Institutional Pressures and Their Effects on Sustainability Practices of Electronics Manufacturing Firms in CALABARZON

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Abstract

This study analyzes the causal relationship between external institutional pressures and the substantive adoption of sustainability practices within the electronics manufacturing sector in CALABARZON, Philippines. As a premier industrial hub, the region faces a critical transition toward a circular economy following the enactment of the EPR Act of 2022. Grounded in Institutional Theory, the research evaluates how coercive, normative, and mimetic pressures influence the integrated Triple Bottom Line (TBL) performance comprising environmental, social, and economic dimensions. Utilizing a descriptive-causal research design, data were collected from 102 electronics manufacturing employees via purposive sampling. Multiple linear regression analysis revealed that the three institutional pressures explain a staggering 92.5% of the variance in sustainability adoption. Coercive pressure emerged as the most significant predictor, driven by strict regulatory mandates from PEZA and the DENR, as well as global buyer requirements. Normative pressure follows, reflecting the professionalization of environmental stewardship through industry networks like SEIPI. Mimetic pressure, while significant, holds the lowest impact. The findings underscore the sector's commitment to SDG 9 (Industry, Innovation, and Infrastructure) through the integration of green manufacturing and SDG 12 (Responsible Consumption and Production) via robust hazardous waste management and material recovery. The study concludes that the institutional environment is an exhaustive predictor of corporate sustainability, proposing a framework to align regulatory compliance with long-term regional competitiveness.

Keywords: Institutional Theory; Triple Bottom Line; Electronics Manufacturing; Circular Economy; CALABARZON

1. Introduction

1.1. Background of the Study

The global electronics industry underwent a radical shift toward environmental accountability as the ecological footprint of high-tech manufacturing became a focal point for international regulators. In the Philippines, the CALABARZON region emerged as the nation's primary industrial engine, hosting a dense concentration of electronics firms within Philippine Economic Zone Authority (PEZA) ecozones. While these firms contributed significantly to the national GDP, they were simultaneously responsible for intensive energy consumption and complex hazardous waste streams.

Historically, the adoption of green initiatives in this sector was voluntary; however, the landscape changed with the enactment of the Extended Producer Responsibility (EPR) Act of 2022. This legislative milestone shifted the burden of plastic and electronic waste management onto the producers, creating a high-pressure environment for firms to align their operations with circular economy principles. As noted by Alinda et al. (2023) in their study of Ugandan manufacturing, firms do not operate in a vacuum; rather, their sustainability trajectories were heavily dictated by external "institutional pressures".

In the CALABARZON context, these pressures were multi-dimensional. Firms faced coercive pressures from the Department of Environment and Natural Resources (DENR), normative pressures from international buyers demanding compliance with RoHS and REACH standards, and mimetic pressures as they sought to replicate the sustainable models of industry leaders to maintain competitive advantages. Despite these drivers, a gap was observed between regulatory compliance and actual environmental performance. Research by Jagtap et al. (2022) suggested that while firms in emerging economies felt the push for green manufacturing, internal resource constraints often hindered full-scale implementation.

Furthermore, the rise of global reporting standards, as highlighted in the work of Khan et al. (2022), intensified the scrutiny on how electronics firms managed cleaner production. This study was therefore conducted to investigate how these institutional forces interacted within the unique socio-economic landscape of CALABARZON, specifically addressing the tension between the high energy demands of the industry and the burgeoning mandate for a circular economy. By synthesizing the "isomorphic" forces identified in institutional theory, this research evaluated whether the sustainability practices observed were substantive transformations or merely symbolic responses to external mandates.

1.2. Review of Related Literature

The theoretical foundation for this study was built upon the premise that institutional pressures significantly predicted the adoption of Green Supply Chain Management (GSCM) and circular practices. Al-Zaqeba et al. (2022) argued that for firms in global supply chains, normative pressures stemming from professional associations and customer expectations often carried more weight than local legislation. This was particularly relevant for CALABARZON firms, where international export requirements often exceeded local Philippine standards.

However, the efficacy of these pressures was not uniform. Sahoo et al. (2024) demonstrated that institutional pressure functioned as a moderator; when the pressure was high, the correlation between green practices and environmental performance became more pronounced. In contrast, researchers like those in the International Journal of Production Research (2025) cautioned that small and medium-sized enterprises (SMEs) within the electronics cluster often faced "decoupling." In these instances, firms adopted the language of sustainability to satisfy PEZA's Green Ecozone requirements but failed to invest in the advanced infrastructure needed for genuine hazardous waste mitigation.

Finally, the shift toward cleaner production was identified by Khan et al. (2022) as a vital mediator. They found that institutional pressures did not lead to improved performance unless the firm first adopted specific "cleaner production" protocols. This echoed the findings of Alinda et al. (2023), who concluded that the manufacturing sector's response to institutional forces was contingent upon the specific type of pressure applied and the firm's strategic orientation.

1.3. Significance of the Study

The electronics manufacturing sector in CALABARZON operated under a paradoxical framework where the demand for rapid production conflicted with the stringent mandates of the EPR Act of 2022. While firms were compelled to adopt sustainability practices to remain viable in the global market, they were often limited by local infrastructure gaps, such as the scarcity of specialized e-waste recycling facilities and high renewable energy costs.

The central problem addressed by this study was the lack of clarity regarding which institutional pressures; coercive, mimetic, or normative, most effectively drove the adoption of circular economy practices. Specifically, the research sought to determine if the sustainability efforts of these firms resulted in measurable environmental gains or if they were merely administrative responses to secure legitimacy.

The findings of this research offered substantial value to various stakeholders by clarifying how institutional environments shaped the ecological footprint of the electronics sector. The significance of this study was rooted in its ability to bridge the gap between theoretical institutionalism and the practical realities of industrial sustainability in an emerging economy.

To Electronics Manufacturing Firms: This study provided management and Environmental Health and Safety (EHS) officers with a diagnostic understanding of how external pressures influenced their internal operations. By identifying the dominant drivers of sustainability, firms were able to move beyond reactive compliance and strategically align their Green Supply Chain Management (GSCM) practices with global standards, such as RoHS and REACH. As highlighted by Jagtap et al. (2022), understanding these drivers allowed firms to better integrate lean manufacturing with sustainability, ultimately enhancing their competitiveness in the global market.

To Policy Makers and Government Agencies (DENR and PEZA): The research offered critical insights into the effectiveness of the EPR Act of 2022. By evaluating whether coercive pressures led to substantive changes or merely symbolic "decoupling," this study provided the Department of Environment and Natural Resources (DENR) with data-driven feedback on regulatory enforcement. Furthermore, it assisted the Philippine Economic Zone Authority (PEZA) in refining the "Green Ecozone" initiative, ensuring that infrastructure support such as specialized waste facilities matched the mandates imposed on firms.

To Global Supply Chain Partners: For international buyers and investors, this study served as a verification of the sustainability commitment within the CALABARZON cluster. It illuminated the extent to which local firms adopted circular economy practices, thereby reducing the "greenwashing" risks identified in recent literature (e.g., International Journal of Production Research, 2025). This transparency was vital for maintaining the Philippines' position as a reliable and ethically compliant node in the global electronics value chain.

To the Academic Community: This research contributed to the body of knowledge by applying the framework of Alinda et al. (2023) to a highly specialized, export-oriented industry. It expanded the scope of Institutional Theory by demonstrating how mimetic and normative pressures operated differently in a high-tech manufacturing hub compared to general manufacturing sectors. The integration of recent studies, such as Sahoo et al. (2024), provided a contemporary benchmark for future scholars investigating the moderating role of institutional pressure in Southeast Asian industrial corridors.

To the Environment and Local Communities: Ultimately, the study advocated for more effective environmental protection. By identifying the pressures that successfully led to reduced hazardous waste and improved energy efficiency, the research supported the long-term goal of mitigating the industrial impact on the CALABARZON region's ecosystems, thereby promoting a healthier environment for the local population.

1.4. Research Framework

The research framework for this study was established by integrating the core tenets of Institutional Theory with the operational realities of the electronics sector. It examined the causal link between external pressures and the substantive adoption of sustainability practices.

Conceptual Framework. The conceptual foundation was derived from the work of Alinda et al. (2023), who posited that manufacturing firms did not adopt sustainability practices solely for economic efficiency, but as a strategic response to institutional "isomorphism." This theory suggested that organizations within the same field tended to become similar over time due to three specific pressures: Coercive, Normative, and Mimetic (see Figure 1).

In this study, these pressures were conceptualized as the drivers for adopting Circular Economy (CE) practices. Following the logic of Khan et al. (2022), it was hypothesized that these institutional forces pushed firms to transition from traditional linear models to "cleaner production" systems. However, the framework also acknowledged the potential for "decoupling," as identified in the International Journal of Production Research (2025), where firms might have adopted the appearance of sustainability (Normative pressure) without implementing the deep structural changes required for hazardous waste reduction.

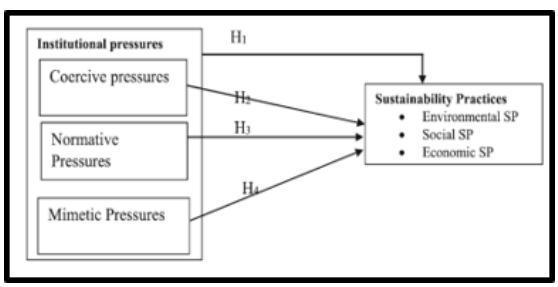

Figure 1: Conceptual Framework
Source: Institutional Pressures and Sustainability Practices of Manufacturing Firms in Uganda (Alinda et.al., 2023)

Operational Framework. The operational framework replicated the model utilized by Alinda et al. (2023) but was contextualized for the electronics manufacturing firms in CALABARZON. This model categorized the variables into Independent Variables (Institutional Pressures) and Dependent Variables (the sustainability outcomes). The former composed of *Coercive Pressure* which refers to the regulatory mandates such as the EPR Act of 2022, DENR environmental compliance certificates (ECC), and PEZA's "Green Ecozone" requirements. Followed by *Normative Pressure* which refers to the influence from professional bodies (e.g., SEIPI), international quality standards (ISO 14001), and global buyer requirements like RoHS and REACH. And finally, Mimetic Pressure which are the benchmarking against industry leaders and competitors within the CALABARZON cluster to maintain legitimacy and market share.

The latter, by following the framework established by Alinda et al. (2023), the sustainability practices of manufacturing firms were evaluated through the Triple Bottom Line (TBL) lens. This multidimensional approach posited that true sustainability was achieved only when a firm balanced environmental, social, and

economic performance. In the context of the electronics manufacturing sector in CALABARZON, these three pillars were deeply influenced by the specific institutional pressures of the high-tech industry.

Environmental Performance. In the CALABARZON electronics cluster, environmental performance was the most visible outcome of institutional pressure. According to Khan et al. (2022), institutional forces drove firms toward "cleaner production," which, for electronics manufacturers, involved the reduction of toxic effluents and the optimization of energy use. Under the EPR Act of 2022, environmental performance was measured by the firm's ability to divert electronic waste from landfills and implement hazardous substance controls required by RoHS. As firms integrated circular economy practices, their environmental performance was characterized by a reduction in resource intensity and a measurable decrease in the carbon footprint of their semiconductor assembly operations (Sahoo et al., 2024).

Social Performance. Social performance, as conceptualized by Alinda et al. (2023), pertained to the firm's relationship with its employees and the local community. In the CALABARZON region, electronics firms operated within a highly regulated labor environment under PEZA. Social sustainability practices included ensuring occupational health and safety (OHS) in cleanroom environments where chemical exposure was a risk. Furthermore, normative pressures from global brands forced local manufacturers to adhere to international labor standards, preventing the "social decoupling" often seen in less regulated sectors. Research by Jagtap et al. (2022) emphasized that for electronics firms in emerging economies, social performance also involved the "upskilling" of the local workforce to handle advanced green technologies, thereby contributing to the socio-economic stability of provinces like Laguna and Batangas.

Economic Performance. Contrary to the traditional view that sustainability is a cost burden, the framework of Alinda et al. (2023) suggested that institutional pressures could enhance economic performance through increased efficiency and market legitimacy. For CALABARZON firms, economic performance was inextricably linked to energy efficiency due to the high cost of electricity in the Philippines. By adopting the circular economy practices advocated by the International Journal of Production Research (2025), firms realized cost savings through material recovery and reduced waste disposal fees. Moreover, maintaining high sustainability standards allowed these firms to secure long-term contracts with global tech giants, ensuring a steady stream of Foreign Direct Investment (FDI) and protecting the firm's "license to operate" in a competitive global market.

By integrating the TBL, the study observed that institutional pressures did not merely force compliance but created a holistic framework where environmental stewardship and social responsibility became prerequisites for economic viability within the Philippine electronics industry as described in Figure 2 below.

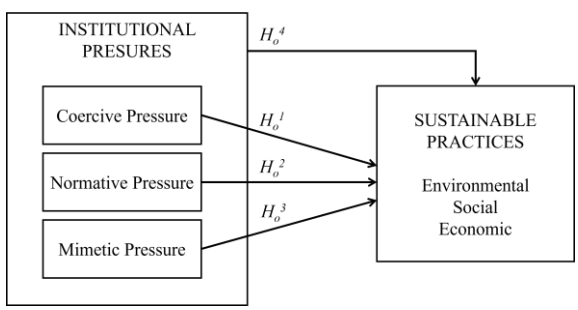

Figure 2: Operational Framework

1.5. Objectives of the Study

The The primary goal of this research was to analyze the causal effect of institutional pressures on the adoption of sustainability practices within the electronics manufacturing firms of the CALABARZON region.

By moving beyond a localized focus, the study sought to determine how these pressures influenced the integrated Triple Bottom Line (TBL) performance of the sector. Specifically, the study was guided by the following objectives:

1. To determine the effect of Coercive Pressures, such as formal mandates from PEZA and the DENR, on the environmental, social, and economic sustainability practices of the firms.
2. To examine the effect of Normative Pressures, derived from professional standards and ethical values disseminated through networks like SEIPI, on the professionalization of environmental stewardship.
3. To evaluate the effect of Mimetic Pressures, specifically the strategic imitation and benchmarking of ESG industry leaders within the CALABARZON ecozones, on the substantive adoption of sustainability roadmaps
4. To identify which institutional pressure served as the most significant predictor of sustainability practices.
5. To develop a Proposed Sustainability Integration Framework for electronics manufacturing firms in CALABARZON, aimed at aligning institutional compliance with the Triple Bottom Line (TBL) to mitigate the risks of symbolic "decoupling" and enhance long-term regional competitiveness.

1.6. Hypotheses

The null hypotheses tested are the following:

H_o^1: Coercive Pressures do not have a significant effect on the Sustainability Practices of electronics manufacturing firms in CALABARZON.

H_0^2: Normative Pressures do not have a significant effect on the Sustainability Practices of electronics manufacturing firms in CALABARZON.

H_0^3: Mimetic Pressures do not have a significant effect on the Sustainability Practices of electronics manufacturing firms in CALABARZON.

H_0^4: The overall Institutional Pressures do not have significant effect on the Sustainability Practices of electronics manufacturing firms in CALABARZON.

2. Methods

2.1. Research Design

The study employed a descriptive-causal research design to systematically investigate the variables under consideration. A quantitative approach was utilized, as it allowed for the objective measurement of institutional pressures and their statistical correlation with the Triple Bottom Line (TBL) outcomes. The descriptive component of the design was used to profile the current state of sustainability practices among electronics firms, specifically regarding their adherence to the EPR Act of 2022 and ISO 14001 standards. This was consistent with the methodology of Al-Zaqeba et al. (2022), who argued that establishing a baseline of existing practices is essential before analyzing the pressures that drive them. The causal (or explanatory) component of the design was implemented to test the hypotheses regarding the impact of the three isomorphic pressures; coercive, normative, and mimetic on firm performance. By utilizing Path Analysis or Multiple Regression Analysis, the researcher sought to determine the "predictive power" of each pressure. This design choice aligned with the work of Sahoo et al. (2024), who utilized similar causal modeling to demonstrate how institutional pressure moderates the effectiveness of green supply chain management. Furthermore, the design accounted for the "geographical and regulatory cluster effect" of the CALABARZON region. Because the

firms were situated within PEZA-registered ecozones, the research design treated the institutional environment as a relatively homogenous external factor, allowing for a clearer focus on how individual firm characteristics (such as size and ownership) influenced their response to these pressures.

2.2. Locale of the Study

The study was conducted within the CALABARZON region (Region IV-A) of the Philippines, specifically focusing on the industrial corridors of Laguna, Batangas, and Cavite. This locale was purposively selected as it serves as the premier "electronics hub" of the country, hosting the highest concentration of semiconductor and electronics assembly plants within the Philippine Economic Zone Authority (PEZA) framework.

The selection of CALABARZON as the research site was strategically significant for several reasons: 1) *Industrial Density and Economic Impact:* The region was characterized by its vast network of private and government-led techno-parks, such as the Laguna Technopark, Light Industrial and Science Parks, LIMA and the First Philippine Industrial Park in Batangas. These sites provided a concentrated environment where mimetic pressures were most observable, as firms operated in close physical and professional proximity, facilitating the strategic benchmarking described by Jagtap et al. (2022). 2) *Regulatory Focus*: As a primary host to PEZA-registered entities, the locale served as a "testing ground" for the EPR Act of 2022. The coercive pressures from the DENR and the administrative oversight of PEZA were more intensified in this region compared to other parts of the Philippines, providing a rich data set for evaluating regulatory compliance. 3) *Infrastructure and Resource Challenges*: Despite being a high-growth area, CALABARZON faced specific localized challenges, including high industrial power rates and a logistical bottleneck in hazardous waste transport. This environment perfectly mirrored the "tensions" identified in the research problem, where firms were forced to balance global sustainability expectations with local infrastructure limitations, a phenomenon noted in emerging economies by Khan et al. (2022). 4) *Professional Networks*: The presence of industry-leading associations like SEIPI (Semiconductor and Electronics Industries in the Philippines Foundation, Inc.) within this locale provided a clear channel for normative pressures. The regional culture of professionalized environmental stewardship made it an ideal setting to observe how ethical values and industry standards were disseminated, echoing the professionalization themes found in the work of Alinda et al. (2023).

By situating the research in this specific geographic and economic cluster, the study captured the unique dynamics of an export-oriented industry undergoing a transition toward circularity under the scrutiny of both local regulators and international buyers.

2.3. Respondents of the Study

The respondents of the study were drawn from the specialized pool of professionals responsible for the environmental and strategic governance of electronics firms in CALABARZON. To ensure the technical validity of the data, the study utilized purposive sampling, selecting participants who held key decision-making roles related to the firm's sustainability roadmap. These include Junior, Mid-Level, and Senior Managers up to Executive Level. These individuals were selected because they served as the primary interface between the firm and regulatory bodies like the DENR and PEZA. As established in the work of Alinda et al. (2023), targeting those with direct oversight of compliance was essential to accurately measure the impact of institutional pressures. To be included in the study, respondents had to be affiliated with an electronics manufacturing firm that had been operational in a PEZA-registered zone for at least three years. This duration ensured that the respondents had witnessed the transitionary period following the enactment of the EPR Act of 2022.

Consistent with the findings of Jagtap et al. (2022), focusing on these high-level technical respondents mitigated the risk of uninformed data and provided a more professionalized perspective on how normative

pressures from networks like SEIPI were translated into firm-level stewardship. All respondents participated voluntarily, and their responses were treated with the highest level of corporate confidentiality.

2.4. Sampling Design

The study employed a purposive sampling design, a non-probability sampling method selected to ensure that the data reflected the perspectives of those with specialized knowledge of the electronics industry's regulatory and operational landscape. This strategy was particularly appropriate given the technical nature of Institutional Theory and the specific requirements of the EPR Act of 2022.

To ensure the statistical power and validity of the results, the study utilized G*Power 3.1.9.7 software to determine the minimum required sample size. This formal power analysis was critical for mitigating Type II errors—the failure to detect an effect that actually exists especially when evaluating the predictive strength of the three institutional pressures on the Triple Bottom Line (TBL) outcomes. Consistent with the causal-predictive nature of the study and the methodology applied by Sahoo et al. (2024), specific parameters were inputted into the software, including an F-test family for linear multiple regression and a fixed model for R^2 deviation from zero. The effect size (f^2) was set at 0.15, representing a medium effect, which was justified by the work of Alinda et al. (2023) suggesting that institutional forces typically exert a moderate influence on firm-level practices in emerging markets.

Furthermore, the alpha error probability (α) was maintained at the standard 0.05 threshold, while the power ($1 - \beta$) was set at 0.80 to ensure an 80% probability of detecting significant relationships. With three primary predictors—coercive, normative, and mimetic pressures the G*Power analysis yielded a minimum required sample size of 77 respondents. However, acknowledging the risk of "decoupling" in survey responses and the potential for non-response among high-level managers within the CALABARZON cluster, the researcher sought a larger target to ensure the stability of the regression model. Integrating the purposive sampling design and the high density of the electronics sector in provinces like Cavite, Laguna and Batangas, the study targeted a total of 100 to 120 respondents. This increased threshold provided a necessary buffer for data cleaning and followed the recommendations of Khan et al. (2022), who noted that larger samples in institutional research enhance the reliability of Cronbach's Alpha and ensure that the resulting Sustainability Integration Framework is built upon robust empirical ground.

2.5. Data Gathering Procedures

The data gathering process was executed in a systematic manner to ensure the integrity, confidentiality, and reliability of the primary data collected. The procedure commenced only after the researcher secured formal ethical clearance from the De La Salle Lipa - Research Ethics Review Committee (DLSL RERC). This clearance ensured that all protocols involving human participants, particularly the management of sensitive corporate data from the electronics sector, adhered to the highest standards of research ethics and data privacy.

To maximize the response rate within the busy industrial environment of CALABARZON, the study employed a hybrid data collection method. This involved the distribution of digital surveys via Google Forms alongside the administration of pen-and-paper surveys. Prior to the full-scale implementation, a pilot test was conducted with 30 respondents who met the inclusion criteria but were not part of the final study sample. The purpose of this pilot was to test the reliability and internal consistency of the research instrument. Following the standards set by Khan et al. (2022), the data from this pilot were subjected to Cronbach's Alpha testing. This preliminary phase was crucial for identifying ambiguous items in the questionnaire and ensuring that the instrument could accurately capture the nuances of the 2022 EPR Act and the specific institutional pressures face by firms in the region. Once the instrument was validated and refined based on pilot feedback, the final survey was rolled out to the target respondents across the CALABARZON industrial corridor.

2.6. Research Tools and Instruments

The primary research instrument utilized in this study was a structured, self-administered survey questionnaire designed to measure the interplay between institutional pressures and the implementation of the Triple Bottom Line (TBL). The instrument was adapted from the validated scales used by Alinda et al. (2023) and was meticulously refined to align with the technical and regulatory landscape of the electronics manufacturing sector in CALABARZON.

The questionnaire was organized into three distinct sections:

Part I: Respondent and Firm Profile: This section gathered essential demographic and organizational data, including the respondent's professional role and the firm's characteristics, such as years of operation within PEZA and the specific electronics sub-sector. This data was critical for contextualizing the resource capabilities and organizational maturity identified by Jagtap et al. (2022).

Part II: Institutional Pressures: This part measured the perceived intensity of Coercive (e.g., EPR Act of 2022 mandates), Normative (e.g., SEIPI professional standards and ISO 14001), and Mimetic (e.g., benchmarking against regional industry leaders) pressures. These scales assessed the external drivers that influenced firms to adopt specific sustainability roadmaps.

Part III: Sustainability Practices: Based on the framework of Khan et al. (2022), this section evaluated the substantive adoption of environmental, social, and economic practices. It focused on industry-specific indicators such as hazardous waste mitigation, energy efficiency, and chemical safety protocols required by RoHS and REACH. See Table 1 for Questionnaire Specifications.

To ensure the instrument's scientific rigor and to avoid neutral response bias, all items in Parts II and III utilized a 6-point Likert Scale (ranging from "Strongly Disagree" to "Strongly Agree"). See Table 1 for Questionnaire Specifications.

Table 1: Questionnaire Specifications

Part	Variable	No. of Questions	Response Category
I	Respondent and Firm Profile	7	Multiple Choice/Categorical
II	Institutional Pressures		
	Coercive Pressure	5	6-point Likert Scale ("Strongly Disagree" to "Strongly Agree")
	Normative Pressure	5	6-point Likert Scale ("Strongly Disagree" to "Strongly Agree")
	Mimetic Pressure	5	6-point Likert Scale ("Strongly Disagree" to "Strongly Agree")
III	Sustainability Practices		
	Environmental Performance	5	6-point Likert Scale ("Strongly Disagree" to "Strongly Agree")
	Social Performance	5	6-point Likert Scale ("Strongly Disagree" to "Strongly Agree")
	Economic Performance	5	6-point Likert Scale ("Strongly Disagree" to "Strongly Agree")

The use of an even-numbered scale forced respondents to take a definitive stance on the intensity of institutional pressures and the extent of their firm's practices, which was essential for the causal-predictive nature of this study. Furthermore, the reliability of the instrument was confirmed through the pilot test results, which yielded an overall Cronbach's alpha of 0.957. This exceptionally high coefficient indicated excellent internal consistency and confirmed that the tool provided a robust and reliable measurement for the professionalization of environmental stewardship within the region's industrial ecozones. See Table 2 for the Reliability Coefficient per Variable.

Table 2: Reliability Coefficient per Variable

Variable	N	Items	Cronbach's Alpha (α)	Interpretation
Institutional Pressures				
Coercive Pressure	30	5	0.847	Good/Highly Reliable
Normative Pressure	30	5	0.948	Excellent
Mimetic Pressure	30	5	0.948	Excellent
Sustainability Practices				
Environmental Performance	30	5	0.914	Excellent
Social Performance	30	5	0.960	Excellent
Economic Performance	30	5	0.955	Excellent
Overall	30	30	0.957	Excellent

2.7. Data Analysis and Interpretation

The data collected from the electronics manufacturing firms were subjected to rigorous statistical treatment to address the research objectives. To evaluate the level of institutional pressures and the extent of sustainability practices, the Weighted Mean was calculated for each variable. These means were then interpreted using a categorical scale aligned with the 6-point Likert Scale employed in the instrument. To determine the predictive relationship between the three institutional pressures (Coercive, Mimetic, and Normative) and the Triple Bottom Line (TBL) outcomes, Multiple Linear Regression Analysis was utilized. This allowed the researcher to identify which pressure served as the most significant predictor, consistent with the analytical approach used by Sahoo et al. (2024).

The following scale was used to interpret the weighted means of the variables, providing a qualitative description of the institutional environment and the firms' operational response. See Table 3 for the Interpretation of Research Variables.

Table 3: Interpretation of Research Variables

Mean Range	Qualitative Interpretation	Operational Definition in CALABARZON Context
5.18 – 6.00	Very High	Practices are fully integrated into the core business strategy; institutional pressure is perceived as a critical mandate.
4.35 – 5.17	High	Practices are frequently implemented; pressure significantly influences firm-level decision-making.
3.51 – 4.34	Moderately High	Practices are adopted but may be inconsistent; pressure is recognized but not always prioritized.
2.68 – 3.50	Moderately Low	Adoption is sporadic; pressure is perceived as weak or easily bypassed (potential decoupling).
1.84 – 2.67	Low	Minimal adoption of practices; institutional pressure has negligible influence on operations.
1.00 – 1.83	Very Low	No evidence of sustainability practices; institutional forces are completely absent or ignored.

The interpretation of these levels was supported by the following literature, which provided a benchmark for how manufacturing firms respond to institutional pressures: 1) Alinda et al. (2023): Asserted that a "High" mean in Coercive Pressure typically indicates a regulatory environment where non-compliance carries heavy penalties, similar to the enforcement of the EPR Act of 2022 in the Philippines. 2) Khan et al. (2022): Contended that "Very High" levels of Environmental Sustainability practices are only achieved when institutional pressures are mediated by "cleaner production" protocols, suggesting that high means reflect a deep structural shift rather than symbolic compliance. 3) Al-Zaqeba et al. (2022): Found that in globalized industries, Normative Pressure often yields a "High" mean because professional standards (like those from SEIPI) act as a "soft law" that firms must follow to maintain legitimacy with international buyers. 4) Jagtap et al. (2022): Observed that a "Moderately High" mean in Social Sustainability in emerging economies often

reflects a focus on OHS and labor rights driven by the need to satisfy the audit requirements of global electronics brands. 5) Sahoo et al. (2024): Demonstrated that a strong correlation between pressure and performance (reflected in high mean scores) validates the role of institutional pressures as catalysts for green supply chain management, particularly in high-tech clusters like CALABARZON.

2.8. Statistical Treatment Data

To systematically analyze the quantitative data gathered from the electronics manufacturing firms in CALABARZON, several statistical tools were employed. The primary objective was to determine how institutional pressures predicted the adoption of sustainability practices.

Multiple Linear Regression Analysis served as the central statistical treatment for this study. This method was utilized to examine the collective and individual influence of the three independent variables—Coercive, Mimetic, and Normative pressures—on the dependent variables, which comprised the Environmental, Social, and Economic sustainability practices. By employing this analysis, the researcher was able to calculate the Coefficient of Determination (R^2), which quantified the percentage of variance in sustainability adoption that could be explained by these institutional pressures.

Furthermore, the Beta coefficients (β) derived from the regression model were used to identify which specific institutional pressure served as the most significant predictor of firm behavior. This approach followed the methodology of Sahoo et al. (2024), who argued that multiple regression is the most effective tool for determining whether sustainability is driven more by regulatory mandates (Coercive) or industry benchmarking (Mimetic). The F-test was also applied to assess the overall significance of the regression model, ensuring that the relationships observed were not due to random chance.

In addition to regression, the following supplementary treatments were applied: *Weighted Mean*: To describe the perceived levels of institutional pressure and the extent of sustainability implementation based on the 6-point Likert Scale. *Pearson's Correlation:* To measure the strength and direction of the linear relationship between the variables before proceeding with the regression analysis. *Cronbach's Alpha:* As previously detailed, this was used during the pilot phase to ensure the internal consistency of the multi-item scales.

These statistical procedures provided the empirical foundation necessary to answer the research questions and ensure the validity of the study's conclusions regarding the professionalization of environmental stewardship in the region.

2.9. Ethical Consideration

To In accordance with the standards set by the Research Ethics Review Council (RERC), the researcher conducted the study with the highest level of integrity, prioritizing the protection of the participants' rights and welfare. Before the commencement of data collection, the researcher secured formal ethics clearance and ensured that all procedures aligned with the institutional mandates for human-centric research. Central to this was the principle of informed consent; every respondent was provided with a clear explanation of the study's purpose, the voluntary nature of their participation, and their absolute right to withdraw at any stage without consequence. This process ensured that the informants—primarily manufacturing firm employees within the CALABARZON electronics sector were fully aware of the scope of their involvement and the intended use of their data.

To ensure strict compliance with the Data Privacy Act of 2012 (R.A. 10173), the researcher implemented rigorous protocols to safeguard the anonymity of both the individual respondents and their respective manufacturing firms. All data were processed and reported in aggregate form to prevent the identification of specific organizations, and raw data were stored in encrypted digital files accessible only to the researcher.

Furthermore, the researcher upheld the principle of non-maleficence by ensuring that the survey items whether administered via Google Forms or the supplementary pen-and-paper method did not solicit proprietary or sensitive corporate information that could jeopardize a participant's professional standing. Upon the conclusion of the study, all raw data were scheduled for secure disposal to ensure the permanent protection of participant confidentiality.

3. Results and Discussion

3.1. Descriptive Statistics

The *Profile of Respondents.* The study successfully gathered data from 102 respondents across the CALABARZON electronics sector, representing a balanced distribution of operational and strategic perspectives. The profile indicates a significant emphasis on experienced management and technical personnel, which is vital for assessing the professionalization of environmental stewardship.

As shown in Table 4, the largest segments of respondents are Mid-Level Management (31.4%) and those in specialized Production/Maintenance roles (33.3%). Junior Associates comprise 24.5% of the sample, while Senior and Executive levels represent approximately 10.8% of the participants. This distribution ensures that the findings reflect the views of those who directly implement sustainability protocols on the factory floor as well as the administrative leaders who align these practices with the firm's long-term roadmap.

Table 4: Respondent Profile by Hierarchical Position (N=102)

Position Level	Frequency	Percentage
Junior Associate (Analyst, Specialist, Associate I/II)	25	24.5%
Mid-Level Management (Team Leader, Supervisor, Manager)	32	31.4%
Senior Management (Director, Regional Manager)	6	5.9%
Executive Level / C-Suite (VP, CEO, President)	5	4.9%
Others (Production, Maintenance etc.)	34	33.3%
Total	102	100%

The expertise of the respondents is highlighted by their tenure. One-third of the participants (33.3%) have more than 10 years of experience in their current roles, while 29.4% have 1 to 3 years of experience. This high level of professional maturity suggests that the respondents possess a deep understanding of the firm's historical shift toward green manufacturing.

Profile of Participating Firms. The electronics firms surveyed represent the backbone of the Philippine export economy, characterized by structural stability, large-scale operations, and standardized sustainability commitments. As summarized in Table 5, the participating firms are distributed across various high-tech niches, with Consumer Electronics (23.5%) and Automotive Electronics (22.5%) as the most represented sectors, followed by Industrial Components (16.7%) and Semiconductor Components (14.7%). This diverse distribution ensures that the findings reflect the broader regional electronics cluster, capturing varied operational responses to institutional pressures.

Table 5: Distribution of Participating Firms by Sector (N=102)

Electronics Sub-sector	Frequency	Percentage
Consumer Electronics	24	23.5%
Automotive Electronics	23	22.5%
Industrial Components	17	16.7%
Semiconductor Components	15	14.7%
Others (Telecommunications, Medical, etc.)	23	22.5%
Total	102	100%

The sample is composed of well-established entities, with 32.4% of firms operating in the Philippines for over 20 years. This longevity is a critical factor in institutionalization, as older firms often possess more ingrained "normative" values regarding stewardship (Alinda et al., 2023). In terms of scale, the sample is dominated by Large-scale enterprises (60.8%) with 500 or more employees. According to Sahoo et al. (2024), larger firms are often more visible to regulators and international buyers, thereby facing intensified coercive pressures to adopt green supply chain practices.

Furthermore, a culture of formal standardization is evident, as 100% of participating firms hold at least one sustainability-related certification (e.g., ISO 14001), while 22.6% possess four or more. This saturation of certifications suggests that in the CALABARZON cluster, sustainability has transitioned from a voluntary initiative to a validated operational standard. This high degree of certification reflects what Jagtap et al. (2022) describe as the "professionalization of environmental stewardship," where firms utilize third-party validations to mitigate the risks of symbolic decoupling and secure legitimacy in the global market. Integrating SDG 9 (Industry and Infrastructure) and SDG 12 (Responsible Production), this profile confirms that these firms are structurally equipped to move beyond compliance toward substantive sustainability integration.

Research Variables. The intensity of institutional pressures and the adoption of sustainability practices were evaluated using a 6-point Likert scale. The results indicate that electronics firms in the region operate under a "Very High" level of external influence and have achieved significant progress in their sustainability efforts, as shown in Table 6.

Table 6: Summary of Means and Interpretations (N=102)

Variables	Grand Mean	Std. Deviation	Interpretation
Coercive Pressure (CP)	5.186	1.114	Very High
Mimetic Pressure (MP)	5.022	1.112	Very High
Normative Pressure (NP)	5.012	1.096	Very High
Sustainability Practices (TBL)	5.150	1.082	Very High

Coercive Pressure yielded the highest grand mean (5.186). Specific indicators reveal that compliance with government regulations and requirements from global buyers are the strongest drivers. This suggests that the regulatory "stick" of bodies like PEZA and the DENR, combined with strict international codes of conduct, are the most prominent forces in the landscape. This finding is consistent with Alinda et al. (2023), who argue that in developing economies, legal mandates are the primary catalyst for shifting manufacturing behavior toward sustainable models. Furthermore, Khan et al. (2022) note that for export-oriented sectors, coercive pressure is "transnational," as global supply chain requirements act as shadow regulations that local firms must follow to maintain market access.

Mimetic (5.022) and Normative (5.012) Pressures also registered "Very High" levels. The high Mimetic score implies that CALABARZON firms engage in frequent benchmarking to remain competitive. According to Sahoo et al. (2024), in high-density industrial clusters, firms imitate "Green Champions" to reduce uncertainty and enhance reputation. Simultaneously, the strength of Normative Pressure reflects the professionalization of stewardship through networks like SEIPI. Al-Zaqeba et al. (2022) suggest these networks create a "logic of appropriateness," where sustainability becomes an internalized professional value rather than a mere obligation. Similarly, Stefanescu (2022) posits that such isomorphic forces are essential for the structural integration of SDGs into corporate strategy.

Sustainability Practices achieved a grand mean of 5.150, with Social (5.173) and Environmental (5.145) performance scoring particularly high. These results indicate that firms are substantively integrating green practices—such as hazardous waste management and resource efficiency—into core operations to achieve SDG 12 (Responsible Production).

This emphasis is supported by Jagtap et al. (2022), who observed that electronics firms prioritize environmental compliance to avoid penalties while investing in social welfare to pass international labor audits. However, the slightly lower mean for Economic Performance may reflect the "sustainability-efficiency paradox" (International Journal of Production Research, 2025), where financial returns on green investments lag behind immediate social and environmental gains. Despite this, Sharma et al. (2022) maintain that reviving the Triple Bottom Line requires this exact type of integrated approach. Overall, the "Very High" interpretation confirms that the CALABARZON electronics sector has moved beyond symbolic adoption toward a professionalized sustainability roadmap that aligns with SDG 9 (Industry and Innovation).

3.2. Results of Regression Analysis

Inferential Statistics and Hypothesis Testing. To determine the causal relationship between these institutional pressures and sustainability adoption, a Multiple Linear Regression (MLR) was conducted. The model tested how well the three pressures predict the implementation of the Triple Bottom Line.

Model Fit. The regression analysis produced an Adjusted R^2 of 0.925, indicating that 92.5% of the variance in sustainability practices is explained by the combined influence of Coercive, Mimetic, and Normative pressures. This high predictive power confirms that the Institutional Theory framework is exceptionally well-suited for explaining organizational behavior in the Philippine electronics sector. The ANOVA results ($F = 413.30$, $p < .001$) further validate that the model is statistically significant as shown in Table 7.

Table 7: Anova Results

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	89.863	3	29.954	413.303	.000[b]
	Residual	7.103	98	.072		
	Total	96.966	101			

a. Dependent Variable: Sustainable_Prac; b. Predictors: (Constant), NP, CP, MP

Hypotheses Testing Results. The following results highlight the individual contribution of each pressure to the adoption of sustainability practices as shown in Table 8.

Table 8: Multiple Linear Regression Coefficients

Predictor Variables	Beta (β)	t-value	Sig. (p)	Decision on H_o
Coercive Pressure (CP)	0.414	6.021	.000	Rejected
Mimetic Pressure (MP)	0.272	3.096	.003	Rejected
Normative Pressure (NP)	0.305	3.776	.000	Rejected
Dependent Variable: Sustainability Practices (TBL)				

H_o^1 (Coercive Pressure): The null hypothesis is rejected. Coercive Pressure is the strongest predictor ($\beta = 0.414$, $p < .001$). This objective finding confirms that sustainability in CALABARZON is primarily a response to formal mandates. As regulatory and buyer requirements intensify, firms significantly increase their sustainability performance.

H_o^2 (Mimetic Pressure): The null hypothesis is rejected. Although significant ($\beta = 0.272$, $p = .003$), Mimetic Pressure has the lowest impact. While firms benchmark against successful competitors to reduce uncertainty, they are less motivated by simple imitation than they are by legal necessity or professional norms.

H_o^3 (Normative Pressure): The null hypothesis is rejected. Normative Pressure is a highly significant predictor ($\beta = 0.305$, $p < .001$). This trend shows that professional associations like SEIPI and shared industry ethics successfully "normalize" sustainability, turning it into an expected professional standard for engineers and managers.

Summary of Major Findings. The core objective of this study was to determine the extent to which institutional pressures drive the adoption of sustainability practices. The results provide overwhelming empirical evidence that the institutional environment is the primary catalyst for the Triple Bottom Line (TBL) in the region. The Adjusted R^2 of 0.925 indicates that nearly 93% of the variance in sustainability adoption is explained by the three pressures. The hierarchy of influence, Coercive ($\beta = 0.414$), followed by Normative ($\beta = 0.305$) and Mimetic ($\beta = 0.272$) paints a picture of a sector that is highly responsive to formal mandates and professional standards.

Coercive pressure emerged as the most powerful predictor, consistent with the findings of Alinda et al. (2023), who argued that in developing economies, regulatory compliance is the most immediate driver of environmental performance. In CALABARZON, this is manifested through the strict oversight of PEZA and the DENR. The results confirm that electronics firms prioritize sustainability because it is a non-negotiable requirement for maintaining their "license to operate" and for satisfying the strict procurement codes of global export partners.

While significant, Mimetic pressure had the lowest relative impact. This differs from studies in less technical industries where "copying" successful competitors is a primary survival strategy. In the high-precision electronics sector, simple imitation is insufficient. As suggested by Sarstedt et al. (2022), firms in specialized manufacturing niches rely more on certified standards (Normative) and legal requirements (Coercive) than on the symbolic imitation of rivals.

Normative pressure was the second most significant driver, supporting the theories of Islam (2024) regarding the "professionalization" of sustainability. Through industry networks like SEIPI, sustainability has moved from a legal burden to a professional expectation. This trend suggests that as managers and engineers within the CALABARZON cluster share best practices and technical standards, they develop a collective ethical framework that prioritizes the Triple Bottom Line.

3.3. Conclusion

The study concludes that the electronics manufacturing sector in CALABARZON has successfully integrated sustainability into its core operations, as evidenced by a "Very High" level of adoption across the Triple Bottom Line dimensions. This transition is not an isolated organizational phenomenon but a calculated strategic response to a highly structured institutional environment. With an Adjusted R^2 of 0.925, the research empirically proves that nearly 93% of the variance in sustainability practices is dictated by external pressures. Among these, Coercive Pressure emerged as the primary catalyst, indicating that formal mandates from regulatory bodies like PEZA and the DENR, alongside strict global buyer requirements, serve as the foundational "stick" for compliance. Furthermore, the significant impact of Normative Pressure confirms that professional networks and industry associations, such as SEIPI, have effectively "normalized" sustainability as a benchmark for professional excellence. While Mimetic Pressure also plays a role in reducing organizational uncertainty through benchmarking, it remains the weakest driver, suggesting that these high-tech firms prioritize legal and professional standards over simple competitive imitation. Ultimately, the study validates that the institutional framework is an exhaustive predictor of corporate sustainability in the region.

3.4. Recommendation

Based on the results, it is recommended that industry managers shift their focus from reactive compliance to proactive leadership by leveraging professional networks to adopt more substantive, rather than symbolic, sustainability practices. Given the dominance of coercive drivers, executives should prioritize obtaining multiple ESG-related certifications to satisfy both regulatory mandates and the increasingly stringent demands of the global export market. For policymakers, the results suggest a need to strengthen "Green Ecozone" incentives to reward firms that exceed minimum environmental standards. Furthermore, government agencies like the DENR and DTI should collaborate more closely with industry associations to co-develop sustainability roadmaps, effectively using normative influence to foster a culture of voluntary excellence. Finally, future researchers are encouraged to conduct longitudinal studies to track how these pressures evolve in response to emerging global regulations, such as international carbon adjustment mechanisms, and to expand the geographic scope of this study to other industrial hubs in the Philippines to compare regional institutional dynamics.

3.5. Limitations of the Study

While this study provides robust empirical evidence regarding the influence of institutional pressures on sustainability practices, several inherent limitations must be acknowledged to contextualize the findings and guide future research.

First, the study is geographically and sectoral constrained. The research focused exclusively on the electronics manufacturing industry within the CALABARZON region. While this is the premier industrial hub of the Philippines, the findings may not be fully generalizable to other sectors such as service-oriented industries or food manufacturing or to other regions with different economic profiles and localized regulatory enforcement. The unique dominance of PEZA and the high concentration of global export partners in CALABARZON create an "institutional density" that might not exist in less-developed industrial zones.

Second, the reliance on self-reported data presents a potential risk of social desirability bias. Since the 102 respondents were management-level professionals (including Executives and Mid-Level Managers), there is a possibility that participants provided responses that align with their firms' public-facing sustainability policies rather than their actual daily operational realities. Although the high R^2 of 0.927 suggests a strong statistical

relationship, self-reporting can sometimes lead to an overestimation of Social Performance or Environmental Performance mean scores.

Third, the cross-sectional nature of the research design limits the ability to observe long-term trends. The data captures a snapshot of the institutional environment and sustainability adoption in early 2025. Because institutional pressures are dynamic evolving with new international trade agreements and changing climate policies this study cannot account for how these pressures fluctuate over time or how a firm's response might shift during an economic downturn versus a period of growth.

Fourth, the study primarily focused on three dimensions of Institutional Theory (Coercive, Mimetic, and Normative). While these explained a staggering 92.7% of the variance, the remaining 7.3% is attributed to factors outside the scope of this research. Variables such as internal corporate culture, individual leadership values of the CEO, and specific financial constraints were not explicitly modeled in the regression. These internal micro-foundations could provide further nuance into why some firms exceed compliance while others merely meet it.

Finally, the sampling method was limited by accessibility. Although purposive sampling was used to target those with the most expertise, the study was restricted to firms that were willing to participate during the data collection period. Firms with poorer sustainability records may have been less likely to respond to a survey on the topic, potentially creating a survivor bias where the sample represents more transparent and compliant organization.

3.6. Declaration

I, the undersigned, hereby declare that this research study, entitled "Institutional Pressures and Their Effects on Sustainability Practices of Electronics Manufacturing Firms in CALABARZON," is an original work conducted in partial fulfillment of the requirements for the degree of Master in Business Administration (MBA) at De La Salle Lipa.

I verify that this study was carried out with the formal approval and ethical oversight of the Research Ethics Review Council (RERC) of De La Salle Lipa. All protocols regarding participant safety, voluntary involvement, and data privacy were strictly followed in accordance with the green light granted by the council.

In the spirit of transparency and academic honesty, I also acknowledge the use of Gemini as a supportive tool in the preparation of this manuscript. The AI was utilized to aid in enhancing grammar, refining sentence construction, and organizing my thoughts more effectively. However, the core ideas, data collection, statistical analysis, and final interpretations remain my own, and I hold full responsibility for the integrity and content of this research.

Acknowledgements

These First and foremost, I offer my deepest gratitude to the Almighty God, who has been my constant guide and source of strength. His grace provided the "blessed hope" necessary to persevere and finish this race when challenges seemed insurmountable. As it is written in Philippians 4:13, *"I can do all things through Christ who strengthens me."*

I extend my sincere appreciation to my Alma Mater, De La Salle Lipa, and to all my instructors who have shaped my business management skills and professional character. Special thanks are due to my adviser, Dr. Jasmin D. De Silva, and my TIC, Dr. Sheila Maloles, for their invaluable knowledge, patient mentoring, and expert guidance throughout the development of this paper. I also acknowledge the significant efforts of my statistician, Dr. Allan Nicko F. Rodelas, for his technical expertise in analyzing the data. I am profoundly

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Most importantly, I want to highlight the unwavering support of my loving wife, Clarisa M. Asuncion. She was my partner in the field, helping me conduct the pen-and-paper surveys with incredible sacrifice. Even in the scorching heat of the sun, she tirelessly managed to interview target respondents within our community who work in the electronics industry. Her dedication was essential to the success of this re-survey process. To my loving son, Paul Joshua M. Asuncion, thank you for witnessing and understanding my "busyness." Your simple acts of kindness, like checking on me and asking if I needed a glass of water, provided the quiet encouragement I needed to keep going.

I conclude this journey by holding onto the promises found in Deuteronomy 31:6 & 8: *"Be strong and courageous. Do not be afraid or terrified because of them, for the Lord your God goes with you; He will never leave you nor forsake you... The Lord himself goes before you and will be with you; He will never leave you nor forsake you. Do not be afraid; do not be discouraged."*

To God be all the glory!

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Appendix A. Signed Research Ethics Review Clearance Form

OVCRII

DE LA SALLE LIPA
Office of the Vice Chancellor for Research, Innovation & Internationalization
Research Management and Coordination Office

RESEARCH ETHICS CLEARANCE FORM
For Thesis Proposals

Names of Student Researcher(s):
ASUNCION, MARK KRISTOFER I.

Research Project Title:
Institutional Pressures and Their Effects on Sustainability Practices of Electronics Manufacturing Firms in Laguan

College: CBEAM

Department: GRADUATE PROGRAM

Course: MBA

Expected Duration of the Project: from: **FEB 2026** to: **MAR 2026**

Ethical considerations:

In accordance with the standards set by the Research Ethics Review Council (RERC), the researcher will conduct the study with the highest level of integrity, prioritizing the protection of the participants' rights and welfare. Before the commencement of data collection, the researcher will secure formal ethics clearance and ensure that all procedures align with the institutional mandates for human-centric research. Central to this is the principle of informed consent, whereby every respondent will be provided with a clear explanation of the study's purpose, the voluntary nature of their participation, and their absolute right to withdraw at any stage without consequence. This process ensures that the informants primarily managers within the Laguna electronics sector are fully aware of the scope of their involvement and the intended use of their data.

To ensure strict compliance with the Data Privacy Act of 2012 (R.A. 10173), the researcher will implement rigorous protocols to safeguard the anonymity of both the individual respondents and their respective manufacturing firms. All data will be processed in aggregate form to prevent the identification of specific organizations, and raw data will be stored in encrypted digital files accessible only to the researcher. Furthermore, the researcher will uphold the principle of non-maleficence by ensuring that the survey items do not solicit proprietary or sensitive corporate information that could jeopardize a participant's professional standing.

To the best of my knowledge, the ethical issues listed above have been addressed in the research.

jdesilva

JASMIN D. DE SILVA, PhD
Name and Signature of Adviser
Date: 01.30.202026

Noted by:

SHEILA E. MALOLES, DBA
Name and Signature of the Teacher in Charge
Date:

Reviewed by:

ALICIA O. BARTE,RN,RM,MAN,EdD
Research Ethics Review Representative
Date:

Recommendation:

( ) Full Review *(for endorsement to RMCO)*
( ) Expedited Review *(for RER Council Rep review)*
( ) Exempted from Ethics Review

Noted by:

ERICKSON E. MARTINEZ, PhD
Name and Signature of the Department Chairperson
Date: 02.10.2026

JASMIN D. DE SILVA, PhD
Name and Signature of the Dean
Date: 02.09.2026

Appendix B. Capstone Action Plan

Title of the Project: ECO-SHIFT: Transitioning from Reactive Compliance to Proactive Sustainability Leadership in the CALABARZON Electronics Sector.					
Goals/Objectives: The primary goal of this project is to institutionalize a Triple Bottom Line (TBL) framework within the firm's operations to exceed global and local sustainability mandates. Specific objectives include: a) Regulatory Excellence, b) Professional Standard-Setting, c) Operational Efficiency, and d) Transparent Reporting					
Timeframe: 12 Months (divided into four 3-month strategic phases)		Unit/Institution Responsible for the Project: The Sustainability & Strategic Operations Office (SSOO) under the direct oversight of the Office of the General Manager		Stakeholders: Internal: Executive Leadership | Engineering Department | Production Staff | Human Resources External: PEZA | DENR | SEIPI | Global Export Partners/Buyers | local CALABARZON community.	
Project Team: Compliance Specialist | Engineering & Sustainability Coordinator | HR & Ethics Officer | Data Analyst/Statistician					
ACTION PLAN					
Activities What will be done?	In-charge Who will do it?	Timeline By When?	Resources A. Resources Available B. Resources needed (Financial, Human, Political & Other)	Potential Risks A. What individuals or organizations might resist? B. How?	Communications Plan A. Who is Involved? B. What Methods? C. How Often?
PHASE 1: Coercive Alignment (Regulatory Audit)	Compliance Officer & EHS Manager	Months 1-3	Existing PEZA/DENR permits and global buyer manuals. Financial: Audit fees. Human: External legal consultants. Political: Stronger ties with DENR/PEZA.	A. Resistors: Operations Managers. B. How: Resisting stricter waste protocols due to speed-of-production concerns.	A. Who: Leadership & EHS. B. Method: Compliance meetings. C. Frequency: Weekly.
PHASE 2: Normative Integration (Professional Standards)	HR Director & Engineering Head	Months 4-6	Active SEIPI membership and internal training rooms. Financial: ISO 14001 certification costs. Human: Certified ISO auditors. Other: Training modules.	A. Resistors: Senior Engineers. B. How: Dismissing new "ethical standards" as unnecessary paperwork.	A. Who: All staff. B. Method: Workshops & Townhalls. C. Frequency: Bi-monthly.
PHASE 3: Mimetic Strategy (Benchmarking & Tech)	Operations Manager & Facilities Head	Months 7-9	Access to industry reports and benchmarking data. Financial: CAPEX	A. Resistors: Finance Dept. B. How: Blocking budget approvals	A. Who: Dept. Heads. B. Method: Site visits & Reports.

			for green tech (Solar/Water recycling). Human: Green tech vendors.	for high-cost sustainable equipment.	C. Frequency: Monthly.
PHASE 4: TBL Reporting & Full Integration	General Manager & Sustainability Lead	Months 10-12	Collected operational data from Phases 1-3. Financial: Publication/GRI report costs. Human: Graphic designers/PR experts.	A. Resistors: External Competitors. B. How: Spreading "greenwashing" claims to devalue the firm's efforts.	A. Who: Stakeholders/Buyers. B. Method: Annual Report & Press Release. C. Frequency: Quarterly/Annual.
Evidence of Success	The following indicators will serve as tangible proof that the project has successfully transitioned the firm from reactive compliance to proactive sustainability leadership: 1) Regulatory & Coercive Validation: Attainment of a "Zero-Finding" Audit Report from PEZA and the DENR. a. Successful renewal of "Green Ecozone" status, resulting in measurable tax incentives or rebates. b. 100% pass rate on Global Buyer Sustainability Audits (e.g., RBA - Responsible Business Alliance audits). 2) Professional & Normative Standing: a. Official ISO 14001:2015 (Environmental Management) and ISO 45001:2018 (Occupational Health and Safety) certifications. b. A 100% completion rate for Engineering Ethics and Sustainability workshops among technical staff. c. Active leadership roles held by company executives within SEIPI or regional industrial councils. 3) Operational & Mimetic Efficiency: a. Documented 15% reduction in Carbon Footprint and a 10% decrease in energy costs compared to the previous fiscal year. b. Implementation of at least two "Best-in-Class" green technologies identified during the competitive benchmarking phase. 4) Triple Bottom Line (TBL) Impact: a. Publication of a GRI-Certified Sustainability Report showcasing balanced growth in Economic, Social, and Environmental sectors. b. Positive shift in Employee Engagement scores regarding the firm's ethical and social reputation.				
Evaluation Process	1. Continuous Monitoring (Monthly) ▪ What: Tracking utility consumption (electricity/water), waste diversion rates, and safety incidents. ▪ How: Monthly "Sustainability Scorecards" presented to the Operations Committee. ▪ Why: To ensure the Mimetic (benchmarking) goals are being met in real-time. 2. Quarterly Performance Reviews (Every 3 Months) ▪ What: Reviewing the progress of the Action Plan Phases (Coercive, Normative, Mimetic). ▪ How: Internal audits and gap analyses conducted by the Sustainability & Strategic Operations Office (SSOO). ▪ Why: To adjust the strategy if external regulations (Coercive pressures) change unexpectedly. 3. Formative Feedback Loops (Semi-Annual) ▪ What: Gathering feedback from employees and industry partners. ▪ How: Focus Group Discussions (FGDs) with production teams and networking sessions with SEIPI members. ▪ Why: To measure the strength of the Normative shift—ensuring sustainability is becoming part of the company culture. 4. Summative Evaluation (Annual) ▪ What: A final assessment of the project's overall impact on the firm's Triple Bottom Line. ▪ How: Comparing the "Post-Project" sustainability mean scores against your thesis "Baseline" (Mean =				

	5.15). ▪ Why: To statistically validate if the project effectively managed the institutional pressures to produce higher sustainability performance.

Appendix C. Demographic Profile of Respondents and Firm Profile

Respondent and Firm Profile	Frequency	Percent
Current Position/Job Title		
Junior Associate Level	25	24.5
Mid-Level Management	32	31.4
Senior Management	6	5.9
Executive Level / C-Suite	5	4.9
Others	34	33.3
Length of service in your current company		
Less than 1 year	10	9.8
1–3 years	30	29.4
4–6 years	17	16.7
7–10 years	11	10.8
More than 10 years	34	33.3
Sub-sector Type		
Consumer Electronics	24	23.5
Semiconductor Components	15	14.7
Industrial Components	17	16.7
Automotive Electronics	23	22.5
Others	23	22.5
Length of years the company is operating		
Less than 1 year	6	5.9
1–10 years	35	34.3
11–20 years	18	17.6
more than 20 years	33	32.4
Firm Size (Number of Employees)		
100–499 (Medium-scale)	37	36.3
500 and above (Large-scale)	62	60.8
Others (Below 100)	3	2.9
Number of Certificates		
One only	34	33.3
Two only	25	24.5
Three only	20	19.6
Four only	11	10.8
Others	12	11.8

Appendix D. Survey Questionnaires

Part I: Respondent and Firm Profile

Please provide the following information. All individual data will remain strictly confidential and will only be reported in aggregate form.

Name of Respondent (Optional):
Current Position/Job Title:
Number of Years in the Current Company:

[ ] Less than 1 year
[ ] 1–3 years
[ ] 4–6 years
[ ] 7–10 years
[ ] More than 10 years

Sub-sector Type:

[ ] Consumer Electronics
[ ] Semiconductor/Components
[ ] Industrial/Medical Electronics
[ ] Telecommunications Equipment

Number of Years of Firm Operation:_ years
Firm Size (Number of Employees):

[ ] 100–499 (Medium-scale)
[ ] 500 and above (Large-scale)

Current Certifications (Check all that apply):

[ ] ISO 14001 (Environmental Management)
[ ] ISO 45001 (Occupational Health & Safety)
[ ] RBA (Responsible Business Alliance)
[ ] LEED/Green Building Certification

Part II: Institutional Pressures

To what extent do you agree with the following statements regarding the external factors influencing your firm's sustainability decisions? (1 = Strongly Disagree, 2 = Disagree, 3 = Slightly Disagree, 4 = Slightly Agree, 5 = Agree, 6 = Strongly Agree).

Construct & Indicators	1	2	3	4	5	6
A. Coercive Pressure (Regulatory & Contractual Compliance) *Focus: Measuring the effect of formal mandates as a driver for organizational action.*						
CP1: Our organization prioritizes the implementation of environmental protocols to ensure full alignment with PEZA and DENR regulatory standards.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
CP2: We adhere to sustainability certifications as a fundamental requirement for maintaining and renewing contracts with global electronics buyers.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
CP3: The provisions of the Extended Producer Responsibility (EPR) Act serve as a primary guide for our firm's hazardous waste management strategy.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
CP4: Our firm proactively meets international environmental mandates (e.g., RoHS or REACH) to secure our continued participation in the global export market.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
CP5: Our social responsibility and safety initiatives are structured to meet the rigorous audit requirements of international labor and regulatory bodies.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
B. Mimetic Pressure (Competitive Benchmarking) *Focus: Measuring the effect of industry leaders as models for sustainable behavior.*						
MP1: Our firm adopts Green Manufacturing practices that have demonstrated success among leading electronics manufacturers in the region.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
MP2: We utilize the Environmental, Social, and Governance (ESG) reporting frameworks of industry leaders as a benchmark for our own disclosures.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
MP3: Our organization integrates sustainable innovations that are widely recognized as best practices among top-performing firms in the CALABARZON cluster.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
MP4: We adopt new eco-friendly production technologies to ensure our operational standards remain at par with global industry leaders.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
MP5: Our management views the adoption of carbon-neutrality targets as an essential step in maintaining the firm's competitive legitimacy within the sector.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

C. Normative Pressure (Professional Ethics & Networks) *Focus: Measuring the effect of shared values and professional associations.*						
NP1: Our commitment to the Triple Bottom Line (TBL) is primarily driven by the professional ethical standards of our management and engineering teams.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
NP2: The sustainability roadmaps and seminars provided by SEIPI significantly influence our firm's internal environmental and social policies.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
NP3: Our leadership team treats the integration of social and environmental welfare as a fundamental professional responsibility.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
NP4: We participate in industry networks that foster a collective culture of environmental stewardship among electronics professionals in CALABARZON.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
NP5: Our firm encourages the adoption of sustainable practices as a core component of professional excellence and organizational integrity.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Part III: Sustainability Practices

Rate the degree to which your firm has integrated the following into its operations. (1 = Strongly Disagree, 2 = Disagree, 3 = Slightly Disagree, 4 = Slightly Agree, 5 = Agree, 6 = Strongly Agree).

Dimensions of Sustainability (TBL)	1	2	3	4	5	6
D. Environmental Performance						
EN1: Our facility has successfully implemented waste-reduction measures that consistently decrease the volume of hazardous E-waste generated.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
EN2: We utilize advanced resource-efficiency systems, such as water recycling and energy conservation, within our daily manufacturing operations.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
EN3: Our firm maintains a high-standard tracking system to ensure the safe and responsible disposal of all toxic chemical components.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
EN4: We prioritize the procurement of responsibly sourced materials and conflict-free minerals for our electronics assembly processes.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
EN5: Our organization has made measurable progress in reducing carbon emissions through the adoption of cleaner energy sources or offset programs.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
E. Social Performance						
SO1: Our company provides comprehensive occupational health and safety programs that prioritize the well-being and security of all employees.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
SO2: We actively contribute to the social and economic development of the local communities surrounding our operations in CALABARZON.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
SO3: Our firm maintains transparent labor practices and fair grievance mechanisms to support an equitable working environment.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
SO4: We invest in continuous technical training and upskilling programs to enhance the professional growth of our Filipino workforce.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
SO5: Our manufacturing operations are designed to ensure minimal impact on the health and safety of the surrounding residential areas.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
F. Economic Performance						
EC1: The integration of sustainable practices has resulted in long-term operational cost savings through enhanced resource efficiency.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
EC2: Our firm's commitment to the Triple Bottom Line has strengthened our reputation and secured high-value contracts with global partners.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
EC3: We have observed that sustainable investments contribute positively to the overall financial resilience and brand value of the company.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
EC4: Our proactive approach to environmental standards has reduced potential legal risks and improved our operational continuity.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
EC5: Our sustainability performance has increased our firm's appeal to socially responsible investors and international financial partners.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Appendix E. Informed Consent Form

De La Salle Lipa
Mark Kristofer I. Asuncion
College of Business, Economics, Accountancy, and Management
De La Salle Lipa
Institutional Pressures and Their Effects on Sustainability Practices of
Electronics Manufacturing Firms in CALABARZON

You are being invited as one of the respondents to participate in this study, and your participation is entirely voluntary. If you are below 18 years of age, your participation in this study will require parental consent. Consent form will be issued to parents or guardians in compliance with ethical research standards. Your participation involves the completion of structured questionnaire that takes approximately 10 minutes. You are free to discuss the study with anyone you feel comfortable talking to before making your decision. You may withdraw and discontinue answering the survey at any time without penalty. If there are unclear questions or procedures, the researcher will be available to explain them, and you may ask questions before, during, or after your participation. The researcher assures that all responses will be kept strictly confidential.

PURPOSE OF THE STUDY
You are invited to participate in a research study aimed at analyzing how various institutional pressures specifically regulatory mandates, competitive benchmarking, and professional ethics, influence the adoption of sustainability practices within the electronics sector in CALABARZON. Your professional perspective as a manager or key decision-maker is vital to understanding how firms navigate institutional complexity and the transition toward green manufacturing.

STUDY PROCEDURES
If you agree to participate in this study, you will be asked to complete a self-administered online survey questionnaire:

- Invitation and Consent

You will be informed that participation is voluntary and that you may withdraw at any time without penalty. You will also be informed of the purpose of this study and your rights as a participant. If you are below 18 years of age, your participation in this study will require parental consent which will be issued to your parents or guardians.

- Completion of the Questionnaire

If you agree to participate, you will be asked to complete a structured survey that takes approximately 10 minutes. The survey utilizes a 6-point scale to evaluate your firm's response to external pressures and its performance across the Triple Bottom Line (TBL): environmental, social, and economic dimensions (Strongly Disagree, Disagree, Slightly Disagree, Slightly Agree, Agree, Strongly Agree):
a) Coercive Pressure (Regulatory & Contractual Compliance) (5-items): Measuring the effect of formal mandates as a driver for organizational action.
b) Mimetic Pressure (Competitive Benchmarking) (5-items): Measuring the effect of industry leaders as models for sustainable behavior.
c) Normative Pressure (Professional Ethics & Networks) (5-items): Measuring the effect of shared values and professional associations.
d) Sustainability Practices

- Environmental Performance (5-items)

- Social Performance (5-items)
- Economic Performance (5-items)

- Confidentiality and Anonymity

Providing your name or any identifying information will not be asked. Your responses will be kept strictly confidential.

DURATION
The survey should take approximately 10-15 minutes

VOLUNTARY PARTICIPATION
Your participation in this study is entirely voluntary, and the choice to take part rests with you. If you agree to participate, you will be asked to sign this consent form. After signing this form, you are still free to withdraw at any time and for any reason, without any penalty. Choosing not to continue will not affect your relationship with the researcher. Your participation will not entail any risk or benefit to your academic performance or assessment. If you withdraw before data collection is completed, any information you have provided will be securely destroyed.

RISKS
Your participation in this study involves minimal risk. You will only be asked to answer a short survey questionnaire about your perceptions of service quality, ESG practices, emotional experiences, and of your intention to be loyal in the institution. Some items may ask you to reflect on your satisfaction with the institution or your emotional experiences, which could cause discomfort. To minimize this, you are free to skip any question you do not wish to answer, and you may withdraw from the study at any time without penalty. No identifying information will be collected, and all responses will be kept strictly confidential and analyzed only in overall average form. These measures ensure that your privacy, dignity, and well-being are fully protected throughout the study.

BENEFITS
There may be no direct benefit to you from participating in this study. While there is no direct financial compensation, your input provides critical insights for policymakers at PEZA, DENR, and SEIPI to help design frameworks that support sustainable industrialization and responsible resource management.

CONFIDENTIALITY
Your responses to this research will be anonymous. Every effort will be made by the researcher to treat them with strict confidentiality, including the following:

- Data Collection and handling of information will follow the RA 10173 Data Privacy Act of 2012 (Philippines), ensuring that confidential, classified, or private information will not be disclosed.
- A code or pseudonym will be assigned to each participant to replace personal names in all research notes, survey records, and documents.
- All related materials, notes, and survey responses will be handled and stored securely in password-protected files, which is only accessible to the researcher.
- No identifying information (such as names, photos, or recordings) will be collected during the survey.
- Email addresses will be collected when answering the online survey questions but not recorded.

CONTACT INFORMATION

This study was approved by the Research Ethics Review Council of DE LA SALLE LIPA. If you have any questions at any time about this study, or if you experience any non-normative sensations as a result of participation, you may contact the researcher whose contact information is on the first page. If you have any questions regarding your rights or treatment as a research participant, or if problems arise during your participation that you do not feel you can discuss with the Principal Investigator, please feel free to send an email to rmco-rer@dlsl.edu.ph.

CONSENT
(This section is mandatory)
I have read the provided information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I understand that I will be given a copy of this form, and the researcher will keep another copy on file. I consent voluntarily to be a participant in this study.
Print Name of Participant: _____
Signature of Participant: _____
Date: _____
Day/month/year

(This section is mandatory)
Print Name of Researcher: Mark Kristofer I. Asuncion
Signature of Researcher: _____
Date: _____
Day/month/year

(This section is optional)
Print Name of Impartial Witness: _____
Signature of Impartial Witness: _____
Date: _____
Day/month/year

(If the participant is illiterate 1]
I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.
Print name of witness: _____
Signature of witness: _____
Date: _____
Day/month/year

_____

1 A literate witness must sign (if possible, this person should be selected by the participant and should have no connection to the research team).

Appendix F. Mean Summary of Coercive Pressure

Respondents	CP1	CP2	CP3	CP4	CP5	Mean
R1	6	6	6	6	6	6
R2	6	5	6	6	6	5.8
R3	6	6	6	6	6	6
R4	6	6	6	6	6	6
R5	6	5	6	6	5	5.6
R6	6	6	6	6	5	5.8
R7	6	6	6	6	6	6
R8	6	6	6	6	5	5.8
R9	5	6	6	6	6	5.8
R10	6	5	5	5	5	5.2
R11	5	5	5	4	5	4.8
R12	6	6	6	6	6	6
R13	6	6	6	6	6	6
R14	6	6	6	6	6	6
R15	5	5	5	5	4	4.8
R16	4	4	4	4	4	4
R17	3	3	3	4	4	3.4
R18	2	2	2	4	4	2.8
R19	2	2	3	2	3	2.4
R20	5	5	5	5	5	5
R21	6	6	6	6	6	6
R22	6	6	6	6	6	6
R23	6	6	6	6	6	6
R24	6	6	6	6	6	6
R25	6	6	6	6	6	6
R26	6	6	6	6	6	6
R27	6	6	6	6	6	6
R28	6	6	6	6	6	6
R29	6	6	6	6	6	6
R30	6	6	6	6	6	6
R31	5	5	5	5	5	5
R32	5	5	5	5	5	5
R33	6	6	5	6	6	5.8
R34	6	6	5	6	5	5.6
R35	5	6	6	5	5	5.4
R36	5	4	4	4	4	4.2
R37	6	6	6	6	6	6
R38	6	6	6	6	6	6

R39	6	6	5	6	6	5.8
R40	4	6	4	6	5	5
R41	6	5	5	5	5	5.2
R42	6	4	5	4	3	4.4
R43	5	5	5	5	5	5
R44	6	6	6	5	6	5.8
R45	6	6	6	6	6	6
R46	5	5	5	5	5	5
R47	5	5	5	5	5	5
R48	5	5	5	5	4	4.8
R49	4	5	5	4	4	4.4
R50	1	1	1	2	2	1.4
R51	5	4	6	5	4	4.8
R52	6	6	5	6	6	5.8
R53	5	4	6	5	4	4.8
R54	4	4	5	5	5	4.6
R55	5	5	5	5	5	5
R56	4	4	4	4	4	4
R57	4	4	4	4	3	3.8
R58	6	6	6	6	6	6
R59	6	5	5	6	6	5.6
R60	5	5	6	6	6	5.6
R61	5	5	5	5	5	5
R62	5	5	5	5	6	5.2
R63	6	5	6	4	4	5
R64	6	6	6	6	6	6
R65	2	2	3	3	2	2.4
R66	2	3	2	2	2	2.2
R67	2	3	6	6	6	4.6
R68	6	6	6	6	6	6
R69	5	4	4	5	5	4.6
R70	5	4	4	5	5	4.6
R71	6	6	6	6	6	6
R72	6	6	6	6	6	6
R73	6	5	5	5	5	5.2
R74	6	6	6	6	6	6
R75	6	5	5	6	5	5.4
R76	6	6	5	5	6	5.6
R77	6	6	5	6	6	5.8
R78	6	6	5	5	5	5.4
R79	5	5	4	5	5	4.8

R80	6	6	6	6	6	6
R81	6	6	6	6	6	6
R82	6	6	6	6	6	6
R83	6	6	6	6	6	6
R84	5	5	5	6	5	5.2
R85	4	4	4	4	4	4
R86	6	6	6	6	6	6
R87	6	6	6	6	6	6
R88	5	5	5	5	5	5
R89	6	5	5	6	6	5.6
R90	5	5	3	3	5	4.2
R91	5	5	4	6	6	5.2
R92	6	6	6	5	6	5.8
R93	6	6	6	6	6	6
R94	6	6	6	6	6	6
R95	5	5	5	5	5	5
R96	2	2	2	3	1	2
R97	5	6	5	5	5	5.2
R98	6	6	6	6	5	5.8
R99	2	3	3	1	2	2.2
R100	5	5	5	5	5	5
R101	5	5	5	5	5	5
R102	6	6	6	6	6	6
Mean	**5.2255**	**5.1569**	**5.1569**	**5.2353**	**5.1569**	**5.1863**

Appendix G. Mean Summary of Mimetic Pressure

Respondents	MP1	MP2	MP3	MP4	MP5	Mean
R1	6	6	6	6	5	5.8
R2	4	5	6	6	6	5.4
R3	6	6	6	6	6	6
R4	6	6	6	6	6	6
R5	5	4	4	4	4	4.2
R6	5	5	6	5	5	5.2
R7	6	6	6	6	6	6
R8	6	6	6	5	4	5.4
R9	5	5	5	5	5	5
R10	4	4	4	5	3	4
R11	5	5	5	4	4	4.6
R12	6	6	6	6	6	6
R13	5	5	6	6	5	5.4
R14	6	6	6	6	6	6
R15	6	5	4	5	5	5
R16	4	4	4	4	4	4
R17	4	3	3	3	4	3.4
R18	4	2	2	2	3	2.6
R19	3	2	2	2	2	2.2
R20	5	5	5	5	5	5
R21	6	6	6	6	6	6
R22	6	5	6	6	6	5.8
R23	6	6	6	6	6	6
R24	6	6	6	6	6	6
R25	5	5	5	5	5	5
R26	6	6	6	6	6	6
R27	6	6	6	6	6	6
R28	6	6	6	6	6	6
R29	6	6	6	6	6	6
R30	6	6	6	6	6	6
R31	5	5	5	5	5	5
R32	5	4	5	5	5	4.8
R33	5	5	6	6	4	5.2
R34	5	5	4	5	4	4.6
R35	4	6	5	5	4	4.8
R36	4	4	5	5	5	4.6
R37	6	6	6	6	6	6
R38	6	6	6	6	6	6

R39	6	6	6	6	6	6
R40	4	4	4	4	4	4
R41	5	5	5	5	3	4.6
R42	3	5	5	4	4	4.2
R43	5	5	5	5	5	5
R44	5	6	6	6	6	5.8
R45	5	5	5	5	5	5
R46	5	5	5	6	5	5.2
R47	5	5	5	5	5	5
R48	5	5	5	5	5	5
R49	4	4	5	5	4	4.4
R50	1	2	2	3	2	2
R51	6	5	5	6	5	5.4
R52	5	5	5	5	5	5
R53	6	5	5	6	5	5.4
R54	4	6	5	5	5	5
R55	5	5	5	4	5	4.8
R56	3	4	4	4	5	4
R57	4	4	4	4	4	4
R58	6	6	6	6	6	6
R59	6	6	5	5	6	5.6
R60	6	6	6	5	5	5.6
R61	5	5	5	5	5	5
R62	5	6	5	5	5	5.2
R63	4	5	5	5	5	4.8
R64	6	6	6	6	6	6
R65	2	2	2	2	2	2
R66	3	3	2	3	2	2.6
R67	1	3	3	6	1	2.8
R68	6	6	6	6	6	6
R69	5	5	5	5	4	4.8
R70	5	5	5	5	4	4.8
R71	6	6	6	6	6	6
R72	6	6	6	6	6	6
R73	5	5	5	5	5	5
R74	6	6	6	6	6	6
R75	5	5	5	5	5	5
R76	4	5	6	5	5	5
R77	4	5	6	5	5	5
R78	5	5	5	5	5	5
R79	4	4	4	4	5	4.2

R80	5	5	5	6	6	5.4
R81	6	6	6	6	6	6
R82	6	6	6	6	6	6
R83	5	6	6	5	5	5.4
R84	5	5	5	5	5	5
R85	4	4	4	4	4	4
R86	6	6	6	6	6	6
R87	6	6	6	6	6	6
R88	5	5	5	5	5	5
R89	6	6	5	5	5	5.4
R90	4	4	5	5	5	4.6
R91	5	5	5	5	5	5
R92	5	5	5	6	4	5
R93	6	6	6	6	6	6
R94	6	6	6	6	6	6
R95	6	6	6	6	6	6
R96	2	1	1	1	2	1.4
R97	5	5	5	5	5	5
R98	5	6	6	5	5	5.4
R99	4	3	3	2	2	2.8
R100	5	5	5	5	5	5
R101	5	5	5	5	5	5
R102	5	6	6	6	5	5.6
Mean	4.9804	5.0490	5.0784	5.0980	4.9020	5.0216

Appendix H. Mean Summary of Normative Pressure

Respondents	NP1	NP2	NP3	NP4	NP5	Mean
R1	4	4	4	5	5	4.4
R2	6	5	6	5	6	5.6
R3	6	6	6	6	6	6
R4	6	6	6	6	6	6
R5	5	4	4	5	4	4.4
R6	5	5	5	5	5	5
R7	6	6	6	6	6	6
R8	5	5	6	5	5	5.2
R9	5	5	5	5	5	5
R10	4	4	4	4	3	3.8
R11	4	4	5	4	4	4.2
R12	6	6	6	6	6	6
R13	5	5	5	5	5	5
R14	6	6	6	6	6	6
R15	5	5	5	5	5	5
R16	4	4	4	4	4	4
R17	3	3	3	4	4	3.4
R18	3	3	3	3	3	3
R19	4	4	4	3	4	3.8
R20	5	5	5	5	5	5
R21	6	6	6	6	6	6
R22	6	6	6	3	6	5.4
R23	6	6	6	6	6	6
R24	6	6	6	6	6	6
R25	6	6	6	6	6	6
R26	6	6	6	6	6	6
R27	6	6	6	6	6	6
R28	5	6	6	6	6	5.8
R29	6	6	6	6	6	6
R30	6	6	6	6	6	6
R31	5	5	5	5	5	5
R32	5	5	5	5	5	5
R33	5	6	6	6	6	5.8
R34	4	5	4	4	4	4.2
R35	5	5	5	5	5	5
R36	5	5	5	5	5	5
R37	6	6	6	6	6	6
R38	6	6	6	6	6	6

R39	6	6	6	6	6	6
R40	4	4	4	4	4	4
R41	5	5	5	5	5	5
R42	4	4	5	4	5	4.4
R43	5	5	5	5	5	5
R44	6	6	6	6	6	6
R45	5	5	6	5	6	5.4
R46	5	5	5	5	5	5
R47	4	5	5	4	4	4.4
R48	4	5	5	4	4	4.4
R49	4	4	4	2	3	3.4
R50	1	2	1	1	1	1.2
R51	5	6	5	5	5	5.2
R52	5	6	5	5	6	5.4
R53	5	6	5	5	5	5.2
R54	5	5	4	5	5	4.8
R55	5	5	5	5	5	5
R56	4	4	4	4	4	4
R57	4	4	4	4	4	4
R58	5	5	6	6	5	5.4
R59	5	6	6	5	5	5.4
R60	6	5	5	6	5	5.4
R61	5	5	5	5	5	5
R62	5	6	6	6	5	5.6
R63	5	5	5	5	5	5
R64	6	6	6	6	6	6
R65	2	2	2	2	2	2
R66	2	2	3	2	2	2.2
R67	2	4	6	1	3	3.2
R68	6	6	6	6	5	5.8
R69	4	4	5	5	5	4.6
R70	4	4	5	5	5	4.6
R71	6	6	6	6	6	6
R72	6	6	6	6	6	6
R73	5	5	5	5	5	5
R74	6	6	6	6	6	6
R75	5	6	5	5	5	5.2
R76	5	5	5	5	5	5
R77	5	5	5	5	5	5
R78	5	5	5	5	5	5
R79	4	5	5	5	5	4.8

R80	6	6	6	6	5	5.8
R81	6	6	6	5	5	5.6
R82	6	6	6	5	5	5.6
R83	6	6	6	5	5	5.6
R84	5	5	5	5	5	5
R85	4	4	4	4	4	4
R86	6	6	6	5	5	5.6
R87	6	6	6	5	5	5.6
R88	5	5	5	5	5	5
R89	5	5	5	5	6	5.2
R90	5	4	5	5	5	4.8
R91	5	5	6	5	5	5.2
R92	5	5	6	5	5	5.2
R93	6	6	6	6	6	6
R94	6	4	6	6	6	5.6
R95	6	6	6	6	6	6
R96	3	1	1	2	1	1.6
R97	5	5	5	5	5	5
R98	6	6	6	5	6	5.8
R99	3	3	2	4	3	3
R100	5	5	5	5	5	5
R101	5	5	5	5	5	5
R102	6	6	6	6	6	6
Mean	4.9804	5.0490	5.1275	4.9314	4.9706	5.0118

Appendix I. Descriptive Statistics Mean Summary of Institutional Pressures (IV)

Variables	N	Minimum	Maximum	Mean	Std. Deviation
CP1	102	1.00	6.00	5.2255	1.18495
CP2	102	1.00	6.00	5.1569	1.12351
CP3	102	1.00	6.00	5.1569	1.08769
CP4	102	1.00	6.00	5.2353	1.06405
CP5	102	1.00	6.00	5.1569	1.10575
MP1	102	1.00	6.00	4.9804	1.09888
MP2	102	1.00	6.00	5.0490	1.09343
MP3	102	1.00	6.00	5.0784	1.11414
MP4	102	1.00	6.00	5.0980	1.06715
MP5	102	1.00	6.00	4.9020	1.13896
NP1	102	1.00	6.00	4.9804	1.05286
NP2	102	1.00	6.00	5.0490	1.05659
NP3	102	1.00	6.00	5.1275	1.07787
NP4	102	1.00	6.00	4.9314	1.11035
NP5	102	1.00	6.00	4.9706	1.06665
CP	102	1.40	6.00	5.1863	1.03072
MP	102	1.40	6.00	5.0216	1.02171
NP	102	1.20	6.00	5.0118	1.00447
Int_Pressure	102	1.53	6.00	5.0732	.98898
Valid N (listwise)	102				

Appendix J. Mean Summary of Environmental Performance

Respondents	EN1	EN2	EN3	EN4	EN5	Mean
R1	6	5	6	6	6	5.8
R2	4	4	4	4	4	4
R3	6	6	6	6	6	6
R4	6	6	6	6	6	6
R5	5	4	5	4	4	4.4
R6	6	6	6	6	6	6
R7	6	6	6	6	6	6
R8	6	6	5	5	6	5.6
R9	5	5	5	5	5	5
R10	5	5	5	5	5	5
R11	5	5	5	5	4	4.8
R12	6	6	6	6	6	6
R13	6	6	6	6	5	5.8
R14	6	6	6	6	6	6
R15	4	5	6	5	5	5
R16	4	3	5	4	5	4.2
R17	3	3	3	3	4	3.2
R18	3	3	3	5	5	3.8
R19	3	3	4	4	3	3.4
R20	5	5	5	5	5	5
R21	6	6	6	6	6	6
R22	6	6	6	6	6	6
R23	6	6	6	6	6	6
R24	6	6	6	6	6	6
R25	6	6	6	6	6	6
R26	6	6	6	6	6	6
R27	6	6	6	6	6	6
R28	6	6	6	6	6	6
R29	6	6	6	6	6	6
R30	6	6	6	6	6	6
R31	6	6	6	6	6	6
R32	5	5	5	5	5	5
R33	6	6	6	6	6	6
R34	4	5	5	6	4	4.8
R35	6	6	6	5	6	5.8
R36	5	5	5	5	5	5
R37	6	6	6	6	6	6
R38	6	6	6	6	6	6

R39	6	6	6	6	6	6
R40	4	4	4	4	4	4
R41	5	5	6	5	5	5.2
R42	5	4	5	4	5	4.6
R43	5	5	5	5	5	5
R44	5	5	6	5	5	5.2
R45	6	6	6	5	5	5.6
R46	5	5	5	6	5	5.2
R47	5	5	5	5	4	4.8
R48	5	5	5	5	5	5
R49	4	4	5	4	4	4.2
R50	1	1	2	2	2	1.6
R51	5	6	6	5	5	5.4
R52	5	5	6	6	4	5.2
R53	5	6	6	5	5	5.4
R54	6	5	5	5	4	5
R55	5	5	4	6	5	5
R56	4	4	5	4	4	4.2
R57	4	4	4	4	4	4
R58	5	5	6	6	6	5.6
R59	6	6	6	5	6	5.8
R60	6	6	6	6	6	6
R61	5	5	5	5	5	5
R62	5	5	4	5	5	4.8
R63	5	5	5	5	5	5
R64	6	6	6	6	6	6
R65	2	3	2	2	3	2.4
R66	2	3	2	2	3	2.4
R67	6	4	6	6	3	5
R68	6	6	6	6	6	6
R69	5	5	5	5	4	4.8
R70	5	5	5	5	4	4.8
R71	6	6	6	6	6	6
R72	6	6	6	6	6	6
R73	5	5	5	5	5	5
R74	6	6	6	6	6	6
R75	5	5	5	5	5	5
R76	6	6	6	4	6	5.6
R77	5	6	6	4	6	5.4
R78	5	5	5	5	5	5
R79	5	5	5	5	5	5

R80	5	5	5	6	6	5.4
R81	6	6	6	6	6	6
R82	6	6	6	6	6	6
R83	6	6	5	6	6	5.8
R84	5	5	6	5	4	5
R85	4	4	4	4	4	4
R86	6	6	6	6	6	6
R87	6	6	6	6	6	6
R88	5	5	5	5	5	5
R89	5	5	6	5	6	5.4
R90	4	4	4	4	4	4
R91	5	5	4	5	5	4.8
R92	5	5	5	5	5	5
R93	6	6	6	6	6	6
R94	6	6	6	6	6	6
R95	5	4	6	6	6	5.4
R96	1	2	1	2	1	1.4
R97	5	5	5	6	5	5.2
R98	5	5	5	5	6	5.2
R99	3	3	3	2	3	2.8
R100	4	5	5	4	5	4.6
R101	5	5	5	5	5	5
R102	6	6	6	6	6	6
Mean	5.1078	5.1176	5.2353	5.1471	5.1176	5.1451

Appendix K. Mean Summary of Social Performance

Respondents	SO1	SO2	SO3	SO4	SO5	Mean
R1	6	6	6	5	6	5.8
R2	6	6	6	6	5	5.8
R3	6	6	6	6	6	6
R4	6	6	6	6	6	6
R5	5	5	5	6	5	5.2
R6	6	5	5	5	6	5.4
R7	6	6	6	6	6	6
R8	4	4	6	6	6	5.2
R9	5	5	5	5	5	5
R10	5	5	4	5	5	4.8
R11	5	5	5	5	5	5
R12	6	6	6	6	6	6
R13	6	6	5	5	5	5.4
R14	6	6	6	6	6	6
R15	5	6	4	6	5	5.2
R16	3	5	4	5	6	4.6
R17	4	4	4	3	3	3.6
R18	5	5	3	3	3	3.8
R19	4	3	3	3	4	3.4
R20	5	5	5	5	5	5
R21	6	6	6	6	6	6
R22	6	6	6	6	6	6
R23	6	6	6	6	6	6
R24	6	6	6	6	6	6
R25	6	6	6	6	6	6
R26	6	6	6	6	6	6
R27	6	6	6	6	6	6
R28	6	6	6	6	6	6
R29	6	6	6	6	6	6
R30	6	6	6	6	6	6
R31	6	6	6	6	5	5.8
R32	6	5	5	5	5	5.2
R33	6	5	6	6	5	5.6
R34	5	5	5	5	5	5
R35	5	6	5	6	5	5.4
R36	5	5	5	5	5	5
R37	6	6	6	6	6	6
R38	6	6	6	6	6	6

R39	6	6	6	6	6	6
R40	4	4	4	4	4	4
R41	6	6	6	6	5	5.8
R42	4	6	5	4	5	4.8
R43	5	5	5	5	5	5
R44	5	5	5	6	5	5.2
R45	6	6	6	5	6	5.8
R46	5	5	5	5	5	5
R47	5	5	5	5	5	5
R48	5	5	5	5	5	5
R49	5	4	5	5	6	5
R50	1	2	2	1	1	1.4
R51	6	5	5	6	5	5.4
R52	6	5	5	5	5	5.2
R53	6	5	5	6	5	5.4
R54	4	4	5	5	6	4.8
R55	5	6	6	6	5	5.6
R56	4	4	4	4	4	4
R57	4	4	4	4	4	4
R58	6	6	6	6	6	6
R59	5	5	5	6	6	5.4
R60	5	5	6	6	6	5.6
R61	5	5	5	5	5	5
R62	5	5	6	6	6	5.6
R63	5	5	5	5	5	5
R64	6	6	6	6	6	6
R65	2	3	2	2	2	2.2
R66	2	2	1	1	1	1.4
R67	6	3	2	6	6	4.6
R68	5	5	6	6	6	5.6
R69	5	4	4	5	5	4.6
R70	5	4	4	5	5	4.6
R71	6	6	6	6	6	6
R72	6	6	6	6	6	6
R73	5	5	5	5	5	5
R74	6	6	6	6	6	6
R75	6	6	6	5	5	5.6
R76	5	5	5	5	5	5
R77	5	5	5	5	5	5
R78	5	5	5	5	5	5
R79	5	5	5	5	5	5

R80	6	5	6	6	6	5.8
R81	6	6	6	6	6	6
R82	6	6	6	6	6	6
R83	5	5	5	6	6	5.4
R84	6	5	6	5	5	5.4
R85	4	4	4	4	4	4
R86	6	6	6	6	6	6
R87	6	6	6	6	6	6
R88	5	5	5	5	5	5
R89	6	6	6	5	6	5.8
R90	4	4	4	4	4	4
R91	6	4	6	6	4	5.2
R92	5	5	5	5	5	5
R93	6	6	6	6	6	6
R94	6	6	6	6	6	6
R95	6	6	6	6	6	6
R96	1	2	1	2	1	1.4
R97	5	5	5	5	5	5
R98	6	6	6	5	6	5.8
R99	2	2	3	2	3	2.4
R100	4	5	5	5	4	4.6
R101	5	5	5	5	5	5
R102	6	6	6	6	6	6
Mean	5.1961	5.1373	5.1373	5.2157	5.1765	5.1725

Appendix L. Mean Summary of Economic Performance

Respondents	EC1	EC2	EC3	EC4	EC5	Mean
R1	6	6	6	6	6	6
R2	4	5	5	5	5	4.8
R3	6	6	6	6	6	6
R4	6	6	6	6	6	6
R5	5	4	5	5	6	5
R6	6	5	6	5	6	5.6
R7	6	6	6	6	6	6
R8	6	5	5	5	5	5.2
R9	5	5	5	5	5	5
R10	5	4	5	5	5	4.8
R11	5	5	5	5	5	5
R12	6	6	6	6	6	6
R13	6	6	6	6	6	6
R14	6	6	6	6	6	6
R15	5	4	5	5	5	4.8
R16	5	6	4	6	5	5.2
R17	3	3	3	3	3	3
R18	3	4	4	4	4	3.8
R19	4	3	3	3	3	3.2
R20	5	5	5	5	5	5
R21	6	6	6	6	6	6
R22	6	6	6	6	6	6
R23	6	6	6	6	6	6
R24	6	6	6	6	6	6
R25	6	6	6	6	6	6
R26	6	6	6	6	6	6
R27	6	6	6	6	6	6
R28	6	6	6	6	6	6
R29	6	6	6	6	6	6
R30	6	6	6	6	6	6
R31	6	5	6	6	5	5.6
R32	5	5	5	5	5	5
R33	6	6	6	6	6	6
R34	5	4	5	5	5	4.8
R35	5	5	5	6	5	5.2
R36	5	5	5	5	5	5
R37	6	6	6	6	6	6
R38	6	6	6	6	6	6

R39	6	6	6	6	6	6
R40	4	4	4	4	4	4
R41	5	5	5	5	5	5
R42	4	4	4	5	6	4.6
R43	5	5	5	5	5	5
R44	6	6	6	6	6	6
R45	5	5	5	5	5	5
R46	6	5	5	5	5	5.2
R47	4	5	5	4	4	4.4
R48	5	5	5	5	5	5
R49	5	5	4	5	5	4.8
R50	1	1	1	1	1	1
R51	5	4	4	5	5	4.6
R52	5	6	5	6	5	5.4
R53	5	4	4	5	5	4.6
R54	5	5	6	4	5	5
R55	5	5	5	6	6	5.4
R56	5	4	4	4	4	4.2
R57	4	4	4	4	4	4
R58	6	6	6	6	6	6
R59	6	6	6	5	6	5.8
R60	6	6	6	6	6	6
R61	5	5	5	5	5	5
R62	5	4	5	5	5	4.8
R63	5	5	5	5	5	5
R64	6	6	6	6	6	6
R65	2	2	2	2	2	2
R66	2	2	2	2	2	2
R67	1	2	3	6	6	3.6
R68	6	6	5	6	6	5.8
R69	5	4	6	6	6	5.4
R70	5	4	6	6	6	5.4
R71	6	6	6	6	6	6
R72	6	6	6	6	6	6
R73	5	5	5	5	5	5
R74	6	6	6	6	6	6
R75	5	5	5	5	5	5
R76	4	4	5	5	4	4.4
R77	4	4	5	5	4	4.4
R78	5	5	5	5	5	5
R79	5	5	5	5	5	5

R80	6	6	6	6	6	6
R81	6	6	6	6	6	6
R82	6	6	6	6	6	6
R83	6	6	6	6	6	6
R84	5	4	5	6	5	5
R85	4	4	4	4	4	4
R86	6	6	6	6	6	6
R87	6	6	6	6	6	6
R88	5	5	5	5	5	5
R89	6	5	5	6	6	5.6
R90	5	5	5	5	5	5
R91	5	5	5	6	5	5.2
R92	5	5	6	5	5	5.2
R93	6	6	6	6	6	6
R94	6	6	6	6	6	6
R95	6	6	6	6	6	6
R96	2	1	2	1	1	1.4
R97	5	5	5	5	5	5
R98	6	4	5	4	5	4.8
R99	3	3	4	2	3	3
R100	4	5	5	4	5	4.6
R101	5	5	5	5	5	5
R102	6	6	6	6	6	6
Mean	5.1275	5.0000	5.1471	5.1961	5.1961	5.1333

Appendix M. Descriptive Statistics Mean Summary of Sustainability Practices (DV) (Environment, Social, and Economic Performance)

Variables	N	Minimum	Maximum	Mean	Std. Deviation
EN1	102	1.00	6.00	5.1078	1.08916
EN2	102	1.00	6.00	5.1176	1.02729
EN3	102	1.00	6.00	5.2353	1.04528
EN4	102	2.00	6.00	5.1471	1.02828
EN5	102	1.00	6.00	5.1176	1.02729
SO1	102	1.00	6.00	5.1961	1.09036
SO2	102	2.00	6.00	5.1373	1.00532
SO3	102	1.00	6.00	5.1373	1.12610
SO4	102	1.00	6.00	5.2157	1.10469
SO5	102	1.00	6.00	5.1765	1.09374
EC1	102	1.00	6.00	5.1275	1.11401
EC2	102	1.00	6.00	5.0000	1.14321
EC3	102	1.00	6.00	5.1471	1.03787
EC4	102	1.00	6.00	5.1961	1.09941
EC5	102	1.00	6.00	5.1961	1.06277
EN	102	1.40	6.00	5.1451	.97337
SO	102	1.40	6.00	5.1725	1.00574
EC	102	1.00	6.00	5.1333	1.02767
Sustainable_Prac	102	1.33	6.00	5.1503	.97983
Valid N (listwise)	102				

Appendix N. Community Needs Assessment

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NEEDS ASSESSMENT

A needs assessment is a systematic process used to identify and evaluate the current conditions, problems, or challenges within an organization, community, or any other context. The goal of a needs assessment is to determine what specific needs exist so that appropriate strategies, interventions, or solutions can be developed to address those needs effectively. This will make up most of the context of your Introduction.

Organization/Industry
Needs assessment is a process to gain valuable insights into a company's actions or processes to determine efficiency or current situations, events or happenings affecting organizations under an industry. This assessment can be part of a company's planning process to determine gaps or needs and how to address areas for improvement.

Please identify Organization or Industry

ELECTRONICS MANUFACTURING FIRMS in CALABARZON

Community/Sector
Needs assessment is a process to gain valuable insights to understand the specific needs, challenges, and opportunities within a community or sector.

- A community is a group of individuals who live in proximity to each other and share common interests, values, and goals
- Sector is a specific part of society or the economy and made up of similar elements

Please identify Community or Sector
Employees of Electronics Manufacturing Firms in CALABARZON
(Sub-sector: Consumer Electronics | Semiconductor Components | Industrial Components | Automotive Electronics | Others)

Goal of Needs Assessment

The main outcomes of a community needs assessment are in 3 main categories: Policy Change, Systems Change, and Environmental Change. Identify which of these main categories do you wish to accomplish. Tick what is appropriate

Policy Change. This involves laws and regulations designed to guide or influence behavior. These can be both legislative or organizational. Policy changes can include raising the age limit to buy cigarettes.

Systems Change. This involves a change that affects all aspects of the community. This includes the social norms of an organization, institution, or system, and often goes hand in hand with policy change. These changes can include prohibiting smoking in public places.

Environmental Change. This involves physical, social, or economic factors that influence people's practices and behaviors. Physical includes structural changes, like building specific smoking-only structures. Social factors include changes in attitude and behavior, like a need for more no-smoking areas. Lastly, economic factors include financial disincentives or incentives to encourage a desired behavior like raising the price of cigarettes.

SDG Addressed

GOAL 1: No Poverty GOAL 2: Zero Hunger Goal 3: Good Health and Well-being GOAL 4: Quality Education GOAL 5: Gender Equality GOAL 6: Clean Water and Sanitation	GOAL 7: Affordable and Clean Energy GOAL 8: Decent Work and Economic Growth GOAL 9: Industry, Innovation and Infrastructure GOAL 10: Reduced Inequality GOAL 11: Sustainable Cities and Communities GOAL 12: Responsible Consumption and Production	GOAL 13: Climate Action GOAL 14: Life Below Water GOAL 15: Life on Land GOAL 16: Peace and Justice Strong Institutions GOAL 17: Partnerships to achieve the Goal

SITUATION/OBSERVATION

- Define the organization/industry or community or sector to assess, its profile or the general description of the general context in which the problem is to be viewed and discussed or situations in and the process by which problem arose and developed as well as reasons for choosing the topic
- Provide the trends and facts (statistics) of the phenomenon and offer possible explanations of the trends.
- Provide an overview of what your own research is about in terms of your general assumptions and in terms of where the data will be coming from

» The focus of this assessment is the Electronics Manufacturing Sector located within the CALABARZON region of the Philippines. Often referred to as the "Silicon Valley of the Philippines," this sector is the country's largest export contributor, accounting for nearly 60% of total export revenue. The industry is currently at a crossroads. For decades, the primary competitive advantage of CALABARZON-based firms was low-cost labor and strategic location within PEZA zones. However, as global climate change policies and the UN Sustainable Development Goals (SDGs) became mainstream, international buyers began demanding strict adherence to Triple Bottom Line (TBL) standards—Environmental, Social, and Economic performance.
The problem arose because many local firms viewed sustainability merely as a "compliance checklist" rather than a core business strategy. This study was chosen because there is a critical need to understand what actually drives these firms to go green: Is it genuinely their professional ethics, or are they simply reacting to the "stick" of government and buyer regulations?

» Based on current industry data and the specific findings of this research, the following trends characterize the phenomenon: a) High Adoption vs. Low Innovation, and b) The Dominance of External Pressure.
These trends exist because the Philippine electronics industry is highly export-oriented. Since these firms are part of a global supply chain, they are susceptible to "regulatory spillover" from stricter regions like the EU (e.g., GDPR and Carbon Border Adjustment Mechanisms).

» General Assumptions:
The research is grounded in Institutional Theory, which assumes that organizations do not always act out of economic rationality but rather to gain legitimacy.
Assumption 1: If a firm does not follow sustainability mandates, it will lose its "license to operate" (Coercive).
Assumption 2: As more managers receive MBA-level training and join professional groups, sustainability will become a "norm" rather than a "rule" (Normative).
Assumption 3: Firms will eventually mimic industry leaders to reduce the perceived risk of investing in new green technologies (Mimetic).

Data Sources:
The data for this study is primary and quantitative, sourced directly from the field:
Respondents: Electronics Manufacturing workers like Managers, Supervisors, and Engineers, Production and Maintenance staffs who are knowledgeable regarding operational sustainability.
Location: Electronics firms operating within the industrial parks of Cavite, Laguna, and Batangas.
Method: A structured survey instrument—validated and ethics-cleared by the DLSL Research Ethics Review Council (RERC)—measuring perceptions of institutional pressures and the extent of Triple Bottom Line practices.

PROBLEM

- From your observation of preliminary research, what do you think is the problem?
- What do you think causes the problem in the organization/industry or the community or sector?
- What will be necessary to solve the problem (solution)?
- What should be the primary objective of your study and what should be the goal of the identified solution

Support your answer to these questions with findings from reviewing theories and studies.

I. Problem Identification: "The Compliance Trap"

From my preliminary observation and research, the core problem is Sustainability Decoupling. While electronics firms in CALABARZON show a "Very High" level of adoption, this performance is largely symbolic and reactive rather than substantive and innovative.

The industry is stuck in a state of "Compliance-Driven Sustainability." Firms are implementing green practices primarily to satisfy external mandates, which leads to "compliance fatigue"—a state where the organization does enough to avoid penalties but fails to integrate sustainability into its core corporate DNA or competitive strategy.

II. Root Causes: Institutional Imbalance

Based on the research findings, the problem is caused by an imbalance in the three pillars of Institutional Theory (DiMaggio & Powell, 1983):

1. Over-reliance on Coercive Pressure: The primary driver is the "stick" of PEZA/DENR regulations and global buyer contracts. When sustainability is viewed as a forced requirement, it is treated as a cost center rather than a value-added opportunity.
2. Under-developed Normative and Mimetic Drivers: Because the "push" from laws is so strong, the "pull" from professional ethics and competitive benchmarking is overshadowed. This prevents the industry from forming a unified, self-regulating culture of excellence.

III. The Solution: Strategic Institutionalization

To solve this, it is necessary to transition the sector from External Enforcement to Internal Ownership. The solution requires:

- Standardization of Professional Ethics: Strengthening the role of industry associations (like SEIPI) to set standards that exceed government requirements.
- Knowledge-Sharing Networks: Creating platforms for firms to mimic "Best-in-Class" green technologies safely, reducing the perceived risk of innovation.
- Triple Bottom Line (TBL) Integration: Moving beyond environmental compliance to include social and economic sustainability as key performance indicators (KPIs)

IV. Primary Objective and Goal

Primary Objective of the Study: The objective is to measure and analyze the predictive power of institutional pressures on sustainability practices. By identifying that these pressures explain 92.7% of the variance, the study proves that the environment—not internal corporate strategy—is currently the master of the industry's green direction.

Goal of the Identified Solution: The goal is to rebalance the institutional drivers. By shifting weight toward Normative and Mimetic pressures, the solution aims to foster a proactive sustainability culture. Success is achieved when firms innovate green solutions not because they *must* to avoid a fine, but because they *choose* to as a matter of professional pride and competitive advantage.

ARGUMENT/HYPOTHESES/FRAMEWORK

An academic argument is your **stance**, your claim, or your take on your topic. ... An academic argument is also based in the research, what we often call "evidence-based." This means you must support your argument with findings from sources you read. This also refers to assumptions that your study will try to test. Include your research framework.

The Academic Argument: The Institutionalization of Sustainability

My academic argument is that Sustainability in the CALABARZON electronics sector is an externally driven phenomenon rather than an internal strategic choice. While the "Very High" adoption of Triple Bottom Line (TBL) practices suggests a green revolution, I argue that this is a case of Coercive Isomorphism. Firms are conforming to environmental and social standards primarily to maintain legitimacy with regulators (PEZA/DENR) and to secure their position in the global supply chain. Without these external "sticks," the internal "will" to innovate sustainably would be significantly lower.

Evidence-Based Support

This stance is supported by the following research findings and theoretical underpinnings:

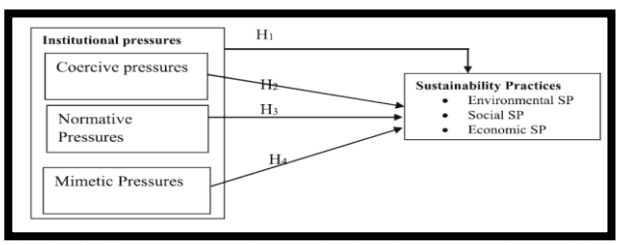
- The Predictive Power of Pressure: My study found that institutional pressures are a near-exhaustive predictor of sustainability behavior, explaining 92.7% of the variance (R^2= 0.927). This proves that the environment—not unique corporate vision—is the master of the industry's direction.
- The Beta Hierarchy: The strongest evidence for my argument is the dominance of Coercive Pressure ($\beta = 0.414$, $p < .001$). This aligns with the findings of Bansal (2005), who argued that institutional pressures often force firms into compliance before they see the competitive advantage of sustainability.
- The Gap in Autonomy: While Normative ($\beta = 0.305$$) and Mimetic ($\beta = 0.272$$) pressures are significant, their lower influence suggests that professional ethics and competitive benchmarking are secondary to legal survival.

Research Assumptions

My study tests the following core assumptions:

1. Legitimacy over Efficiency: Firms prioritize "looking green" to satisfy stakeholders (Legitimacy) over finding the most cost-effective way to be green (Efficiency).
2. Regulatory Spillover: Standards set by global buyers act as a "shadow regulation" that is more influential than local internal policies.
3. Isomorphic Convergence: Over time, electronics firms in CALABARZON will become increasingly similar in their sustainability reporting due to shared institutional pressures.

Research Framework



The study is guided by an Institutional Theory Framework. It posits that the "Independent Variables" (External Pressures) directly influence the "Dependent Variable" (Sustainability Practices).

1. Independent Variables (The Pressures):
   - Coercive: Regulatory requirements (PEZA/DENR) and contractual mandates from global buyers.
   - Normative: Standards set by professional bodies (SEIPI) and the academic/professional background of managers.
   - Mimetic: The tendency to imitate the "best-in-class" practices of industry leaders to reduce uncertainty.
2. Dependent Variable (The Outcome):
   - Sustainability Practices (Triple Bottom Line):
     - *Environmental:* Waste management, energy efficiency, and carbon reduction.
     - *Social:* Labor rights, community engagement, and employee safety.
     - *Economic:* Long-term viability and ethical supply chain management.
3. The Relationship: The framework illustrates a Linear Relationship where the intensity of these three pressures dictates the depth and breadth of sustainability adoption. By testing this framework, the study confirms that in the CALABARZON electronics cluster, the "Institutional Environment" is the primary architect of corporate responsibility.

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