institutional limitations, SMEs in both the Philippines and Thailand demonstrate adaptive and context-sensitive sustainability practices that may serve as emerging best practices within Southeast Asia.

In the Philippines, community-based sustainability initiatives represent a significant best practice. These include cooperative-led waste management systems, localized recycling programs, and resource-sharing arrangements among SMEs. Such practices are often low-cost, socially embedded, and highly adaptable to local conditions. Gadenne et al. (2019) emphasize that community participation and relational accountability strengthen sustainability orientation even in resource-constrained settings.

Thai SMEs demonstrate best practices associated with formal sustainability integration. Participation in global value chains has encouraged many firms to adopt green production technologies, environmental management systems, and internationally recognized standards such as HACCP and GMP. Zhu et al. (2016) and Khan et al. (2020) suggest that these structured approaches improve both environmental performance and market competitiveness.

Across both contexts, the literature highlights the importance of combining local adaptability with institutional support. Nguyen et al. (2025) and García-Granero et al. (2018) argue that sustainability initiatives are most effective when they align economic feasibility, socio-cultural conditions, and environmental objectives.

To further synthesize the findings of the reviewed studies, Table 1 presents a comparative overview of sustainability compliance practices among SMEs in the Philippines and Thailand. The table highlights the major similarities and differences in sustainability orientation, barriers, socio-cultural influences, governance mechanisms, and sustainability motivations identified across the literature. This comparative synthesis demonstrates how differing institutional environments and cultural contexts shape distinct sustainability pathways among SMEs in both countries.

**Comparative Synthesis of Sustainability Compliance among SMEs**

| **Dimension** | **Philippines** | **Thailand** |
|---|---|---|
| *Sustainability Orientation* | Informal and community-based | Formalized and export-oriented |
| *Main Drivers* | Social legitimacy, community accountability, cost efficiency | Global market requirements, supply-chain pressures |
| *Key Barriers* | Weak institutional support, limited finance, lack of technical expertise | High certification costs, continuous compliance requirements |
| *Socio-Cultural Influence* | *Pakikisama*, relational trust, community ties | *Kreng jai*, hierarchy, collectivist norms |
| *Common Practices* | Recycling, localized waste management, cooperative initiatives | HACCP, GMP, green technologies, supply-chain compliance |
| *Governance* | Informal social accountability | Institutional and market-based compliance |

| | | |
|---|---|---|
| *Mechanism* | | |
| *Enterprise Structure* | Family-owned and community-centered | Export-oriented and globally integrated |
| *Sustainability Motivation* | Social responsibility and operational survival | Competitiveness and international market access |

# CONCLUSION

This study concludes that sustainability compliance among SMEs in the Philippines and Thailand is uneven, incremental, and deeply shaped by structural constraints and contextual realities. Rather than reflecting a linear progression toward standardized sustainability models, SME compliance emerges as a gradual and adaptive process influenced by financial limitations, institutional conditions, and socio-cultural dynamics.

The findings demonstrate that sustainability practices among SMEs are not solely driven by formal regulations or market incentives. Instead, sustainability behavior is strongly shaped by community relationships, cultural norms, and informal governance mechanisms. Philippine SMEs tend to rely on socially embedded and community-oriented sustainability practices, while Thai SMEs demonstrate more formalized and export-driven approaches shaped by global value chains and institutional integration.

Despite persistent barriers, SMEs in both countries demonstrate adaptability by developing localized and context-sensitive sustainability strategies. These findings suggest the need to move beyond one-size-fits-all sustainability frameworks toward more flexible and culturally responsive approaches that recognize the diversity of SME experiences across Southeast Asia.

The study also highlights several areas for future research. First, more empirical and longitudinal studies are needed to examine how sustainability practices evolve among SMEs over time, particularly in developing economies. Second, future research may explore the relationship between sustainability compliance and business performance using mixed-method or quantitative approaches. Third, comparative studies involving additional ASEAN countries could provide broader regional insights into the role of culture and institutional environments in shaping sustainability behavior.

From a policy perspective, governments and development agencies should move beyond compliance-based approaches and adopt culturally responsive sustainability programs tailored to SME realities. Policy interventions should include accessible green financing, localized technical assistance, sustainability education, and collaborative partnerships between SMEs, local governments, and industry organizations. Strengthening institutional support while recognizing informal community-based sustainability practices may improve long-term sustainability adoption among SMEs in Southeast Asia.

Ultimately, sustainability compliance among SMEs is best understood as a dynamic and socially embedded process shaped by the interaction of economic conditions, institutional structures, and cultural values. Recognizing this complexity can contribute to more inclusive, adaptive, and effective sustainability policies for SMEs in Southeast Asia.

**Supplementary Table 1. Summary of the 25 Included Studies**

The following table provides a transparent extraction framework for the 25 studies included in the review. Where the manuscript's reference list does not provide enough information to identify a study's exact methodology, SME sector, sustainability dimension, or limitations, the entry is marked “Not explicitly reported in the present manuscript” rather than inferred. These fields should be completed from the full texts of the 25 included studies before final submission.

| No. | Author(s), year | Country | Methodology | SME sector | Sustainability dimension | Major finding relevant to review | Limitation | Source status |
|---|---|---|---|---|---|---|---|---|
| Bansal & DesJardine, 2015 | Not explicitly reported | Not explicitly reported | Business sustainability/time perspective; contextual/theoretical contribution | Economic, environmental, social sustainability | Not explicitly reported in the present manuscript | Full-text verification required | | |
| Braun & Clarke, 2006 | Not applicable | Not applicable | Thematic analysis methodology | Not applicable | Provides the thematic-analysis framework used in this review | Not explicitly reported in the present manuscript | Methodological source | |
| Del Río et al., 2016 | Not explicitly reported | SMEs; not specified | Policy/eco-innovation review or analytical study—verify full text | Eco-innovation / environmental | Not explicitly reported in the present manuscript | Full-text verification required | | |
| Filippini & Srinivasan, 2021 | Not explicitly reported | SMEs; not specified | Empirical study—verify full text | Environmental compliance | Environmental compliance is examined in relation to firm performance | Full-text verification required | | |
| Gadenne et al., 2019 | Not explicitly reported | SMEs; not specified | Empirical study | Environmental awareness/practices | SMEs' environmental awareness and practices are relevant to adoption of responsible practices | Full-text verification required | | |
| Harsanto et al., 2023 | Not explicitly reported | SMEs; not specified | Systematic review | Sustainability-oriented innovation | Sustainability-oriented innovation in SMEs is synthesized as a relevant sustainability pathway | Full-text verification required | | |
| Hillary, 2017 | Not explicitly reported | SMEs; not specified | Review | Environmental management systems | Reviews environmental management systems in SMEs | Full-text verification required | | |
| Hofstede, 2011 | Cross-cultural | Not SME-specific | Conceptual/cultural framework | Socio-cultural | Provides cultural dimensions used to interpret collectivism, hierarchy, and related norms | Not explicitly reported in the present manuscript | Theoretical/ cultural source | |
| Jenkins, 2015 | Not explicitly reported | SMEs; not specified | Review/conceptual/ empirical—verify full text | Social responsibility | Supports the role of relational/ community expectations in SME responsibility | Full-text verification required | | |
| Klewitz & Hansen, 2016 | Not explicitly reported | SMEs; not specified | Systematic review | Sustainability-oriented innovation | SME sustainability-oriented innovation develops incrementally under resource constraints | Full-text verification required | | |
| Li et al., 2020 | Not explicitly reported | SMEs; not specified | Empirical/quantitative—verify full text | Sustainability performance/green innovation | Links SME sustainability performance with green innovation | Full-text verification required | | |
| Luken & Stares, 2015 | Global | SMEs; not specified | Comparative/global study—verify full text | Environmental performance | Resource constraints are identified as important limits on SME environmental performance | Full-text verification required | | |
| Nguyen et al., 2025 | ASEAN | SMEs | Review/empirical—verify full text | Green practices | Identifies drivers and barriers to green practices in ASEAN SMEs | Full-text verification required | | |
| Perrini, 2016 | Not explicitly reported | SMEs | Conceptual/empirical—verify full text | CSR/social sustainability | Family-run SMEs may prioritize reputation, legitimacy, and continuity | Full-text verification required | | |
| Revell & Blackburn, 2017 | Not explicitly reported | SMEs | Review/empirical—verify full text | Sustainability/CSR | Supports a context-dependent business case for SME sustainability | Full-text verification required | | |
| Schaltegger & Wagner, 2017 | Not explicitly reported | Not SME-specific | Conceptual review | Sustainable entrepreneurship/ innovation | Provides a broader framework linking sustainability and innovation | Full-text verification required | | |
| Stubbs & | Not | Not SME- | Conceptual | Sustainability | Provides conceptual | Full-text verification | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Cocklin, 2015 | explicitly reported | specific | | models | grounding for sustainability models | required | | |
| Tran et al., 2025 | Not explicitly reported | SMEs; not specified | Empirical/review—verify full text | Socio-cultural sustainability | Examines socio-cultural influences on SME sustainability practices | Full-text verification required | | |
| Tran, 2018 | Southeast Asia | Food supply chains | Review/analytical—verify full text | Supply-chain sustainability | Provides Southeast Asian food-supply-chain context relevant to sustainability | Full-text verification required | | |
| Yoshino et al., 2023 | Asia | SMEs | Policy/economic analysis—verify full text | Green finance | Highlights green finance as a sustainability-enabling mechanism for SMEs | Full-text verification required | | |
| Zhu et al., 2016 | Not explicitly reported | SMEs; not specified | Empirical/analytical—verify full text | Green supply chain management | Supports the role of green supply-chain management and structured compliance | Full-text verification required | | |
| Ayyagari et al., 2015 | Global | SMEs | Global empirical/economic study | Economic/ structural conditions | Highlights the scale and economic importance of SMEs and resource constraints | Full-text verification required | | |
| Khan et al., 2020 | Not explicitly reported | SMEs; not specified | Empirical/analytical—verify full text | Green supply-chain management | Supports supply-chain pressures as a driver of formal sustainability practices | Full-text verification required | | |
| Testa et al., 2018 | Not explicitly reported | SMEs | Empirical study | Environmental practices/ compliance | Shows how external requirements and internalization shape environmental practices | Full-text verification required | | |
| García-Granero et al., 2018 | Not explicitly reported | SMEs | Empirical study | Eco-innovation | Links eco-innovation measurement to SME sustainability and innovation | Full-text verification required | | |

Supplementary-materials note. The manuscript's current evidence base establishes the final inclusion of 25 studies and describes the selection stages, but it does not preserve the original database export, exact duplicate count, exact search dates, or complete article-level extraction data. These items should be verified from the authors' research records before submission. The supplementary table above is therefore intentionally transparent about fields that cannot be established from the manuscript alone.

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