INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY: APPLIED BUSINESS AND EDUCATION RESEARCH
2024, Vol. 5, No. 1, 29 – 37
http://dx.doi.org/10.11594/ijmaber.05.01.04

Research Article

Sustainable Practices Amid the Covid-19 Pandemic of A Construction Company in Cebu, Philippines

Rico Serafin B. Neri*, Mark Anthony N. Polinar

Cebu Institute of Technology- University, Cebu City, 6000, Philippines

Article history:
Submission December 2023
Revised January 2024
Accepted January 2024

**Corresponding author:*
E-mail:
ricoserafin.neri@cit.edu

ABSTRACT

The construction industry in Cebu City is growing, but sustainability is essential, especially during times of crisis like the COVID-19 pandemic. Some businesses have not enhanced their sustainable practices to survive the new normal. The main objective of this study is to explore the triple bottom line of a construction company in Cebu City, Philippines. The study employed a descriptive-correlational research design, and the sample comprised 58 rank-and-file employees selected through a simple random sampling method. The collected data were analyzed, tabulated, and interpreted using various statistical techniques, namely weighted mean, and Pearson correlation coefficient. The study found that the organization placed a high level of importance on social and economic sustainability, while environmental sustainability was considered moderately significant. The relationship between these three variables was examined, and it was determined that they were positively correlated. The study's conclusion emphasized that balancing economic growth, social inclusion, and environmental preservation is crucial for long-term sustainability. Therefore, prioritizing these aspects can improve a company's performance and contribute to its long-term sustainability.

Keywords: *Cebu city, Construction company, Covid-19 Pandemic, Descriptive-correlational, Quantitative study, Sustainable practices*

Introduction

Sustainability developments have been constantly evolving to cater to the current issues that we have been facing. It is undeniable that the COVID-19 outbreak was one of them. Verma and Prakash (2020) stated that the outbreak severely impacted global and national economies since it is highly contagious.

Sustainability harmonizes socio-economic development and environmental protection, including sustainable natural resource exploitation (D'Adamo et al., 2020). To achieve a cleaner world and reduce the impact of climate change, a sustainable revolution is necessary, which requires various approaches across different sectors (Pacheco, 2020). Regarding sus-

How to cite:
Neri, R. S. B. & Polinar, M. A. N. (2024). Sustainable Practices Amid the Covid-19 Pandemic of A Construction Company in Cebu, Philippines. *International Journal of Multidisciplinary: Applied Business and Education Research*. *5*(1), 29 – 37. doi: 10.11594/ijmaber.05.01.04

tainability, many factors and sectors are impacted due to the broad scope of the issue. This can be a complex issue, as perceived by many firms (Quinn et al., 2015). The affected sectors include environmental, political, economic, and social (Antonopoulos et al., 2013; Enache et al., 2013). Sustainability refers to the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs. It involves balancing economic growth, social well-being, and environmental protection. Sustainability recognizes that resources are finite and that we must use them responsibly and efficiently to ensure their availability for future generations.

Different Industries have their ways of devising their Sustainability Development Plans. One of which is the Construction Industry. It was stated in a study by Ngowi et al. (2005) that construction in the ancient world relied on environmental resources such as land, climate, and collective local skills to create shelter appropriate to the environmental conditions. Construction continuously prospered from there; however, no significant innovations occurred during the Industrial Revolution. It was in the 19th century that new materials were incorporated into construction, particularly cast iron, wrought iron, and later steel, which enabled new structures such as railways, bridges, and building frames. Advancements in the construction industry are vital in achieving concrete development goals and agendas, particularly the Sustainable Development Goals made by the United Nations (Hájek, 2018).

Major construction firms worldwide have suffered sharp drops in market valuations during the COVID-19 outbreak, reflecting a more challenging environment and the significant ongoing disruption. As of the current issue, the property sector continues to pick up from the Pandemic (Crismundo, 2022). The construction is in full swing across all project sites in 16 key Visayas and Mindanao cities. Catch-up measures compensate for quarantine delays.

The construction industry is expected to register an annual growth of 21.8% this year before registering an annual average growth rate of 7.5% from 2023 to 2026; however, its output is expected to remain below pre-pandemic levels until 2023 (Business Wire, 2022).

The researchers want to examine if buildings in the City of Cebu were either built with sustainability in mind or have energy-saving technologies to reduce their impact on the environment amid the pandemic situation in the area. Selected construction companies in the region are the main concerns if they change their workforce, workload schedules and practices, or innovation where there are limited energy sources and waste efficiency in several ways.

Research Questions

The study intended to scrutinize the sustainable practices of a construction company in Cebu City amid the COVID-19 pandemic. The assessment of the identified factors was prioritized, and recommendations were formed to enhance the management's ability to deal with sustainable practices and improve the company's overall operation.

The research empirically sought to address the following questions:

1. What is the level of practice of the respondents in terms of the following variables under environmental sustainability:
   1.1. Environmental Management System;
   1.2. Greener Service Process and Energy Saving
   1.3. Usage of Products
   1.4. Recycling and Waste Management; and
   1.5. Pollution Control?
2. What is the level of practice of the respondents in terms of the following variables under social sustainability:
   2.1. Employees;
   2.2. Consumers;
   2.3. Community;
   2.4. Suppliers; and
   2.5. Government?
3. What is the level of practice of the respondents in terms of the following variables under economic sustainability:
   3.1. Revenue Growth;
   3.2. Market Share Growth?
4. Is there a significant relationship between the practice of environmental, social, and economic sustainability?

Methodology

Research Design

A descriptive-correlational design was used in the study to determine the degree of practice of the components of sustainability, including environmental, social, and economic. Additionally, this design will allow the study to test the relationships of the mentioned variables. Moreover, a questionnaire was the primary tool used by the researchers to gather data from the respondents.

Research Environment

The locale of the study was a construction company in Cebu, Philippines. This triple-A company was responsible for designing and constructing multiple large-scale projects in various industries, such as roads, bridges, hotels, residential and commercial buildings, offices, and even a golf course. These projects have become renowned examples of exceptional architectural and interior design in Cebu, Philippines.

Research Respondents

The research respondents were the rank-and-file employees of the construction company who were asked to respond if the firm was practicing the three areas of sustainability. Using an online sample size calculator, the study drew 51 respondents from 58 rank-and-file employees in the firm (Raosoft). A convenience sampling technique was employed in choosing participants in the study.

The formula utilized by the researchers has a 95 percent confidence level and a 5 percent margin of error.

Research Instrument

In the study, an 84-item questionnaire was utilized, which was modified to focus on the three dimensions of sustainability: environmental, social, and economic. This tool was adapted from Elkhwesky et al.'s (2021) research entitled "Sustainable Practices in Hospitality Pre and Amid Covid-19 Pandemic: Looking Back for Moving Forward post-Covid 19". The questionnaire was tailored to align with the study's objectives of evaluating the extent to which sustainability parameters were practiced.

Data Collection

The researchers revised the questionnaire and received permission from the dean of the College of Management, Business, and Accountancy (CMBA) to gather data. They distributed printed questionnaires to respondents from a construction company using convenience sampling. Data collection lasted for seven days. Afterward, the researchers consolidated and analyzed the raw data by tabulating the responses.

Data Analysis

The researchers utilized weighted mean to determine the degree of practice of environmental, social, and economic sustainability of the construction company. Also, the study used the Pearson correlation coefficient to find the relationships of the three considered variables.

Ethical Protocols

Ethics was a top priority in collecting data for this study and the research process. The researchers were committed to upholding social responsibility, transparency, and data privacy throughout the process. To maintain objectivity, the researchers were careful not to let their interests, emotions, or affiliations influence their work, including when modifying the questionnaires. By emphasizing the key benefits and providing a deeper understanding of the elements considered, the study hopes that the findings will have a meaningful impact on the construction company.

Once all required consent was obtained, the researchers revealed their identities and explained the significance and justification of the study to everyone. They also highlighted the employees' crucial role and the study's potential benefits.

Table 1. Study's Scoring Procedure in the Degree of Practice

Scale	Scale Range	Response Category
4	3.26 - 4.0	Highly Practiced
3	2.51 - 3.25	Moderately Practiced
2	1.76 - 2.50	Slightly Practiced
1	1.00 - 1.75	Not Practiced at all

Result and Discussion

This part houses the study's findings about the degree of practice of environmental, social, and economic sustainability. Also, the interplay of the variables was included in this section.

Table 2. Summary of the Sub-Variables under Environmental Sustainability with their Average Weighted Mean and Response Category

Environmental Sustainability	Average Weighted Mean	Response Category
Environmental Management System	3.09	Moderately Practiced
Green Service Process and Energy Saving	2.85	Moderately Practiced
Usage of Products	2.88	Moderately Practiced
Recycling and Waste Management	2.91	Moderately Practiced
Pollution Control	3.11	Moderately Practiced
Grand Mean	**2.97**	**Moderately Practiced**

Table 2 presents the result of the sub-variables under environmental sustainability, wherein the grand mean is 2.97 with a response category of moderately practiced.

It indicates that rank-and-file employees practice green activities in their respective offices at a moderate level. Among all sub-variables, pollution control is perceived to be practiced by the respondents at a higher rate, while green service process and energy saving obtain the lowest mean in the table.

The environmental pillar covers a company's issues, including biodiversity, climate change, water, and air quality (Cerciello et al., 2022). Therefore, it measures a company's dedication to energy efficiency, emission reduction, and responsible use of natural resources. The article by Chungyalpa (2021) highlights the importance of reducing waste, using energy wisely, protecting the biosphere, and sustainably using natural resources as guiding principles for sustainable business practices.

Numerous scholars confirm the study's findings that a firm's environmental aspect should be considered. Using renewable energy and implementing eco-friendly policies promotes environmental sustainability, as mentioned in one study (Khan et al., 2020). According to Yadav et al. (2017), firms with better environmental performance are more competitive, recover faster from low financial performance, and sustain their competitive advantages. Furthermore, as Bigerna and Polinori (2012) concluded, the citizens of Perugia, Italy, are willing to pay a premium for environmentally friendly products due to their awareness of the negative externalities of pollution caused by traffic.

In Table 3, the respondents perceived that the firm is practicing at a higher level in terms of the social aspect, including the involvement of employees, consumers, community, suppliers, and government. It implies that the respondents practice activities that benefit the mentioned stakeholders.

Table 3. Summary of the Sub-Variables under Social Sustainability with their Average Weighted Mean and Response Category

Social Sustainability	Average Weighted Mean	Response Category
Employees	3.12	Moderately Practiced
Consumers	3.49	Highly Practiced
Community	3.19	Moderately Practiced
Suppliers	3.38	Highly Practiced
Government	3.63	Highly Practiced
Grand Mean	**3.36**	**Highly Practiced**

The attainment of social sustainability is a vital component of realizing comprehensive sustainability. It encompasses many dimensions: equity, quality of life, maturity, democracy, and social cohesion (Martin, 2019). It is imperative to recognize that social sustainability is not an isolated aspect of sustainability but rather an integral part of it (The World Bank, 2020). Hence, social, environmental, and economic sustainability is crucial for a sustainable future.

Studies have shown that organizations that focus on improving their social impact through effective strategies experience positive outcomes. For instance, one study found that sustainability initiatives led to smoother implementation, resulting in increased effectiveness and longevity, benefiting individuals and communities (Didham & Ofei-Manu, 2015). Implementing supervision, promoting a collective narrative, using generative humor, and showing professional respect can lead to worker development and reduced job burnout, creating a socially sustainable firm (Cadei et al., 2021). Furthermore, strong supplier relationships for social sustainability can boost firm performance (Mani et al., 2018; Hollós et al., 2012).

Table 4. Summary of the Sub-Variables under Economic Sustainability with their Average Weighted Mean and Response Category

Economic Sustainability	Average Weighted Mean	Response Category
Revenue Growth	3.26	Highly Practiced
Market Share Growth	3.40	Highly Practiced
Grand Mean	**3.33**	**Highly Practiced**

The study's results regarding economic sustainability variables and their weighted mean and category responses are shown in Table 4. Based on the table, it can be inferred that the respondents believed the firm's revenue and market share growth was positively impacted by its robust economic stability practices.

Sustainability economics pertains to achieving sustainable economic performance and growth (Bartelmus, 2010). The economic dimension, particularly growth, is critical for sustainable development (Spangberg, 2004).

One study found that promoting innovation and entrepreneurship can lead to economic growth, competitive advantage, and sustainable development (Talamaciu, 2012). Aside from human rights and occupational safety, prioritizing sales and net profit is considered crucial for supply chain sustainability, both economically and socially (Mokhtar et al., 2016). Therefore, the mentioned studies support the study's finding that economic factors substantially help the firm to be a sustainable entity.

Table 5. Summary of the Results of Pearson Correlation Coefficient Analysis

Pearson Correlation Coefficient r					
X	**Y**	**Correlation**	**P-value**	**Decision**	**Interpretation**
Environmental Sustainability Practices	Social Sustainability Practices	0.635	0.000	Reject Ho	Significant
Environmental Sustainability Practices	Economic Sustainability Practices	0.639	0.000	Reject Ho	Significant
Social Sustainability Practices	Economic Sustainability Practices	0.872	0.000	Reject Ho	Significant

Table 5 reveals the summary of the results of the Pearson correlation coefficient of the different variables of the study. The correlation coefficient from the Pearson's R Test between the Environmental Sustainability Practices and Social Sustainability Practices of a Construction Company in Cebu, Philippines, during the COVID-19 Pandemic is 0.635. At the same time, the Environmental Sustainability Practices and Economic Sustainability Practices correlate 0.639. Both results give a positive and strong correlation with a p-value of 0.000, less than $a = 0.05$. With this result, the researchers reject the null hypothesis and conclude that a significant relationship exists between the Environmental Sustainability Practices and Social Sustainability Practices of a Construction Company in Cebu, Philippines, amidst the COVID-19 Pandemic. Moreover, Environmental Sustainability Practices and Economic Sustainable Practices expose a significant relationship. These results imply that as the company increases its efforts in environmental sustainability, it is also likely to increase its focus on social sustainability, and vice versa. This also indicates that the company's actions to enhance environmental sustainability are linked to practices that support economic sustainability.

Regarding Social and Economic Sustainability Practices, the correlation coefficient is 0.873 with a p-value of 0.000, which is less than $a = 0.05$. This indicates a very strong correlation. Since the p-value is lesser than $a = 0.05$,, the researchers reject the null hypothesis and conclude that there is a significant relationship between the two variables. The strong and positive correlation (0.873) between Social and Economic Sustainability Practices in the construction company's context signifies that when the company prioritizes efforts to benefit society, it is closely associated with positive economic outcomes and vice versa. This link suggests that focusing on initiatives that improve social well-being also tends to lead to economic advantages, and reciprocally, strategies aimed at economic sustainability often align with positive social impacts. This correlation emphasizes the potential for a win-win situation where actions that benefit one area also benefit the other, highlighting the value of integrating social and economic goals within the company's sustainability approach.

Several studies have confirmed a correlation between environmental and social sustainability. In the case of higher education institutions in Pakistan, it has been found that social and environmental responsibilities play an essential role in ensuring business sustainability (Advani & Khan, 2021). As per the authors, it is recommended that firms devise and implement policies and strategies to address any violations related to social and environmental issues. This can help entrepreneurs strengthen the organizational culture of their firms. Corporate social responsibility (CSR) is a concept that integrates both social and environmental issues. Due to their significant correlation, Sharma and Khanna (2014) recommended embedding CSR and sustainability in organizational governance.

Environmental and economic sustainability are correlated, and various studies have corroborated this finding. One study shows that environmental proactivity positively correlates with economic and environmental performance, significantly reducing environmental impact and improving eco-efficiency (Barba-Sánchez & Atienza-Sahuquillo, 2016). In addition, a study of Korean contractors indicated

that a balanced consideration of environmental, social, and economic issues is crucial for achieving sustainability in the construction industry (Whang & Kim, 2015).

Two studies have examined the relationship between social and economic sustainability, with differing results. According to Alcivar et al. (2020), one study found a positive correlation between the economic and social dimensions and legal, ethical, and philanthropic dimensions. However, another study by Buck et al. (2021) concluded that sustainability's social and economic dimensions are negatively linked.

Conclusion

Considering all this, the COVID-19 pandemic greatly affected Construction companies in Cebu City. It shows that under environmental sustainability aspects, certain companies have practiced pollution control, mainly in implementing waste disposal and emission minimization. Also, the environmental management system focuses on evaluating the environmental impact of the establishment, monitoring water consumption, reducing pollution, and eliminating dumping. In Greener Service Process and Energy Saving, the company had educated the staff on energy efficiency and conservation.

On the Social Sustainability issue, they focused on obeying government regulations by operating legally and ethically and complying with labor legislation and employee contracts.

Moreover, in Economic Sustainability, the company promotes market share growth, strong brand identification, and choosing suppliers to promote local development. Lastly, the company is still in a position regarding competitive aspects regarding revenue growth.

Based on the study's findings, it is concluded that harmonizing economic growth, social inclusion, and environmental protection is essential. The triple bottom line positively correlates, indicating that prioritizing these aspects can enhance a firm's performance and contribute to its sustainability.

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