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Research Article

Environmental, Social, and Governance Knowledge, Practices, and Business Sustainability Among Food and Beverage Manufacturing and Processing Companies

Sarah Fe Sharon L. Gabriel[1]*, Albim Y. Cabatingan[2], Gensbergh G. Rago[3], Peter G. Narsico[1]

[1]Center for Advanced Studies, College of Management, Business, and Accountancy, Cebu Institute Technology-University, Cebu Philippines
[2]University of the Visayas, Cebu, Philippines
[3]Accountancy Department, College of Management, Business, and Accountancy, Cebu Institute Technology-University, Cebu Philippines

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**Corresponding author:*
E-mail:
sarahfe.gabriel@cit.edu

ABSTRACT

The knowledge of environmental, social and governance (ESG) is not necessarily translated in a uniform way into organizational practices or business sustainability especially for the food and beverages manufacturing and processing companies operating under different organizational conditions. This study identified the levels and relationships of ESG knowledge, ESG practices and business sustainability of selected food and beverage manufacturing and processing companies in Cebu City, Mandaue City and Lapu-Lapu City, Philippines. Data were collected from 100 purposively selected respondents and analyzed using partial least squares structural equation modeling (PLS-SEM) through a quantitative, descriptive and predictive cross sectional survey design. Respondents reported high levels of ESG knowledge, ESG practices, and business sustainability. Environmental knowledge was significantly related to environmental and social practices and business sustainability. Governance knowledge was significantly associated with governance and social practices. Social knowledge was significantly associated with governance practices. Among the ESG practice dimensions, governance practices showed the strongest statistically significant direct association with business sustainability. The structural model explained 51.8% of the variance in business sustainability. The results led to the proposal of a four-step Business Sustainability Framework to bridge ESG knowledge with organizational practice, governance mechanisms and monitoring of sustainability outcomes. Overall, the study suggests that knowledge about ESG in itself may not be enough. Its importance for

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business sustainability seems to depend on how knowledge is translated into organizational practices, in particular, through improved governance and accountability.

Keywords: *Environmental, Social, and Governance (ESG); ESG knowledge; ESG practices; business sustainability; Food and beverage manufacturing and processing; Partial Least Squares Structural Equation Modeling (PLS-SEM).*

Introduction

Environmental, social and governance (ESG) issues have become increasingly important to businesses seeking long-term sustainability. This is particularly the case for food and beverage manufacturers and processors, as many ESG issues are a result of their day-to-day activities. Their water and energy consumption, waste and packaging management, product quality and safety control, materials procurement, employee treatment and regulatory compliance may have major implications for the company and its stakeholders. Thus, sustainability isn't merely about ESG commitments or reporting on company actions. It also requires companies to acknowledge the ESG-related problems they are facing and act accordingly in their actual practices (Alkaraan et al., 2022; Alsayegh et al., 2020). Research in the manufacturing industry shows that these efforts may contribute to sustainability performance, especially when leading to innovation and improvements in business practices (Zhou et al., 2023).

"There's a difference between knowing about ESG and doing ESG." While people within a company may understand environmental, social and governance concerns, this does not always translate into those concerns being integrated into everyday business practices. It becomes difficult when faced with scarce resources and unclear roles and responsibilities, competing priorities and weak monitoring. Poor communication, lack of expertise and lack of organizational support can also prevent implementation of ESG initiatives as planned (Mackenzie & Brown, 2026). And it can happen the other way round. If employees have a limited understanding of the importance of ESG practices, a company may already be engaging in some ESG practices because of regulation or established procedures. Thus, ESG knowledge and ESG practices are to be investigated separately. This helps to see whether what people know about ESG is reflected in what the company does and how each one relates to business sustainability (Barney, 1991; Hair et al., 2022).

Food and beverage manufacturing and processing also presents ESG issues, at various levels of production and throughout the supply chain. The company's operations and performance can be influenced by the way the company uses resources, its production process and its interaction with the environment (Iliopoulou et al., 2024). These include raw materials, energy use, packaging, distribution, employees, food safety and waste and can affect costs, risks, reputation and business continuity. However, for sustainable manufacturing companies have to include environmental, social and economic factors in their way of doing business (Karuppiah et al., 2024). In addition, companies are expected to respond to the expectations of people and groups who are affected in their activities. Customers want products that are safe and reliable. Workers want good, safe places to work. The regulators require your help. People want business to do more, ' he says. Therefore, to meet such expectations, companies should be aware of ESG issues concerning their operations and consider them in their daily decisions (Mastos & Gotzamani, 2022).

The study draws on several theoretical perspectives to understand why ESG knowledge emerges in the organizations and how this information is translated into actual practices. Stakeholder theory suggests that organizations should consider the expectations of those groups that are affected by their activities. The resource-based view (RBV) stresses the significance of internal knowledge, capabilities and routines in improving organizational performance (Freeman, 1984; Barney, 1991;

Wernerfelt, 1984). Organizations are not divorced from their environment. Legitimacy theory emphasizes the importance of backing practices that are considered suitable by society and other stakeholders (Deegan, 2002; Suchman, 1995) while institutional theory takes into account the impact of rules and norms, professional standards and industry expectations on organizational practices (DiMaggio & Powell, 1983; Scott, 2014). These perspectives taken together indicate that ESG practices evolve through a dynamic process of interaction between what an organization knows and can do internally, and what stakeholders, institutions, and society expect it to do. In the context of locally operating food and beverage manufacturers and processors, these theoretical perspectives are particularly relevant because ESG expectations must ultimately be translated into everyday decisions concerning resources, production, employees, compliance, and stakeholder responsibilities. This integrated view is consistent with Narsico (2026a), whose Integrated Dynamic Self-Sufficiency (IDSS) Framework conceptualizes sustainability-related capacity as emerging from the interaction of interdependent elements rather than from isolated resources or capabilities. Although developed in the context of sustainable community development, the framework reinforces the broader systems perspective that durable outcomes depend on the alignment and integration of multiple internal, relational, and structural conditions.

In addition, signaling theory and upper echelons theory further explain how ESG practices may link organizational actions with stakeholder perceptions and managerial decision-making. When information about organizational conduct is incomplete, signaling theory suggests that credible organizational practices, policies, and performance information can signal commitment and reduce uncertainty between stakeholders (Spence, 1973). Meanwhile, upper echelons theory emphasizes the way senior managers' experience, values and interpretations can influence strategic priorities, the distribution of resources and organizational responses to ESG concerns (Hambrick & Mason, 1984; Hambrick, 2007). These theories, alongside stakeholder, resource-based, institutional, and legitimacy perspectives, offer complementary explanations of the ways in which ESG knowledge may be influenced by internal and external factors and translated into organizational practices in relation to business sustainability.

Firms differ in their resources, organizational structures, reporting systems, technologies and vulnerability to stakeholder and regulatory pressures. Thus, findings from large publicly traded firms may not capture the situation in smaller, privately owned, or regionally operating firms, where dedicated sustainability personnel and formal ESG systems might be less robust. Research on SMEs also indicates that environmental, social and governance practices should be treated separately, considering that each dimension may be differentially associated with company performance and risk. Thus, aggregating them into a single ESG measure may lose relevant heterogeneity across the three dimensions (Garrido-Ruso et al., 2024). Similar concerns are raised in the developing and emerging-market contexts, where institutional conditions and the organizational environment may shape the perception and implementation of firms' environmental and social responsibilities (Alshbili et al., 2021; Shalhoob & Hussainey, 2023). Thus, the organizational context is crucial in understanding how ESG knowledge is enacted and how such enactments relate to business sustainability. For example, manufacturing firms can improve their ESG performance through green technological innovation, but this is conditional on firm characteristics, resources, and regulatory settings (Yang et al., 2024).

For instance, work on manufacturing and trading companies reveals that investing in employees and communities can result in improved social results, particularly if the sustainability agenda is introduced at all levels of the company (Cantele et al., 2024). Another piece of the puzzle is governance, as accountability, ethical decision making, compliance and management oversight all influence how these responsibilities are performed.

With the growing volume of ESG research, the evidence on the linkages of specific dimensions of ESG knowledge with respective organizational practices and business sustainability remains context-dependent particularly among

locally operating food and beverage manufacturing and processing companies. The findings from large or publicly listed companies are not easily generalizable to companies with varying resources, reporting systems, technologies and stakeholder pressures (Alshbili et al., 2021; Shalhoob & Hussainey, 2022). Moreover, treating ESG as a single overall construct can obscure the distinctions between its environmental, social and governance dimensions and their link with company practice and sustainability. Therefore, there is a need to explore the dimension level of ESG knowledge and practices, and which relationships are supported in the local setting. This study fills this gap by studying the relationships of environmental, social and governance knowledge, its corresponding practices and business sustainability of selected food and beverage manufacturing and processing companies in Cebu City, Mandaue City and Lapu-Lapu City, Philippines.

As organizations may acquire knowledge of sustainability-related responsibilities, risks and expectations through environmental, social and governance (ESG) knowledge, such knowledge does not necessarily translate uniformly into organizational practices or improved business sustainability. It is particularly relevant to food and beverage manufacturers and processors, where the environment, employee and stakeholder concerns, governance and business continuity are part and parcel of day-to-day operations. Thus, this research examined the extent and association of ESG knowledge, ESG practices, and business sustainability of selected food and beverage manufacturing and processing companies in Cebu City, Mandaue City and Lapu-Lapu City. Specifically, it addressed the following questions: (1) What are the reported levels of knowledge on ESG, practices on ESG and business sustainability of the respondents? (2) What are the relationships between the dimensions of ESG knowledge and the dimensions of ESG practices in terms of environmental, social and governance aspects? (3) What are the dimensions of ESG knowledge and ESG practices that significantly predict business sustainability? (4) The extent to which the structural model explains the variance in ESG practices and business sustainability? (5) What business sustainability framework can be developed from the findings of the study?

In line with the specific research questions and the structural relationships examined in the study, the following null hypotheses were tested: H_{01}: There are no statistically significant relationships between the environmental, social and governance dimensions of ESG knowledge and the dimensions of ESG practices. H_{02}: The dimensions of ESG knowledge and ESG practices are not significant predictors of business sustainability. H_{03}: The variance in ESG practices and business sustainability is not significantly explained by the structural model.

Conceptual Model of ESG Knowledge, Practices, and Business Sustainability

The study model consists of three knowledge dimensions, environmental, social, and governance knowledge; three practice dimensions, environmental, social, and governance practices; and the business sustainability construct as the outcome. The model tests direct relationships among the knowledge and practice dimensions and among the knowledge/practice dimensions and business sustainability. Even though the ESG practices can theoretically serve as a mediator of knowledge implementation, the current study cannot state that the mediation has taken place unless the test for indirect effects is conducted. Thus, the model arrows can be viewed as proposed relationships rather than proven causality. (Hair et al., 2022).

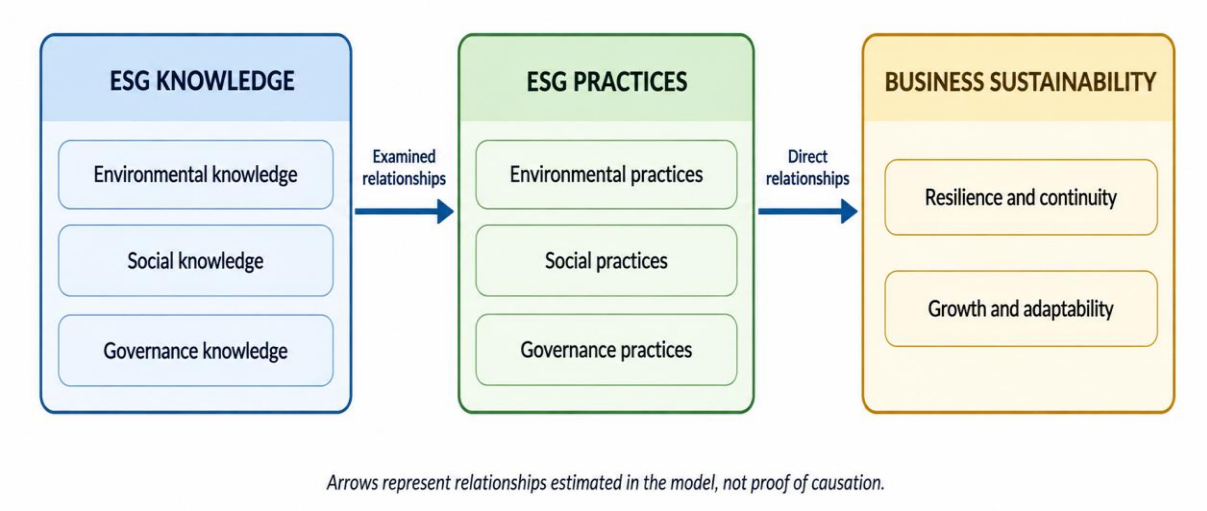


Figure 1. Study model linking ESG knowledge, ESG practices, and business sustainability.

The three dimensions should be treated separately because, based on the empirical results, the estimated associations differ across each dimension. This implies that combining all dimensions to come up with an overall ESG score would obscure these differences. In addition, since there are problems with the measurement of governance and social knowledge, the distinction between these two constructs needs to be verified first.

Methods

Research Design and Setting

The methodology for this research was a quantitative, descriptive and predictive, cross sectional survey design. The descriptive aspect entailed the description of the extent of ESG awareness, ESG practices, and business sustainability. The predictive element was to estimate the relationships between the variables used in the research through partial least squares structural equation modeling (PLS-SEM). The cross-sectional design involves collecting data at a certain point in time and not over time. (Setia, 2016).

Research Respondents and Sampling Technique

The researchers used the purposive sampling method in choosing 100 respondents from the food and beverage manufacturing and processing companies in Cebu City, Mandaue City, and Lapu-Lapu City, Philippines. The respondents who were eligible were business owners, managers, supervisors, and employees who knew enough about their organizations' operations, environmental, social, and governance (ESG) activities, and sustainability practices. Establishments that were inactive, businesses outside the scope of the industry, companies that refused to participate, and individuals who did not have sufficient knowledge about the organization were excluded. This sampling approach was appropriate because there was no comprehensive database of eligible establishments and the need to collect relevant organizational insights. The final sample comprised 100 individual respondents from the participating food and beverage manufacturing and processing companies. The use of individual respondents provided access to employees directly familiar with organizational operations and ESG-related activities; however, their responses may not fully capture organization-level strategic, financial, or sustainability information. Adequacy of the sample for partial least squares structural equation modeling (PLS-SEM) with SmartPLS was evaluated using the ten-times rule, which considers the largest number of structural paths pointing to a single endogenous construct or the largest number of formative indicators used to measure a construct, as appropriate. The unit of analysis was the individual respondent and the data was used to test the hypothesized relationships among ESG knowledge, ESG practices and business sustainability and to inform the proposed Business Sustainability Framework.

Instrument and Measures

Data were collected through a structured questionnaire. ESG knowledge and ESG practices were measured in terms of environmental, social and governance dimensions. Business sustainability items were financial resilience, sales growth, integration of ESG into long-term strategy and adaptability to changing consumer demand. A four-point Likert-type response scale was used for the instrument. Knowledge responses ranged from 1 (not knowledgeable) to 4 (very knowledgeable), and practice responses ranged from 1 (not practiced at all) to 4 (highly practiced). The scale used in the study was summarized to measure business sustainability.

Since the study is based on respondent reports, the measures are perceptions and reported organizational conditions rather than independent audits of environmental, social, governance, or financial performance. Future research could improve measurement by triangulating questionnaire responses with documentary evidence such as waste and energy records, training logs, compliance findings, staff turnover, food-safety indicators and financial information where access and confidentiality permit (Podsakoff et al., 2003).

Data Collection and Ethical Considerations

This survey was carried out with all the necessary academic and organizational approvals. The study participation was voluntary and the respondents were informed about the purpose of the research and the use of the responses. They could also participate without pressure or obligation. The study was conducted in confidence and no unnecessary identifying information of individual respondents was used in the reporting of the findings. The data collected were treated responsibly and used solely for academic and research purposes. It was mentioned that these measures protected the respondents and made sure that the study was conducted in an ethical and responsible manner.

Data Analysis

Respondent and company profiles were summarized by frequencies and percentages. Means and standard deviations were used to describe the reported levels of ESG knowledge, ESG practices, and business sustainability. To evaluate the measurement and structural models, PLS-SEM was performed using SmartPLS. The measurement assessment included internal consistency, convergent validity, discriminant validity and fit of the model. Structural assessment was done through standardized path coefficients, p-value, coefficient of determination (R2), adjusted R2 and effect size (f2). The usual $p < .05$ criterion was used to determine statistical evidence against a null path coefficient but p-values were not interpreted as an indication of practical significance or evidence of causation.

Interpretation Safeguards

Three safeguards for interpretation. First, a statistically significant path indicates evidence of an association in the estimated model, conditional on the data and assumptions; it does not prove that changing the predictor will cause the outcome to change. Second, a nonsignificant path does not mean that there is no relationship, especially where the sample size or quality of the measurement may limit precision. Third, construct-level interpretations are valid only if the measurement model is valid. These safeguards are especially important due to the study's noted discriminant-validity and fit concerns with governance knowledge and social knowledge (Setia, 2016; Hair et al., 2022).

Results and Discussions

Respondents and Company Profile

There were 100 respondents coming from the cities of Cebu City (65%), Lapu-Lapu City (25%), and Mandaue City (10%). The majority of the respondents (84%) were rank-and-file employees and 16% were non-rank-and-file personnel. Moreover, 78% reported employment in organizations with 1,000 employees or fewer. These characteristics describe the respondents and the organizational contexts in which they worked; they do not change the individual respondent as unit of analysis. Table 1. Summary of the profile.

Profile attributes are useful for identifying results from this study A high proportion of rank-and-file respondents indicates that these surveys mainly reflect employee opinions about organizational processes they are

involved in, but might lack information on strategic decision-making, formal environmental sustainability reports, and overall company financials. Distribution of responses among these three locations shows a higher proportion from respondents to those living in Cebu City. Accordingly, conclusions should be framed around the participating sample rather than the entire regional industry (Setia, 2016).

Table 1. Respondent and Organizational Profile (n = 100)

Demographics	Category	*n*	%
Location	Cebu City	65	65%
	Lapu-Lapu City	25	25%
	Mandaue City	10	10%
Years in operation	5 years and below	10	10%
	6–10 years	25	25%
	11–15 years	10	10%
	More than 20 years	55	55%
Number of employees	1,000 or fewer	78	78%
	More than 1,000	22	22%
Job level	Rank-and-file	84	84%
	Non-rank-and-file	16	16%

As can be observed in Table 1, the respondents were from organizations with different geographical locations, years of operation, size of workforce and employee levels. The respondents mainly came from Cebu City (65%), with the rest being from Lapu-Lapu City (25%) and Mandaue City (10%). More than half (55%) were affiliated with organizations that had been in operation for more than 20 years, suggesting that a substantial portion of the responses came from relatively established businesses. Most respondents also worked in organizations with 1,000 or fewer employees (78%) and 84% were rank-and-file employees. The profile suggests that the findings are mainly from the perspective of operational staff in established but rather small organizations in the three study locations. Thus, the findings should be viewed primarily in the light of the characteristics of the participating respondents and organizations, rather than being generalized to the wider food and beverage manufacturing and processing industry.

Levels of ESG Knowledge, ESG Practices, and Business Sustainability

The results obtained from the description tend to show high evaluations in the three main variables of the study. The level of ESG knowledge among respondents was found to be very high with a mean of 3.54 (SD = 0 .360). The mean for ESG practices was 3.54 (SD = 0.350), and it was classified as highly practiced, which meant that ESG principles were also present in organizational activities. Business sustainability also got mean 3.54 (SD = 0.425), which is very sustainable rating. The three variables had the same overall mean but different standard deviations, indicating some variation in the way the respondents rated each area. Table 2 presents the descriptive results of ESG knowledge, ESG practices and business sustainability.

Table 2. Descriptive Statistics for ESG Knowledge, ESG Practices, and Business Sustainability

Construct	Mean	SD	Interpretation
ESG knowledge	3.54	0.360	Very knowledgeable
ESG practices	3.54	0.350	Highly practiced
Business sustainability	3.54	0.425	Very sustainable

Similar measures imply favorable self-reporting scores on all three broad measures. It does not imply that the performance in each of the ESG dimensions is identical, nor does it imply that these organizations have confirmed their sustainability results through independent verification. The positive scores could imply true knowledge and action; however, they can also be due to social desirability, limited knowledge of the system in the whole organization by the respondents, or common method biases due to using the same questionnaire for both predictors and outcome. These alternatives cannot be distinguished from the available data (Podsakoff et al., 2003).

High scores for managers may be viewed positively by the organization and seen as a positive beginning point for performance evaluations. The organization could start off with using their baseline scores and then compare their perceptions with any available documents and performance measures. For instance, the issue of environmental practice could be considered together with data on energy, water, waste, and packaging; the issue of social practice could be reviewed along with employee training, safety, grievances, and retention documents; while governance could be measured with responsibilities, compliance, and corrective actions documentation.

Measurement Model: Reliability and Validity

The measurement model evaluation indicated that the reflective constructs generally had acceptable internal consistency and reliability. Cronbach's alpha, rho A and composite reliability value for Environmental Knowledge, Social Knowledge, Governance Knowledge and Business Sustainability was above the recommended threshold of 0.70. In terms of convergent validity, Environmental Knowledge, Social Knowledge and Business Sustainability had average variance extracted (AVE) values above 0.50, while Governance Knowledge yielded AVE of 0.423. The lower AVE for Governance Knowledge indicates weaker convergent validity for this construct and therefore warrants caution when interpreting structural paths involving governance knowledge. Accordingly, governance-related path estimates are treated as indicative associations within the present sample rather than definitive evidence of relationships between distinct constructs. Furthermore, the discriminant validity was examined by using the Fornell–Larcker criterion which indicated that the square root of the average variance extracted (AVE) for each construct was higher than its correlations with other constructs, thus proving the discriminant validity of Business Sustainability, Environmental Knowledge, Governance Knowledge, and Social Knowledge. The results demonstrate that the constructs are empirically distinct according to the Fornell-Larcker criterion. The SRMR value was 0.087 also for the saturated and estimated models. This is slightly above the often-recommended threshold of 0.08 but below the more liberal threshold of 0.10 used in PLS-SEM research (Hair et al., 2022). Thus, the SRMR indicates an acceptable but not optimal level of model fit and supports cautious interpretation of the structural results alongside the other measurement and validity diagnostics.

Explanatory Power of the Structural Model

Explanatory power of the structural model for each endogenous construct was determined using coefficient of determination (R^2) and adjusted R 2. These measures provide an indication of the proportion of the variation in each outcome that can be explained by the predictors in the model. Reviewing both values provides a more comprehensive picture of the ability of the proposed relationships to explain the different dimensions of ESG practices and business sustainability. This study evaluates the environmental, social and governance dimensions of practice and business sustainability as the main outcome of interest. The R^2 and adjusted R^2 values of these endogenous constructs indicating the amount of variance explained by the respective predictors are presented in Table 3.

Table 3. Explanatory Power of the Structural Model

Endogenous construct	R^2	Adjusted R^2
Business sustainability (BS)	0.518	0.487
Environmental practices (EP)	0.687	0.677

Endogenous construct	R^2	Adjusted R^2
Governance practices (GP)	0.648	0.636
Social practices (SP)	0.661	0.650

Explanatory power

The structural model was able to explain 51.8% of the variance in business sustainability (R^2 = 0.518; adjusted R^2 = 0.487), 68.7% in environmental practices, 64.8% in governance practices, and 66.1% in social practices. In this case, then, the structural model explained a moderate amount of variance in the dependent business sustainability construct as well as more variance in each of the practice constructs. Table 3 provides the R^2 and adjusted R^2 reported.

R^2 refers to the proportion of variance in the endogenous construct that is explained by its predictors in the estimated structural model, and the R^2 measure does not indicate causal explanation or even whether the model will be equally predictive in another sample. The difference between R^2 and adjusted R^2 indicates that the explanatory estimate has been adjusted for the complexity of the model. Performance in predicting the construct in future cases requires a different analysis altogether. (Hair et al., 2022).

Structural Relationships Among ESG Knowledge, ESG Practices, and Business Sustainability

Table 4 presents the structural relationships that are statistically significant and derived from the PLS-SEM analysis. These relationships indicate which dimensions of ESG knowledge were significantly related to specific ESG practices and which dimensions of ESG knowledge and practice were significantly related to business sustainability. The direction, relative strength and statistical significance of each relationship are presented as standardized path coefficients (β), t-values and p-values, respectively. The table only lists paths that meet the study's criterion for statistical significance, and nonsignificant relationships are discussed separately in the subsequent analysis.

Table 4. Statistically Significant Structural Paths in the Reported PLS-SEM Model

Relationship supported in reported model	β	p-value
Environmental knowledge → Environmental practices	0.609	.004
Environmental knowledge → Social practices	0.290	.028
Governance knowledge → Governance practices	0.302	.009
Governance knowledge → Social practices	0.416	.001
Social knowledge → Governance practices	0.504	< .001
Environmental knowledge → Business sustainability	0.354	.029
Governance practices → Business sustainability	0.548	.001

Note. β denotes the standardized path coefficient. Paths not listed did not meet the $p < .05$ criterion in the reported model. Statistical significance does not establish causation.

Dimension-Specific Knowledge–Practice Relationships

The path estimates revealed several significant relations between ESG knowledge and ESG practices. Environmental knowledge was positively associated with environmental practices (β = 0.609, p =.004) which indicates that the greater the knowledge of environmental issues, the greater the environmental practices. Moreover, the environmental knowledge was positively associated with the social practices (β = 0.290, p =.028) indicating that its impact might not be limited to the environmental dimension. Governance knowledge showed a similar pattern, with positive associations to governance practices (β = 0.302, p =.009) and social practices (β = 0.416, p =.001). Conversely, social knowledge was positively related to governance practices (β = 0.504, p <.001). The results suggest that the relationship between knowledge and practice regarding ESG is not always present in the same ESG dimension. Knowledge in one domain may be relevant for practices in another domain. This means

possible links between environmental, social and governance issues in organizational practices. In addition, the remaining knowledge to practice paths were not statistically significant, not reaching p<.05 (Hair et al., 2022).

The relationship is differentiated rather than identical. The relation between environmental knowledge and environmental practice is the strongest of all the other knowledge-practice relationships identified, just like expected, because the relationship between environmental risk awareness and environmental procedures could exist. The relation between environmental knowledge and social practice could mean that sustainability issues are dealt with in the transcending of function-based borders, even though cross-sectional research cannot provide reasons for this relation existing.

Knowledge pertaining to the governance and social practices was linked to governance knowledge, whereas social knowledge was connected to governance practices. One such way of explaining it would be that employee and stakeholder concerns can sometimes overlap with processes of accountability and management. Yet this is only an interpretation and not the measurement of any actual mechanisms. Accordingly, the measurement concerns involving Governance Knowledge, including its lower AVE and the noted discriminant-validity issue, warrant caution in interpreting governance-related path coefficients, even where these paths are statistically significant.

Nonsignificant paths must not be interpreted as the irrelevance of knowledge in a particular field. Nonsignificant means the path was not significant in this sample using the criteria used. Reasons might include: overlapping measurements, lack of power, uncertainty, weak relationship, and others. Future research should consider testing such paths with different samples and different measures that can distinguish between knowledge awareness, implementation and impact. (Hair et al., 2022).

Direct Relationships with Business Sustainability

Business sustainability was positively directly associated with environmental knowledge (β = 0.354, p = .029). Governance knowledge (β = 0.128, p =.463) and social knowledge (β = −0.209, p =.172) were not significant. The governance practices of the three dimensions of practice were positively and directly related to the business sustainability (β = 0.548, p =.001). The reported model suggested that environmental practices (β = −0.180, p = .384) and social practices (β = 0.131, p = .379) were not statistically significant (Hair et al., 2022).

Of all the direct links to business sustainability described above, governance practice was the path with the highest direct coefficient among all the other paths. This shows the importance of focusing on aspects like assigning responsibility, ethical considerations, compliance, decision-making transparency, and management review as some important areas to focus on in the studied companies. However, this does not mean that governance practice is sufficient for ensuring sustainability on its own.

The positive relation between environmental knowledge and sustainable business is also worth mentioning. Knowledge can help the identification of inefficiency of resources, the need of meeting environmental requirements and sustainability risks. However, the relationship can be bidirectional and affected by some omitted variables, because of the lack of temporal order within the study, for example, environmentally aware firms may spend more to acquire knowledge about ESG issues. Thus, the study confirms the significance of environmental knowledge but cannot identify the underlying mechanism. (Alkaraan et al., 2022; Alsayegh, et al., 2020).

The lack of any statistically significant direct links between governance knowledge and social knowledge on the one hand and sustainable business on the other hand does not mean that these dimensions are irrelevant. It might be possible that there are indirect relationships between them or that implementation of these dimensions is required in order to affect the organizational outcome.

One interpretive issue concerns coefficient direction. The estimated direct path from social knowledge to business sustainability was negative (β = −0.209) but did not meet the selected statistical significance criterion (p = .172). It should not be presented as evidence that social knowledge harms sustainability. The estimate

is uncertain under the model and may be sensitive to construct overlap, sample composition, or the simultaneous inclusion of correlated predictors. A negative coefficient in a multivariable model can also differ from a simple bivariate association because it represents the predictor's estimated association conditional on the other included constructs. Without confidence intervals and further diagnostic analysis, the appropriate conclusion is that the study did not find sufficient evidence of a direct association for this path.

Effect Size and Practical Importance

A p-value does not inform you of the practical magnitude of a predictor's contribution. The study has reported f2 effect size of 0.219 for governance practices in predicting business sustainability which is within the medium effect range under the conventions used in the study (0.02 small, 0.15 medium and 0.35 large). This finding is over and above the significant path coefficient, showing that governance practices contributed significantly to the explained variance of the model according to the specified effect-size metric (Hair et al., 2022). Table 5 shows the reported f 2 values for predictors of business sustainability.

Effect size should be interpreted together with the coefficient, uncertainty, measurement quality, and business context. A medium f^2 does not guarantee that a governance intervention will deliver a particular financial return, nor does it identify which individual governance procedure is most effective. Managers should therefore pilot improvements, establish baselines, monitor implementation, and evaluate whether indicators change over time. Future reporting should provide the full f^2 values for all paths, confidence intervals where available, and transparent explanation of how the values were computed.

Table 5. Effect Sizes (f^2) of Predictors of Business Sustainability

Predictor	f^2	Conventional interpretation
Environmental knowledge	0.080	Small
Environmental practices	0.021	Small
Governance knowledge	0.011	Below small-effect convention
Governance practices	0.219	Medium
Social knowledge	0.029	Small
Social practices	0.012	Below small-effect convention

Governance practices had the highest effect size on business sustainability as presented in Table 5 (f 2 =.219) which is a medium effect by the conventions used in the study. Environmental knowledge (f2 = .080), environmental practices (f2 = .021), and social knowledge (f2 =.029) had small effects, and governance knowledge (f2 =.011) and social practices (f2 =.012) were below the usual cutoff for a small effect. The results indicated that governance practices had the greatest practical contribution to explaining business sustainability in the estimated model. However, the effect sizes should be interpreted with caution given the cross-sectional and self-reported nature of the data and should not be interpreted as suggesting that improvements in governance practices will necessarily lead to improvements in business sustainability. Instead, the findings indicate governance practices as a domain of particular salience for organizational attention and further empirical testing.

Summary of Key Structural Findings

Overall, the structural results indicate that the relationships between ESG knowledge, ESG practices, and business sustainability varied across dimensions and were not uniform. Environmental knowledge was positively associated with environmental and social practices and business sustainability directly and with governance knowledge positively associated with governance and social practices. Social knowledge, for its part, had a significant relationship to governance practices. Among the dimensions of ESG practices, governance practices had the strongest significant direct relationship with business sustainability and the largest effect size. These results should be distinguished from the high descriptive ratings

reported for ESG knowledge, ESG practices and business sustainability. High mean scores suggest generally favorable assessments by respondents. Conversely, the structural results show whether changes in specific constructs are statistically related within the estimated model. Thus, a construct can have a high score on the descriptive rating, without having a strong structural relation to business sustainability.

Theoretical Implications

The findings are congruent with a stakeholder-oriented perspective of ESG, and different types of ESG knowledge are related to distinct organizational practices. But the pattern observed is not consistent with the idea that all dimensions of knowledge correspond to all dimensions of practice. This indicates the importance of examining the components separately, but also the need to test them to see if they are sufficiently distinct. (Freeman, 1984; Donaldson and Preston, 1995).

From a resource-based view, ESG knowledge can be valuable when organizations are able to convert it into routines and capabilities that can help them in their operations. Likewise, recent studies on manufacturing suggest that sustainability performance depends, in part, on an organization's ability to develop and adapt its environmental, managerial, relational, and social capabilities to changing conditions (Bhadra et al., 2024). Governance may do so in much the same way. Not only having policies and systems in place, but also how they are translated into sustainability-oriented practices and everyday organizational processes is its value (Formentini & Taticchi, 2023). Although the results of the present study are consistent with this view, they should not be interpreted as evidence that ESG practices provide a sustained competitive advantage. The cross-sectional design does not establish whether these practices are rare or difficult for other organizations to imitate as suggested by the resource-based view. Such an advantage would need further proof that these organizational capabilities lead to competitive outcomes over time.

The institutional and legitimacy perspectives serve to provide a starting point for understanding motivations for the development of corporate controls, employee processes, and corporate governance. However, in this study coercive, normative and mimetic pressures were not directly measured and legitimacy was not directly measured. Theories are not the variables that are tested empirically in the model, but are instead lenses to look through to better explain the results. This research could be replicated with direct observation of regulatory pressure, stakeholder demands, leadership commitment and organizational resources and an examination of their ability to account for the variation in ESG practice.

The theory of signaling implies that there is a possibility of the documented governance and sustainability practices to 'signify' reliability to external stakeholders. The present study does not measure stakeholder perceptions, reputation and the credibility of sustainability signals directly. This means that the finding on governance practices should be interpreted as an association with reported business sustainability, but not as a mediating role of signaling/reputation in the relationship.

Upper echelons theory emphasizes the significance of leadership in establishing priorities and in implementation. In the reported model, leadership knowledge and commitment were not treated as two distinct constructs. Future research might distinguish between knowledge at the individual and organizational levels and explore whether leadership support moderates the translation of awareness of ESG issues into procedures, budgets, and monitored outcomes.

Practical Implications for Food and Beverage Companies

First, firms can align the education around ESG principles with roles in the organization. The production staff could require training in resource use, segregation of wastes, food safety, and environmental control systems; human resources personnel could specialize in worker safety, ethical treatment, training, and dispute resolution processes; procurement staff could concern themselves with supplier criteria and sustainable sourcing; and management personnel could concentrate on compliance, accountability, risk management, and decision-making processes. (Mastos & Gotzamani, 2022; Hair et al., 2022).

Second, organizations may be able to assign ownership for each practice. A policy without ownership, deadline, evidence, and review process will only exist in theory. Organizations may adopt a basic log that outlines the concern, the owner of the task, the process, the evidence to be collected, frequency of review, and the remedy for not meeting the goal.

Thirdly, Governance should be given special consideration, as it had the most statistically significant direct relationship with business sustainability in this study. Similarly, studies on firms in ASEAN find that governance is important for firm performance and that the effect of individual ESG dimensions (Handoyo & Anas, 2024) may depend upon the regulatory and institutional context. Complex systems for organizations don't mean better governance. This could mean concrete steps such as having a clear and easy-to-understand code of conduct, defining who can make and approve decisions, properly documenting conflicts of interest, monitoring regulatory requirements and keeping proper records of key management decisions. Organizations can also see what concerns are identified and thus know if they have been handled correctly. These practices can embed governance in the day-to-day decision making of the organization rather than a formal set of policies.

Fourth, the environmental knowledge must be tied to some operating indicators, which may vary depending on the organization and data available. For instance, these can include consumption of water and energy, amounts of waste generated, intensity of packaging, compliance violations, or environmental corrective action completion status. However, this research is not implying that the organizations participating in it are using all these indicators at the moment; they are just some examples.

Fifth, social practices should still be included in the model despite the fact that the social practice approach to achieving business sustainability does not exhibit statistical significance in the model described in the paper. Safety of employees, safety of products, responsible sourcing and community relations could be important responsibilities on their own. The results of the statistical analysis in the study cannot be used to ignore other legal or ethical responsibilities. On the contrary, firms need to measure the impact of such practices more accurately.

Lastly, companies must refrain from assuming that any single composite measure is sufficient for a full sustainability analysis. A short dashboard measure of training, implementation, compliance, operational, personnel, and business measures may assist the management in assessing whether knowledge translates into actions. The indicators must be compared to a baseline and evaluated periodically, while the targets must be realistic and adjustable.

Proposed Business Sustainability Framework

On the basis of the study's results, a Business Sustainability Framework was developed to provide a practical representation of how ESG knowledge can be translated into organizational practices and monitored sustainability outcomes. The framework pays special attention to the significant relationships identified in the structural model, especially the association of environmental knowledge with business sustainability and the comparatively strong relationship between governance practices and business sustainability. The framework does not regard ESG knowledge as sufficient in itself, but rather stresses the need to translate knowledge into tangible responsibilities, documented processes, governance structures, and measurable organizational actions. This progression from knowledge toward actionable organizational change is consistent with Narsico (2026b), whose seven-level typology conceptualizes research outcomes as capable of advancing beyond description and interpretation toward prescription, generation, and ultimately transformation. From this perspective, sustainability-oriented knowledge acquires greater practical significance when it informs concrete actions, new practices, and enduring organizational change.

The framework consists of four interrelated steps, as shown in Figure 2, build ESG knowledge, translate knowledge into practice, strengthen governance and monitor sustainability outcomes. The feedback loop also implies that monitoring is meant to inform ongoing modifications in knowledge, procedures, and organizational practices rather than to be a one-time linear process.

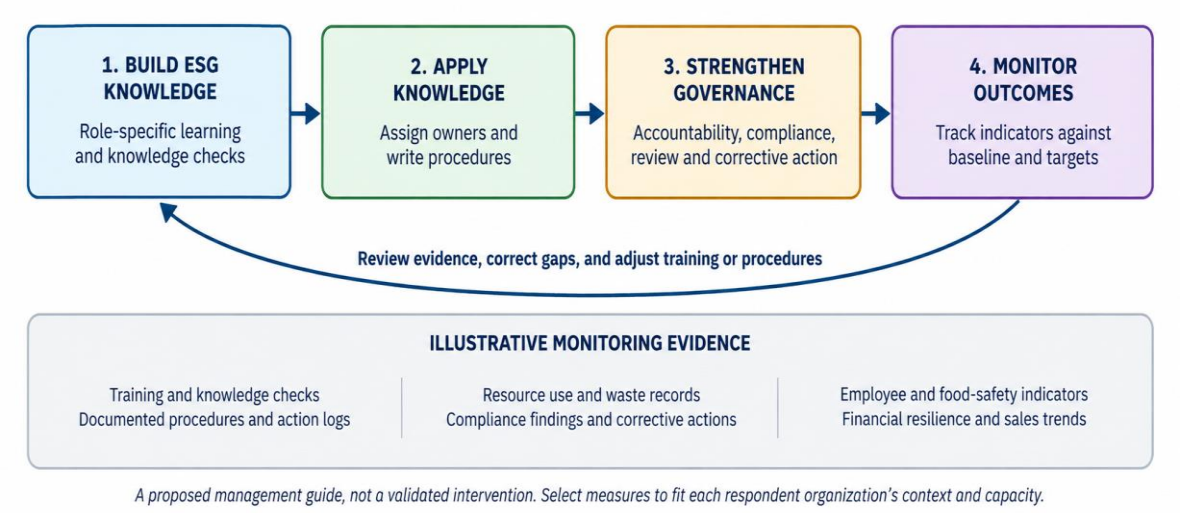


Figure 2. Proposed framework for translating ESG knowledge into monitored business sustainability

This framework is based on two research findings, which are: there was a positive relationship between environmental knowledge and sustainable business, and governance practices had the most statistically significant relationship with sustainable business. The knowledge to practice results have even further provided evidence on the practicality of the translation of knowledge to procedures. These findings have informed the framework's focus areas, but they have not proven whether the framework has been tested as an intervention.

Step 1: Build ESG knowledge

The company should determine what ESG issues are relevant to its business and offer short training that is relevant to the job. The topics of environmental training may include resource efficiency, waste management, environmental responsibility and prevention practices. Examples of subjects for social training might be employee welfare, safety, product liability, dealing with complaints and effect on the community. Governance training topics could include ethical conduct, conflict of interests, responsibility for compliance, transparency of decision making and escalation procedures. Training can be assessed with knowledge tests and scenario questions.

Step 2: Translate knowledge into practice

Each priority should be associated with procedure, responsible person, evidentiary documentation, and frequency of review. This could mean that, for instance, training on waste management is associated with segregated roles and responsibilities, documentation of the segregation process or waste disposal, as well as a procedure for dealing with violations. Training of employees should be associated with the reporting process and follow-up.

Step 3: Strengthen governance

The operational foundation for the framework is governance because governance policies had the most direct and statistically significant relationship with sustainable business in the study model. Businesses can define roles, have a code of conduct, detect conflict of interest, track compliance requirements, conduct management review, and fix identified issues. Governance policies should not be defined by just creating a policy document; proof that the governance process was implemented lies in the documentation of the process.

Step 4: Monitor sustainability outcomes

Firms need to pick a limited number of metrics based on their size, ability to manage data, and the material concerns involved. Metrics include but are not limited to: completion of the firm's ESG training, resource use/waste metrics, worker or food safety metrics, results of audit/compliance findings, resolution of corrective actions, financial stability metrics, and sales trends. These are sample metrics for operationalizing, not metrics actually measured by the current research project. Each metric should have a baseline, an owner, a period of

review, and a decision protocol. For smaller firms or those with limited data systems, monitoring need not begin with complex dashboards or additional reporting requirements. A small set of indicators drawn from records already generated through normal operations, such as training logs, waste or resource records, safety reports, compliance findings, and sales data, may provide a practical starting point. Assigning responsibility for consolidating these existing records to designated personnel can also reduce the reporting burden on rank-and-file employees while still allowing management to review sustainability outcomes periodically.

Operationalizing and Monitoring the Proposed Framework

To support the practical application of the proposed framework, each stage can be translated into specific organizational actions accompanied by appropriate evidence for monitoring implementation. This allows organizations to move from general ESG intentions toward observable activities that can be assigned, documented, reviewed, and evaluated over time. Table 6 presents the suggested operational actions for each stage of the framework together with possible monitoring evidence that organizations may adapt according to their size, resources, operational conditions, and sustainability priorities.

Table 6. Proposed ESG Management Framework: Operational Actions and Monitoring Evidence

Framework stage	Operational action	Possible monitoring evidence
1. Build ESG knowledge	Role-specific learning on environmental compliance, employee/community issues, ethics, and governance.	Training completion; short knowledge checks.
2. Convert knowledge into practice	Assign responsible persons, document procedures, and incorporate ESG tasks into operating plans.	Approved procedures; implementation records.
3. Strengthen governance	Review code of conduct, conflict-of-interest controls, compliance monitoring, transparency, and management oversight.	Review logs; compliance findings; corrective actions.
4. Monitor sustainability	Track financial resilience, sales trends, ESG integration, and adaptability against a baseline.	Periodic KPI dashboard and management review.

It might be useful for the firm to conduct the trial in one production line, plant, or operational area prior to adopting the framework organization-wide. Management should be able to outline the initial situation and set out only a few objectives to begin with. After the predetermined period has elapsed, the firm will be able to evaluate the results relative to the initial state, determine any implementation problems and adjust the training or procedures accordingly. The evaluation will need to assess whether the process was conducted successfully, whether there were any changes, and whether they can be causally attributed to the intervention.

The framework is intentionally simple. It is neither a certification standard nor a compliance checklist or a substitute for applicable laws and sector specific requirements. The indicator and procedure should be tailored to the regulatory obligations, operational risks, available resources and stakeholder expectations of each company. It is valuable in linking knowledge to ownership, evidence, review and improvement.

Illustrative Implementation Plan

The implementation plan could start off with a quick diagnosis instead of a full organizational initiative. In such a case, management can pick one operational division and pose three questions. What is the relevant ESG issue for the division? What is the existing knowledge or procedural gap regarding the issue? What can prove that there is no longer any gap? The answers can be captured in a simple action log. Each action needs to state who will do it, when it needs to be done, what evidence

will be used, when it will be reviewed, and how to escalate it if not done on time. See Table 6 for details.

During the first cycle, a company could select one environmental priority, one social priority, and one governance priority. The environmental priority might involve improving records for resource use or waste handling; the social priority might involve strengthening staff awareness of safety or grievance procedures; and the governance priority might involve clarifying responsibility for compliance review and corrective-action closure. These are examples only, and the selection should be determined by the company's actual risks and obligations rather than adopted as a universal checklist.

At the review stage, management should ask whether staff understood the instruction, whether the required procedure was used, whether evidence was retained, and whether identified gaps were corrected. If implementation was weak, the response may involve clearer instructions, additional resources, or more explicit responsibility rather than repeating general training. If implementation was strong but outcome indicators did not change, the company may need to reassess the selected indicator, the time required for effects to appear, or the assumption that the action would influence the outcome. Such a review cycle encourages learning and prevents unsupported claims about impact.

Making the Framework Proportionate to Company Capacity

The model must be matched with the capability of the organization. If the organization has no specialist staff, then it can start with a brief written protocol, someone overseeing that process, and monthly reviews of a few key metrics. Larger organizations can spread responsibility among operations, human resources, procurement, accounting, and compliance, but with consolidated reports going to top management. The main idea is to have a system that clearly spells out what is expected, what needs to be done, what needs to be kept, and how problems will be handled.

For companies with limited data systems, a basic dashboard can include simple counts or completion rates, so long as definitions remain consistent. For example, completion of training should state which employees need to complete the training and by when; closing of corrective actions should define what constitutes closed and who verifies the evidence; and resource-use trends should be interpreted against production volume if possible. Without consistent definitions, an indicator may look like it is improving simply because the way it is counted has changed, not because the performance has improved. Thus, the study recommends that definitions of indicators be documented in association with reported values.

The other thing that businesses need to understand is the difference between leading indicators and lagging indicators. Leading indicators measure activities that the business is engaging in that will lead to success. These include completion of training sessions, maintenance, internal inspections, and closure of any corrective action. On the other hand, lagging indicators are those that measure the output. They include accidents, waste generation, customer complaints, and financial performance. Neither one of them is enough by itself. The activity indicators will tell you whether a process is being implemented or not, but the output indicators can change due to other factors.

Governance processes also contribute to maintaining credibility of these steps. The management team can perform regular reviews of deviations, incomplete documentation, repeated non-compliance, and the progress of the corrective action plan. As a result of the review, there must be well-documented decisions, such as modification of the process, additional resource allocation, target adjustment, or risk escalation. In case a company makes public statements about its sustainability goals, these should be based on facts and not hide problems under the carpet through average ratings.

The framework can also assist in communication with interested parties, but only if the internal evidence is reliable. Operational records that have been verified can be used to explain progress to employees, customers, suppliers or relevant authorities. The goal is not to generate more communication for the sake of communication; rather, it is to make responsibilities and progress understandable. If performance has not improved, transparent communication should identify the problem and outline the

response, rather than implying success based only on policy adoption or completion of training.

For future research, the four-step process can be assessed using implementation metrics and a set observation period. A pilot study might involve measuring the baseline status, providing role-based learning, documenting the processes assigned, introducing governance analysis and measuring the indicators in a follow-up study. The researcher needs to specify primary outcome measures and track any changes in the implementation process. If there are more than one organization involved, comparisons could prove to be useful in determining any differences based on organization size, maturity of the governance process, or availability of resources.

Limitations of the Study

Several limitations should be considered when interpreting the study's findings. First, the sample size is 100 respondents purposively selected from three cities. This provides a close view of the experience of the respondents but does not provide statistical generalization to all firms in the Cebu, Central Visayas or Philippines regions. (Setia, 2016; Podsakoff, et al., 2003).

Second, the cross-sectional research design assesses constructs at a single point in time. This design does not establish the temporal sequence among ESG knowledge, ESG practices, and business sustainability, nor does it permit causal conclusions about the relationships among these constructs. Longitudinal data could help identify the sequence and whether knowledge changes lead to practice changes, which in turn precede improvements in selected outcomes. Intervention research designs or phased implementation research designs might be better able to identify any practical impact of the training or improved governance. (Setia, 2016).

Third, the use of the structured self-report questionnaire raises issues related to common-method bias and social desirability. Respondents may report organizational practices more favorably or may not have sufficient information to determine whether particular policies are consistently implemented across the organization. A single respondent can rate positively knowledge, practice, and sustainability simply because of overall positive perception of the company. Future studies could reduce these concerns by using multiple informants, objective measures, document analysis, and separate sources or measurement occasions for predictors and outcomes. In case there are no objective measures, it is necessary to interpret results as perceived organizational practices. (Podsakoff et al., 2003).

Recommendations and Future Research Directions

The results point to food and beverage manufacturing and processing companies' ability to better translate knowledge about ESG into practice through clarifying roles, documenting processes, enhancing governance controls, and regularly tracking relevant operational and sustainability indicators. Particular attention may be given to governance accountability, as governance practices showed the strongest statistically significant direct association with business sustainability among the ESG practice dimensions examined. However, environmental and social responsibility should continue to be an organizational practice, since the non-significance of the statistics in this sample should not be interpreted as an indication that these dimensions are unimportant. Organizations could also pilot the proposed four-step Business Sustainability Framework on a small scale with the aim to establish baseline measures and evaluate implementation before larger scale deployment across the organization.

Future research can further extend this study by using larger and more diverse samples across locations, company sizes, and organizational settings and, when feasible, using probability-based sampling and a priori sample-size determination. Longitudinal or intervention designs can help to investigate if changes in ESG knowledge and practices are followed by changes in business sustainability over time and to evaluate the effectiveness of the proposed framework. Future studies could also distinguish between individual employee knowledge and organization level policies and practices, and improve measurement through multiple respondents and the triangulation of self-report data with documentary and

operational indicators such as resource use, waste records, training completion, safety measures, compliance findings, corrective actions and financial performance.

Conclusion

This study examined ESG knowledge, ESG practices, and business sustainability among 100 respondents working in food and beverage manufacturing and processing organizations in Cebu City, Mandaue City, and Lapu-Lapu City. Respondents reported high levels across all three broad constructs. The structural results, however, showed a differentiated pattern: environmental knowledge was associated with environmental and social practices and with business sustainability; governance knowledge was associated with governance and social practices; and social knowledge was associated with governance practices. Governance practices had the strongest statistically significant direct association with business sustainability among the practice dimensions. The model explained 51.8% of the variance in business sustainability.

The evidence supports practical emphasis on translating ESG knowledge into documented procedures and strengthening governance accountability. It does not establish causation, nor does it show that every ESG dimension has the same relationship with sustainability. Interpretation is further limited by the purposive, geographically bounded sample and by measurement concerns involving governance knowledge, discriminant validity, and model fit. The findings should therefore be viewed as context-specific evidence that may lay the groundwork for future research and organizational experimentation, rather than as a definitive estimate for the wider Philippine food and beverage sector.

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References

Alkaraan, F., Albitar, K., Hussainey, K., & Venkatesh, V. G. (2022). Corporate transformation toward Industry 4.0 and financial performance: The influence of environmental, social, and governance (ESG). Technological Forecasting and Social Change, 175, 121423. https://doi.org/10.1016/j.techfore.2021.121423

Alsayegh, M., Rahman, R., & Homayoun, S. (2020). Corporate Economic, Environmental, and Social Sustainability Performance Transformation through ESG Disclosure. Sustainability, 12, 3910. https://doi.org/10.3390/su12093910.

Alshbili, I., Elamer, A. A., & Moustafa, M. W. (2021). Social and environmental reporting, sustainable development and institutional voids: Evidence from a developing country. *Corporate Social Responsibility and Environmental Management, 28*(2), 881–895. https://doi.org/10.1002/csr.2096

Barney, J. (1991). Firm resources and sustained competitive advantage. Journal of Management, 17(1), 99–120. https://doi.org/10.1177/014920639101700108

Bhadra, K. V., Kamalanabhan, T. J., & Singh, S. K. (2024). Evolution of dynamic capabilities for business sustainability performance: Evidence from the Indian manufacturing sector. *Business Strategy and the Environment, 33*(6), 5583–5605. https://doi.org/10.1002/bse.3767

Cantele, S., Valcozzena, S., & Campedelli, B. (2024). How do firm social practices produce social impacts? Investigating the role of social and long-term orientation. *Journal of Cleaner Production, 434*, 140020. https://doi.org/10.1016/j.jclepro.2023.140020

Deegan, C. (2002). The legitimising effect of social and environmental disclosures – A theoretical foundation. Accounting, Auditing & Accountability Journal, 15(3), 282–311. https://doi.org/10.1108/09513570210435852

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. American Sociological Review, 48(2), 147–160. https://doi.org/10.2307/2095101

Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. Academy of Management Review, 20(1), 65–91. https://doi.org/10.5465/amr.1995.9503271992

Formentini, M., & Taticchi, P. (2023). From corporate governance to sustainability outcomes: The key role of operations management. *International Journal of Operations & Production Management, 43*(13), 27–49. https://doi.org/10.1108/IJOPM-01-2022-0043

Freeman, R. E. (1984). Strategic management: A stakeholder approach. Pitman.

Garrido-Ruso, M., Otero-González, L., López-Penabad, M.-C., & Durán Santomil, P. (2024). Does ESG implementation influence performance and risk in SMEs? *Corporate Social Responsibility and Environmental Management, 31*(5), 4227–4247. https://doi.org/10.1002/csr.2783

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). A primer on partial least squares structural equation modeling (PLS-SEM) (3rd ed.). SAGE Publications.

Hambrick, D. C. (2007). Upper echelons theory: An update. Academy of Management Review, 32(2), 334–343. https://doi.org/10.5465/amr.2007.24345254

Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. Academy of Management Review, 9(2), 193–206. https://doi.org/10.5465/amr.1984.4277628

Handoyo, S., & Anas, S. (2024). The effect of environmental, social, and governance (ESG) on firm performance: The moderating role of country regulatory quality and government effectiveness in ASEAN. *Cogent Business & Management, 11*(1), 2371071. https://doi.org/10.1080/23311975.2024.2371071

Iliopoulou, E., Vlachvei, A., & Koronaki, E. (2024). Environmental drivers, environmental practices, and business performance: A systematic literature review and future research directions. *Sustainability, 16*(11), 4725. https://doi.org/10.3390/su16114725

Karuppiah, K., Sankaranarayanan, B., & Lo, H.-W. (2024). A systematic literature review on the evolution of sustainable manufacturing practices: Key findings and implications. *Cleaner Engineering and Technology, 22*, 100798. https://doi.org/10.1016/j.clet.2024.100798

Mackenzie, A., & Brown, M. (2026). Identifying and navigating barriers to ESG strategy implementation: Perspectives of corporate senior leaders in a MENA context. *Sustainable Development*, 1–16. https://doi.org/10.1002/sd.71258

Mastos, T., & Gotzamani, K. (2022). Sustainable supply chain management in the food industry: A conceptual model from a literature review and a case study. Foods, 11(15), 2295. https://doi.org/10.3390/foods11152295

Narsico, P. G. (2026a). The Integrated Dynamic Self-Sufficiency (IDSS) framework: A literature-informed conceptual model for sustainable community development. *International Journal of Multidisciplinary: Applied Business and Education Research, 7*(8), 3537–3549. https://doi.org/10.11594/ijmaber.07.08.21

Narsico, P. G. (2026b). From data to awakening: A seven-level typology for transformative research aligned with the United Nations Sustainable Development Goals. *International Journal of Multidisciplinary: Applied Business and Education Research, 7*(4), 1734–1746.

https://doi.org/10.11594/ijmaber.07.04.21

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. Journal of Applied Psychology, 88(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Scott, W. R. (2014). Institutions and organizations: Ideas, interests, and identities (4th ed.). Sage Publications.

Setia, M. S. (2016). Methodology series module 3: Cross-sectional studies. Indian Journal of Dermatology, 61(3), 261–264. https://doi.org/10.4103/0019-5154.182410

Shalhoob, H., & Hussainey, K. (2023). Environmental, social and governance (ESG) disclosure and the small and medium enterprises (SMEs) sustainability performance. *Sustainability, 15*(1), 200. https://doi.org/10.3390/su15010200

Spence, M. (1973). Job market signaling. The Quarterly Journal of Economics, 87(3), 355–374. https://doi.org/10.2307/1882010

Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. Academy of Management Review, 20(3), 571–610. https://doi.org/10.5465/amr.1995.9508080331

Wernerfelt, B. (1984). A resource-based view of the firm. Strategic Management Journal, 5(2), 171–180. https://doi.org/10.1002/smj.4250050207

Yang, J., Zuo, Z., Li, Y., & Guo, H. (2024). Manufacturing enterprises move towards sustainable development: ESG performance, market-based environmental regulation, and green technological innovation. *Journal of Environmental Management, 372*, 123244. https://doi.org/10.1016/j.jenvman.2024.123244

Zhou, S., Rashid, M. H. U., Zobair, S. A. M., Sobhani, F. A., & Siddik, A. B. (2023). Does ESG impact firms' sustainability performance? The mediating effect of innovation performance. *Sustainability, 15*(6), 5586. https://doi.org/10.3390/su15065586