A Path Analysis of the Antecedents, Business Sustainability Practices and Outcomes of Private Schools in the Philippines

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Abstract

According to the Organization for Economic Cooperation and Development, early childhood education results in long-term social and economic benefits; thus, governments must ensure that elementary and secondary schools can survive disruptions in the business environment as the education sector should not be compromised especially in a developing country. In a world characterized by drastic and disastrous changes, a resilient and sustainable education sector must always be ensured. Adopting sustainability initiatives appears to be the key to survival in response to the negative effects of various external factors affecting the world. The purpose of this study is to examine the causes and consequences of business sustainability practices in private elementary and secondary schools in the Philippines. The findings revealed that regulatory policies, science and environment, and customer demand are vital predictors for private schools’ sustainability practices, with significant impact on their outcomes. Although the relationships between antecedents, sustainability practices, and outcomes were positive, they were moderate and weak respectively. The study further showed that the private schools’ sustainability practices have a significant mediating effect between the antecedents and outcomes of the private schools’ sustainability.

Keywords: antecedents, outcomes, private schools, sustainability

1. Introduction

For the past few decades, the issue of business sustainability has become a common agenda across different industry board rooms around the world. Triggered by such situations as overpopulation, overconsumption, deforestation, pollution, and contamination of resources, different sectors of the society, found it opportune and necessary to plan, devise and implement sustainable practices. For example, a United Nation’s study which forecast a severe depletion of fresh water that would affect 9 billion people by 2050, especially those from developing countries (UN FAO, 2015), caused boardrooms of fast-moving consumer goods (FMCG) companies to practice better water resource conservation and utilization practices all over the world. With the rapid depletion of the natural resources, worsening climate change, rampant inequality and social injustice, many companies have recognized the importance of supporting UN’s Sustainable Development Goals (SDGs) and embracing business sustainability practices. Haanaes (2022) explained sustainability as a business approach, which produces a long-term value for the company by focusing its operations on the environment, social and economic aspects of the business. According to them, embracing sustainability promotes company longevity. The research of McKinsey Global Survey on the value of ESG (Environmental, Social and Governance) programs shows that 83% of the top executives and investment professionals expect that companies’ ESG programs will contribute more shareholder value in five years than the present time (Delevingne, Grundler, Kane, & Koller, 2022). While a study conducted by Accenture revealed that firms with high levels of innovation and sustainability surpass their competitors with 3.1% higher operating profits (Shook & Lacy, 2020). Without a doubt, the continuing advancement of sustainable development, and the continued search for solutions to the problem of scarcity, inequality, and climate change has contributed to the increasing importance of business sustainability, particularly for the survival of smaller-sized businesses and institutions.

Sustainability is a three-pronged concept that calls on firms not just to focus on profits alone but also take strides in improving their planet and people-oriented goals and objectives. Various literature has already established that to achieve business sustainability, companies must also provide impetus on their effects to the environment and
the people along with profits. They emphasized that the focus of their strategic efforts should equally be on the three Ps - People, Planet, Profits. Sharma (2020) examined the framework that can be used to evaluate sustainability. Based on this framework, business sustainability can be evaluated in three areas such as the antecedents, sustainability strategies, and outcomes.

According to the World Bank, natural disasters have constantly ravaged the Philippines (The World Bank, 2018). These disasters wrought havoc to the country for generations and is one of the major causes for its staggered growth in the past few decades. As global natural phenomena like global warming, climate change and sea level rise, it is anticipated that the social, natural and economic toll will also be exponential for poorly equipped countries like the Philippines. The effect of the COVID19 pandemic is a case in point of how unpreparedness to deal with disasters can paralyze an entire nation. From being an entirely health-related chaos, economies went on a tail-spin as small and medium enterprises (SMEs) found themselves bankrupt as markets collapsed.

The chaos also crippled the educational sector in the Philippines. As most private educational institutions are categorized as small and medium enterprises (SMEs), there were insufficient government bailout programs that could have saved these academic institutions, and the institutions themselves were both financially and strategically unprepared to handle such protracted catastrophes. Shinozaki and Rao (2021) of the Asian Development Bank Institute found on their survey that about 73% of micro, small and medium enterprises have been forced to close their businesses during the COVID19 lockdown where the education sector has been more seriously affected (Shinozaki & Rao, 2021). In 2021, the Department of Education (DepEd) reported more than 900 cases of private school closures as around nine hundred thousand basic education students failed to enroll in the same year (Magkilat, 2021). In addition, the Coordinating Council of Private Educational Associations of the Philippines (Cocopea) reported that the 50% decline in enrollment for school year 2021 to 2022 as well as the failure of smaller schools to meet the requirements of holding classes online led to the closures of these private schools (Magsambol, 2021).

The Organization for Economic Cooperation and Development (OECD) emphasized the significance of having a high-quality early childhood education in an economy. According to them, education and care from an early age translates into long-term social and economic benefits including preparation for learning for higher education, improving the social status and ultimately reducing the economy’s poverty incidence (OECD, 2022). Thus, it is critical that governments especially those of the developing economies ensure that schools will thrive and survive regardless of the ongoing and prevailing disruptions in the environment.

In the Philippines, sustainable business practices are still on its infancy stage especially when it comes to its application to private elementary and secondary schools. While there are limited studies on sustainability practices and outcomes of educational institutions, there is even few number of research literatures on this topic in the Philippine-setting. This research intends to focus on the sustainability practices of the private schools in the Philippines. This study supposes that if only these institutions had been more adept in applying sustainable business practices and had for themselves an effective business sustainability strategy, they could have been more resilient to the negative impacts of external factors and the overall mortality rate of these institutions could have been curbed. Thus, in order to achieve sustainability, there is a need to develop a concrete and reliable framework that can be used by these schools to gauge its performance in the business sustainability frontier. This study aims to evaluate the antecedents of business sustainability and their impact to private schools’ sustainability practices. It further aims to evaluate the impact of the private schools’ sustainability practices to sustainability outcomes in three aspects i.e., economic, social and environmental.

2. Review of Literature

2.1 Concept of Sustainability

The sustainability concept first gained wide attention when the United Nations’ Brundtland Commission put emphasis on the importance of the preservation of the environment in sustainable development (Bergquist, 2017). This happened in the midst of finding a tangible solution for the escalating environmental problems like pollution, natural resource depletion, and climate change which are considered the aftermath of economic development. In 1987, the UN’s Brundtland Commission defined sustainability development as “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations, 2022). On 1st of January 2016, the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development, was officially enforced (United Nations, 2022). Many authors have given their definition of sustainability but a universal definition that could be useful across different sectors has yet to be established (Bathe, Heaton, Arbogast, & Broadbent, 2013). Emas (2015) interpreted the UN definition as something that focuses on the importance of “inter-generational equity”. According to the study, this was what
sets sustainability policies apart from the traditional environmental policies. Bansal and DesJardine (2014) contextualized sustainability in the business facet based on Brundtland’s definition. In 2014, Bansal and DesJardine defined business sustainability as the company’s ability to cope-up with their current financial needs but not at the expense of others’ ability to meet their future needs. While Haanaes (2022) defined sustainability as an approach in business where value is created in the long-run through being proactive in their actions in the ecological, social, and economic environments. Experts tried to give meaning to sustainability based on different contexts. On 2015, Ramsey (2015) pointed out that there is a problem in the approach of trying to define it since there are many circumstances in which the sustainability concept can be used.

The study of Sharma (2020) claimed that sustainability in business can be examined more deeply through looking into three interconnected areas i.e., antecedents, strategies, and outcomes. The antecedents were the stimulus for the strategies of the company; strategies were the actions performed by companies given the antecedents, and the outcomes were the direct results of strategies which will allow feedback for the learning process (Sharma, 2020). Sharma drew this relationship from the IPO (Input-Process-Output) model. Based on this theory, it can be assumed that the sustainability practices of the private schools were driven by some external factors like policies, regulations, and legal framework, science and environment and customer demand, which in turn have an effect to the outcomes of the business. Various studies have analyzed the relationships between antecedents, strategies, and outcomes. The study of Yuen et al. (2017) about sustainability of shipping companies revealed that a company’s stakeholder pressure, attitude, and behavioral control directly influenced the adoption of sustainable shipping practices, and indirectly influenced business performance. While Hami, Muhamad and Ebrahim (2015) found that sustainable manufacturing practice has a positive effect on economic sustainability. Lopez-Perez et al. (2018) analyzed the relationship between sustainability practices and business outcomes including both financial and non-financial (i.e., image and reputation) aspects of Small and Medium Enterprises (SMEs). Results suggested that sustainability impacts the corporate reputation, brand image, and financial value of the company. Alshehhi et al. (2018) found in their analysis that 78% of literature published report a positive relationship between corporate sustainability and financial performance.

2.2 Antecedents of Business Sustainability Practices

The business sustainability antecedents suggested by various researches revolve around almost similar variables. For example, Chabowski et al. (2011) suggested that the antecedents of sustainability are the environment, social networks and economics. While Sharma (2020) discovered five antecedents of sustainability practices namely, science and the environment, policy, regulatory and legal frameworks, social networks, economic returns, and customer demand. Peattie and Ratnakaya (1992) in their study on green movement suggested that green marketing was driven by scientific evidences, public opinion, and legislation, among others. Adebambo et al. (2014) found in their study the antecedents of sustainable environmental manufacturing practices as stakeholder pressure, top management commitment, and public concerns. Based on these studies, there were three common elements that could explain more clearly the variation in the company’s sustainability strategies and practices – that is, government regulations, the science and environment, and the public demand.

2.2.1 Government Regulations

It cannot be denied that governments played a major role in shaping up the sustainability strategies of various organizations. It is through government legislations that companies’ actions are influenced, if not forced, to be environmentally and socially mindful. However, such influence goes two-ways since even private businesses could also in turn influence the formulation of public policies. Various policies of the government were already enacted both in the international and domestic scene. Some of the common legal frameworks include that of energy regulations, waste disposal, corporate social responsibility, and fair trade. All these could impact the business and such would directly influence their practices. According to the study of Rakhmawati et al. (2020) on sustainable business practices in the medium-sized business belonging to food and beverage sector, regulations of the government have a significant positive effect on Green Supply Chain Management of this sector leading to a significant positive effect on their financial and environmental performance. On the other hand, the study of Day et al. (2014) found that lack of capacity, legitimacy and knowledge of the private schools to allow implementation of effective policies were the main issues why government intervention attempts are not successful. Furthermore, they asserted that the existence of regulations does not necessarily mean that they are effective, and even there are more negative findings, there were also some state regulations that positively contributed to the expansion of private schools’ support. Lastly, Yadav et al. (2018) found in their study that the government was found to be a major external driver of sustainability which influences the behavior of small and medium-sized enterprises. Their influence was primarily through regulation, legislation, economic and structural support, and knowledge dissemination.
2.2.2 Science and Environment

Research studies, environmental changes and new developments in the field of science paved the way to any form of growth and progress including sustainability development. The study of Fayomi, Okukpjie, and Mfon (2018) obtained clearer understanding on the role of research and its importance in sustainable development. Environmental changes like COVID19 were also a key player in driving sustainability practices. The study of Alblowi et al. (2022) on the drivers of supply chain sustainability in the Australian and Saudi Arabian fashion industry observed that there was both reactive and proactive approach in dealing with external factors like the COVID19 pandemic. The proactive approach encouraged social sustainability.

2.2.3 Customer Demand

The study of Olusegun, Ashari and Norani (2014) on the antecedents of environmental practices in the manufacturing industry in Malaysia suggested that there was an increased demand for a more responsible actions when it comes to the manufacturing companies products and processes. In the research conducted by Economist Impact among consumer and senior executives of retail companies, researchers found that “consumer trends are the most influential factor currently driving sustainability strategies” (Curtis, 2022). The World Economic Forum reports in a survey conducted that 41% of consumers in China prefer eco-friendly products, while in the UK, the market for sustainable products has become fourfold within the span of 20 years rising to £41 billion in 2019, and India a 13% increase in sales of organic products was seen since 2018 (World Economic Forum, 2021).

2.3 The Triple Bottom Line: Measures of Business Sustainability Practices and Outcomes

The Triple Bottom Line (TBL) framework divided the sustainability performance of businesses into social, environmental, and economic aspects. The term Triple Bottom Line was coined by John Elkington in 1994 which later on was also known as the 3 pillars of sustainability (Ksiezak & Fischbach, 2017). Elkington perceived TBL as a framework of sustainability that will make sure that the company will have a balanced influence on the social, environmental, and economic aspects of the business. The TBL was meant to be an accounting framework that can be used to distinctively measure the three dimensions of performance: People, Planet and Profits or the 3Ps. People, which refers to the social dimension of the business, includes their responsibility to the benefits of employees and the public in general, and doing business in an ethical manner. Planet, referred to the responsibility of companies to care for the environment while doing business. Profit, which referred to the economic dimension of the business, included the consideration of the economic viability of the company to ensure that it will be able to survive and continue to provide employment and social services to the community (Sarango-Lalanguin, Álvarez-García, & del Río-Rama, 2018). Furthermore, Hussain et al. (2018) distinguished the three pillars as to economic aspect, environmental aspect and social aspect. He suggested that the economic aspect can be measured by the organization through its directly-generated economic value, market presence, and indirect economic impacts. While the environmental aspect can be measured through the organization’s upkeep of the limited resources such as materials, energy, water, care for the earth’s biodiversity, control and management of their emissions and wastes, concern for producing quality and environment-friendly products and services, compliance with environmental regulations, management of product transportation, and the overall environmental protection measures taken. Lastly, the social aspect can be measured through the organization’s compliance with labor laws, care for human rights and the society, and taking responsibility and accountability with the products and services produced. Thus, by using the TBL approach on determining the organization’s impact on People, Planet and Profits through the economic, environmental, and social measures, business sustainability practices of firms can be established and gauged.

Slaper and Hall (2011) proposed relevant indicators that can be used to measure these three dimensions of sustainability. They suggested that measurable indicators for the economic aspect of sustainability may include the employees’ personal income, the cost of under-employment and job growth, among others. Indicators for the environmental aspect may include electricity consumption, solid waste management, and selected priority pollutants. Finally, indicators for the social aspect may include unemployment rate, female labor force participation rate and average commute time, among others (Slaper & Hall, 2011). They further clarified that environmental variables should give measurements of care for natural resources, social variables should give measurements of the social dimensions of a community such as education, equality and access to social resources, health and well-being, and economic variables should give measurements of profits and cash flow (Slaper & Hall, 2011). In the same manner, Bae and Smardon (2011) published general indicators of sustainability which can be applied by various industries and are usually reported by companies. These indicators include, but are not limited to the following: environmental indicators e.g., water consumption, quantity of materials used, energy consumption; economic indicators e.g., profits, revenues, donations; social
indicators e.g., female and disabled person’s rights, average hours of training of employees, illness rate (Bae & Smardon, 2011). Hristov and Chirico (2019) emphasized the importance of using sustainability Key Performance Indicators (KPIs) in implementing the strategies for sustainability. In their research, they framed a model which incorporates sustainability dimensions within the company’s strategies with the aim of gaining competitive advantage and creating long-term value. This model highlighted the use of the Sustainability Balanced Scorecard (SBSC) to motivate firms to integrate sustainability aspects into their strategies.

3. Methods

3.1 Instrument

This study applied a quantitative descriptive approach of research. A self-structured survey instrument was utilized to collect the data and quantitative statistical tools were used in the analysis. The population of the study covers the one thousand seventy (1,070) respondents from private schools in the Batangas province of the Philippines. The actual respondents were those who are directly involved in the school’s strategic planning i.e. school principals, assistant principals, finance officers, academic coordinators and registrars. Based on a 95% confidence interval, 5% margin of error and a response distribution of 50% i.e., assumption of normal distribution a total of 283 respondents were targeted as samples. Out of a total of 350 responses, 335 respondents were processed as there were cases of unengaged responses.

The questionnaire comprising three parts was based on previous researches conducted, particularly the studies of Sharma (2020), Sarango-Lalangui, Álvarez-García, Del Río-Rama (2018), and Bae and Smardon (2011). The first part was composed of questions that assess the antecedent variables driving the private schools’ business sustainability practices including Policies, Regulations and Legal Frameworks, Science and Environment and Customer Demand. The second part contained questions that assessed the implementation of business sustainability practices for each component of sustainability which are Economic, Social, Environmental. The third part covered questions that evaluated the outcomes of the school in each of these aspects of sustainability. Questions were answered using a Likert scale of 1 to 4 where 1 means Very Low/Strongly Disagree, 2 means Low/Disagree, 3 means Moderate/Agree, 4 means High/Strongly Agree. The same scale was used in measuring the influence of the antecedents and strength of implementation and outcomes where an average mean score of 3.5 to 4 indicates High, 2.5 to 3.49 indicates Moderate, 1.50 to 2.49 indicates Low and 1 to 1.49 indicates Very Low.

The instrument has undergone the validity and reliability tests. Factor Analysis (EFA) was conducted to test the validity of the instrument used. Using the SPSS, the KMO/MSA (Kaiser Meyer-Olkin for Measuring of Sampling Adequacy) and Bartlett’s Test of Sphericity values were generated to confirm the adequacy of sample size to conduct factor analysis and measure the strength of relationships among the variables. Results indicate that all the items, except for Social Outcomes (with value of .660), has KMO/MSA values ranging from .808 to .916 which was interpreted as “great to superb” (Hadi, Abdullah, & Sentosa, 2016). Thus, all the KMO/MSA values generated from the test indicate an adequate sample to allow a satisfactory factor analysis to proceed. The Bartlett’s Test of Sphericity was statistically significant at p < 0.001 which further supported the factorability of the correlation matrix (Hadi, Abdullah, & Sentosa, 2016).

As the instrument was comprised of numerous items, it was necessary to subject the data into data reduction technique. This was done to isolate the analysis to known factors that represent the variables better. Thus, the variables were analyzed using the Principal Component Analysis extraction method, i.e., the Antecedents, Sustainability Practices, and Outcomes. The analysis of the antecedents grouped the items into three factors. The factors identified were related to policies, regulations and legal framework, science and environment, and customer demand. These factors accounted for 60%, 62%, and 67% of the total variance (which is above the minimum requirement of 50%) (Sarango-Lalangui, Álvarez-García, & del Río-Rama, 2018). The factor loadings generated are between .414 to .885, all greater than 0.4 which is traditionally used as the lower limit of an acceptable factor loading (Johnson & Morgan, 2016). Based on the results, all factors got an Eigenvalue of more than 1 (Hadi, Abdullah, & Sentosa, 2016) ranging from 3.003 to 3.346 thus, all the factors for antecedents have been retained. For sustainability practices analysis, the factors identified were related to economic sustainability practices, social sustainability practices and environmental sustainability practices. These factors accounted for 51%, 63%, and 72% of the total variance (which is above the minimum requirement of 50%) (Sarango-Lalangui, Álvarez-García, & del Río-Rama, 2018). The factor loadings generated are between .514 to .860, all higher than 0.4, the lower limit of an acceptable factor loading (Johnson & Morgan, 2016). Based on the results, all factors got an Eigenvalue of more than 1 (Hadi, Abdullah, & Sentosa, 2016) ranging from 3.601 to 4.445 thus, all the factors for sustainability practices have been retained. Finally, the analysis of the outcomes which were also
grouped into three factors i.e., economic outcomes, social outcomes and environmental outcomes, accounted for 58%, 49%, and 54% of the total variance. Economic outcomes and environmental outcomes were all above the minimum requirement of 50% (Sarango-Lalangui, Álvarez-García, & del Río-Rama, 2018), while social outcomes (49%) fall short by 1% from the minimum requirement. The factor loadings generated are between .458 to .879, all were above 0.4. Based on the results, all factors got an Eigenvalue of more than 1 (Hadi, Abdullah, & Sentosa, 2016) ranging from 2.450 to 3.238. Taking into consideration the high factor loadings and Eigenvalues, all the factors for sustainability outcomes were also retained.

On the other hand, to test the reliability of the instrument used in the study, Cronbach’s Alpha reliability coefficient was computed to determine how well the items in the questionnaire are internally consistent with each other. According to Sekaran and Bougie (2016), if Cronbach’s Alpha is closer to 1, the reliability of the measure is higher. This study used a reliability coefficient of 0.7 as the limit point for measuring reliability. Table 1 shows the results of the reliability test conducted.

Table 1. Reliability test

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cronbach's Alpha</th>
<th>No. of Items</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antecedents</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy, Regulations, Legal Framework</td>
<td>0.831</td>
<td>5</td>
<td>Very Good</td>
</tr>
<tr>
<td>Science and Environment</td>
<td>0.838</td>
<td>5</td>
<td>Very Good</td>
</tr>
<tr>
<td>Customer Demand</td>
<td>0.875</td>
<td>5</td>
<td>Very Good</td>
</tr>
<tr>
<td>Sustainability Practices</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic</td>
<td>0.837</td>
<td>7</td>
<td>Very Good</td>
</tr>
<tr>
<td>Social</td>
<td>0.903</td>
<td>7</td>
<td>Very Good</td>
</tr>
<tr>
<td>Environmental</td>
<td>0.92</td>
<td>6</td>
<td>Very Good</td>
</tr>
<tr>
<td>Outcomes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economic</td>
<td>0.812</td>
<td>5</td>
<td>Very Good</td>
</tr>
<tr>
<td>Social</td>
<td>0.733</td>
<td>5</td>
<td>Respectable</td>
</tr>
<tr>
<td>Environmental</td>
<td>0.795</td>
<td>6</td>
<td>Respectable</td>
</tr>
</tbody>
</table>

Note. Rule of thumb: < 0.6 unacceptable, 0.6 to 0.65 undesirable, 0.65 to 0.7 minimally acceptable, 0.7 to 0.8 respectable, 0.8 to 0.9 very good (Johnson & Morgan, 2016).

Results of the reliability test showed alpha values of more than 0.70 in all the variables used which is the minimum recommended value (Johnson & Morgan, 2016). The values can be interpreted as ranging from “respectable to very good” indicators of the instrument’s reliability. Therefore, taking into account the results of the validity and reliability tests conducted, it can be confirmed that the instrument is highly reliable as they were free from random errors and, thus, they can be capable of providing consistent results.

3.2 Data Gathering Procedure, Ethical Consideration, Data Analysis

The questionnaires were distributed as a Google Form and were disseminated through social media apps and email until the required number of participants was reached. As the information needed should come from specific individuals, a judgment sampling method was applied. Thus, the questionnaires were directly emailed or sent to the social media accounts of the specific respondents for the study until the minimum number of respondents were obtained. The survey was conducted within a two-month period. The results have been further screened for unengaged and/or incomplete responses. As some of the information obtained from the respondents were confidential, the framing of questions was dealt with extreme care to protect the privacy of the data retrieved from the respondents. A scientific and careful approach to data analysis with an assurance of non-disclosure of names of the schools and the respondents who participated in the research was also guaranteed. Lastly, the sources of the items in the questionnaire were correctly and completely referenced so as to avoid the commission of plagiarism. All of the data that have been retrieved were processed through the SPSS and Smart PLS. To yield the correct information that will answer the objectives of the study, various statistical tools were used. Aside from descriptive analysis, SPSS’ multiple regression analysis was used to forecast the effect of the antecedents to sustainability practices and outcomes, while SmartPLS’ path analysis was used to analyze the dynamics of relationships among the dependent and independent variables. These statistical tools helped to identify which among the independent variables have statistical effect and the magnitude of their impact and relationships with the dependent variables.
4. Results and Discussion

4.1 Antecedents of Business Sustainability

Results indicate a moderate degree of influence from policy, regulations and legal framework to the private schools’ sustainability practices with a composite mean of 3.36. These results show that the private schools acknowledge that these policies affect their schools’ structure, processes, and practices and indicates that policy, regulations and legal framework could be driving the private schools’ sustainability practices. This finding further points out that policies and regulations are perceived by the private schools as one of the main antecedents of their sustainability initiatives. The results agree with the discoveries of Peattie and Ratnakaya (1992), Rakhmawati et al. (2020), Chatterjee and Chaudhuri (2021), Castro and Lopes (2022) that government regulations is one of the drivers of sustainability in business, among others.

Similar to policy, regulations and legal framework, science and environment is likewise perceived by the respondents as having a moderate influence to the private schools with a composite mean of 3.27. However, among the three main antecedents of business sustainability, customer demand is ranked last by the private schools. Nevertheless, it indicates that customer demand is also perceived to be one of the main antecedents of sustainability initiatives of the private schools. Among the major antecedents of business sustainability practices, science and environment is perceived by the private schools as the strongest driver of sustainability practices compared to policy, regulations and legal framework and customer demand based on their composite means. These results agree with the findings of Fayomi et al. (2018), Alblowi et al. (2022), and Singhal and Gupta (2016) that science particularly scientific studies, research and environmental phenomenon like pandemics drives an organizations’ sustainability initiatives.

Customer demand is also perceived to have a moderate influence to the private schools’ sustainability practices with a composite mean of 3.27. However, among the three main antecedents of business sustainability, customer demand is ranked last by the private schools. Nevertheless, it indicates that customer demand is also perceived to be one of the main antecedents of the sustainability initiatives of the private schools and it agrees with the findings of Adebambo et al. (2014), Peattie and Ratnakaya (1992), Yuen et al. (2017), and Olusegun et al. (2014) that public demand is considered an antecedent of sustainability.

Overall, the descriptive analysis shows that private schools perceive a moderate influence from the three antecedents having composite mean scores of 3.36, 3.38 and 3.27 for policy, regulations and legal framework, science and environment, and customer demand, respectively. Policy, regulations, and legal framework pertains to the policies, regulations and legal framework governing, and in relation to, the sustainability initiatives of the private schools. Science and environment refers to information, data, research initiatives, and environmental issues occurring in relation to the sustainability of these schools, and customer demand pertains to all the stakeholders of the schools including their customers, suppliers, local community, and the public in general. This finding is in consonance with the study of Sharma (2020) where he asserted that the main antecedents of sustainability include, among others, science and the environment, policy, regulatory and legal frameworks, and customer demand (Sharma, 2020). Therefore, based on the results generated from the analysis of the antecedents, it can be observed that policies, regulations and legal framework, science and environment, and customer demand can be considered the main antecedents of business sustainability practices that could be driving the sustainability practices of private schools where science and environment is perceived to be the strongest antecedent and customer demand the least perceived antecedent among these three.

4.2 Implementation of Sustainability Practices

As to the private schools’ implementation of sustainability practices, results indicate a moderate implementation level of the economic sustainability practices obtaining a composite mean of 3.48. This shows that the respondents agree with the economic sustainability practices of the schools. This further indicates caring for the employees’ welfare and obeying the legal requirements of doing business while aiming for better financial results. These results resonate with the findings of Crull (2014) wherein logistics companies under study also put high priority in their economic sustainability practices. Results also show that the respondents strongly agree with the social sustainability practices of the schools indicating high level of implementation showing a composite mean of 3.56. According to Hussain et al. (2018) the social aspect can be measured through the organization’s compliance with labor laws, care for human rights and the society, and taking responsibility and accountability with the products and services produced. These results showed that the schools put high importance in its social sustainability practices. On the other hand, implementation of the environmental sustainability practices of the private schools has a composite mean of 3.60. This indicates that the respondents also strongly agree with the schools’ environmental sustainability practices which means high implementation level. Comparison of the composite means of these three aspects of sustainability practices indicate that the
schools put greater importance when it comes to caring for the environment as compared with the other two dimensions of sustainability practices. According to Hussain et al. (2018) environmental aspect can be measured through the organization’s upkeep of the limited resources such as materials, energy, water, care for the earth’s biodiversity, control and management of their emissions and wastes, concern for producing quality and environment-friendly products and services, compliance with environmental regulations, management of product transportation, and the overall environmental protection measures taken. This finding also agrees with that of Sarango-Lalangui et al. (2018) where SMEs under study were observed to have medium to high implementation of sustainable practices in terms of economic, social and environmental aspects.

Overall, descriptive analysis shows high level of implementation of business sustainability practices among the private schools. Among the three sustainability aspects, environmental sustainability practices obtained the highest mean score of 3.60 (high level), while economic sustainability practices obtained the lowest mean score of 3.48 (moderate level). This indicates that the respondents perceived higher level of implementation of sustainability practices in terms of environmental aspect compared to economic and social aspects. In this study, economic sustainability practices are those pertaining to the financial aspect of the business, or practices related to earnings of the private schools, while still giving consideration to the social and environmental aspects. Environmental sustainability practices pertain to the protection of, and care for, the environment, while social sustainability practices are those that pertain to the caring for employees and service to the community in general.

4.3 Outcomes

Analysis of the sustainability outcomes shows that the respondents agree with the economic sustainability outcomes of the private schools with a composite mean of 3.37. This means that the schools have moderate outcomes from their economic sustainability practices. Among the items for economic outcomes, the respondents strongly agree that “The school complied with tax payments” with mean score of 3.75. This indicates that the schools put high importance on compliance and on being a responsible business. According to Morris and Visser (2023), companies no longer pay taxes just for compliance, but it became a critical element of a business’ social contribution. By this, paying taxes has become an ESG (environmental, social, governance) initiative. Moreover, the respondents also agree with the social sustainability outcomes of the private schools with a composite mean of 3.27. This means that the social outcomes from social sustainability practices is moderate. Among the items for social outcomes, respondents agree that “The school has a policy on female and disabled persons’ rights” with mean score of 3.56. This indicates the schools’ high regard with equality and rights of every employee and customer. According to UN Women (2022), the achievement of gender equality is the fifth among the 17 Sustainable Development Goals (SDG). This shows that the schools place high importance on gender equality and it is an important indicator of social sustainability. Lastly, the respondents also agree with the environmental outcomes of the sustainability practices of the private schools with a composite mean of 2.83. This means that outcomes from environmental sustainability practices of the private schools is moderate and they do not come as strong as the outcomes of the first two aspects of sustainability. Among the items for environmental outcomes, the respondents agree that the “Total amount of recycled or reused materials is increasing” with mean score of 3.09, and “Hazardous and solid wastes generated by the school is decreasing” with mean score of 3.01. SDG 12 (responsible consumption and production) includes targets that are concentrated on thorough management of all wastes through prevention, reduction, recycling and reuse (targets 12.4 and 12.5) and reduction of food wastes (target 12.3) (IISD, 2018). The economic outcomes are assumed to be the direct results of economic sustainability practices; social outcomes are that of social sustainability practices; and environmental outcomes of the environmental practices. The findings indicate a moderate level of outcome of business sustainability practices in the private schools. Among the three sustainability aspects, economic outcomes got the highest mean score of 3.60 while environmental outcomes got the lowest mean score of 2.83. Social outcomes are placed second with mean score of 3.27. The respondents perceived higher outcomes from the economic aspect compared to social and environmental aspects of sustainability. Overall, these results show moderate outcomes from the three aspects of sustainability practices of the private schools.

Finally, comparison of the sustainability practices and sustainability outcomes of the private schools reveals that while the private schools perceive high implementation of sustainability practices in the social and environmental aspects of sustainability, outcomes from these practices which shows moderate level, don’t necessarily follow the same level as their implementation. This indicates that the sustainability practices of the private schools in terms of economic and environmental aspects are not well-aligned with their sustainability outcomes and do not translate properly into better outcomes. However, the implementation level of sustainability practices in terms of economic aspects which is moderate is parallel with their outcomes. It can also be reiterated
that the ranking of sustainability practices differs from the ranking of sustainability outcomes, i.e. environmental practices were ranked first by the respondents based on the mean scores, but environmental outcomes were ranked last and economic practices were ranked last by the respondents, but economic outcomes were ranked first.

4.4 Impact of Antecedents to Sustainability Practices

The foregoing observation could be further explained in the following discussions where the impact of the antecedents to the private schools’ sustainability practices and the impact of sustainability practices to the sustainability outcomes are measured.

Table 2. Impact of the antecedents to economic sustainability practices of the private schools

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.861</td>
<td>.166</td>
<td>11.201</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>ANT POL</td>
<td>.129</td>
<td>.063</td>
<td>.145</td>
<td>2.058</td>
<td>.040</td>
</tr>
<tr>
<td>ANT SCI</td>
<td>.251</td>
<td>.063</td>
<td>.286</td>
<td>3.968</td>
<td>.000</td>
</tr>
<tr>
<td>ANT CD</td>
<td>.101</td>
<td>.066</td>
<td>.107</td>
<td>1.536</td>
<td>.125</td>
</tr>
</tbody>
</table>

Note. R=.482; R²=.232; Adjusted R²=.225; F-stat=33.402 (.000); df=3,331; Significant at p<0.05; Strength of relationship: <0.3 very weak, 0.3 < r < 0.5 weak, 0.5 < r < 0.7 moderate, r > 0.7 strong (Moore et al., 2013)

Table 2 shows the multiple regression analysis results where economic practices was deemed to be a factor of the three antecedents, namely, policies, regulations and legal framework, science and environment, and customer demand. The coefficient of association as shown by R is equal to .482 which shows a weak but positive relationship (Moore, Notz, & Flinger, 2013) between the dependent variable i.e., economic practices and the three independent variables i.e., policy, regulations, and legal framework, science and environment and customer demand. The Rsquare, a coefficient of determination, is equal to .232 which means that 23.2% of the variation in the dependent variable is caused by the independent variables. At df (3,331) = 33.402, p < .05, Rsquare = .232, it can be deduced that the antecedents have a statistically significant effect on economic sustainability practices. However, it is also noted that not all of the independent variables bear statistical significance. Since the p value of the antecedent customer demand is above the threshold’s limit of 0.05, this independent variable is removed from the regression equation. Given this, the regression equation can be written as follows:

*Economic Sustainability Practices = 1.861 + .145 (Policy, Regulations and Legal Framework) + .286 (Science and Environment) + e*

The results indicate that policy, regulations and legal framework and science and environment are important predictors of economic practices.

Table 3. Impact of the antecedents to social sustainability practices of the private schools

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.829</td>
<td>.172</td>
<td>10.609</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>ANT POL</td>
<td>.044</td>
<td>.065</td>
<td>.046</td>
<td>.669</td>
<td>.504</td>
</tr>
<tr>
<td>ANT SCI</td>
<td>.371</td>
<td>.066</td>
<td>.400</td>
<td>5.653</td>
<td>.000</td>
</tr>
<tr>
<td>ANT CD</td>
<td>.101</td>
<td>.069</td>
<td>.101</td>
<td>1.478</td>
<td>.140</td>
</tr>
</tbody>
</table>

Note. R=.509; R²=.259; Adjusted R²=.252; F-stat= 38.542 (.000); df=3,331; Significant at p<0.05; Strength of relationship: <0.3 very weak, 0.3 < r < 0.5 weak, 0.5 < r < 0.7 moderate, r > 0.7 strong (Moore et al., 2013)

Table 3 shows the regression analysis results where social practices were deemed to be a factor of the three antecedents, namely, policies, regulations and legal framework, science and environment, and customer demand. The coefficient of association as shown by R is equal to .509 which shows a moderate but positive relationship (Moore, Notz, & Flinger, 2013) between the dependent variable i.e., social sustainability practices and the three independent variables i.e., policy, regulations, and legal framework, science and environment and customer demand. The Rsquare, a coefficient of determination, is equal to .259 which means that 25.9% of the variation in the dependent variable is caused by the independent variables. At df (3,331) = 38.542, p < .05, Rsquare = .259, it can be deduced that the antecedents have a statistically significant effect on social sustainability practices.
However, it is also noted that not all of the independent variables bear statistical significance. Since the p values of the antecedent policy, regulations, and legal framework and customer demand are above the threshold’s limit of 0.05, these independent variables are removed from the regression equation. Given this, the regression equation can be written as follows:

Social Sustainability Practices = 1.829 + .400 (Science and Environment) + \(e\)

The results indicate that only science and environment is the important predictor of social sustainability practices.

Table 4. Impact of the antecedents to environmental sustainability practices of the private schools

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.657</td>
<td>.19</td>
<td>9.823</td>
<td>.000</td>
</tr>
<tr>
<td>ANT POL</td>
<td>.139</td>
<td>.064</td>
<td>2.171</td>
<td>.031 .668</td>
</tr>
<tr>
<td>ANT SCI</td>
<td>.343</td>
<td>.064</td>
<td>5.350</td>
<td>.000 .546</td>
</tr>
<tr>
<td>ANTD</td>
<td>.097</td>
<td>.067</td>
<td>1.440</td>
<td>.151 2.107</td>
</tr>
</tbody>
</table>

Note. \(R= .551; R^2= .304;\) Adjusted \(R^2 = .297;\) \(F_{3,331} = 48.114 (.000);\) \(df = 3,331;\) Significant at \(p<0.05;\) Strength of relationship: <0.3 very weak, 0.3 < r < 0.5 weak, 0.5 < r < 0.7 moderate, r > 0.7 strong (Moore et al., 2013).

Table 4 shows the regression analysis results where environmental practices was deemed to be a factor of the three antecedents, namely, policies, regulations and legal framework, science and environment, and customer demand. The coefficient of association as shown by R is equal to .551 which shows a moderate but positive relationship (Moore, Notz, & Flinger, 2013) between the dependent variable i.e., environmental sustainability practices and the three independent variables i.e., policies, regulations and legal framework, science and environment and customer demand. The Rsquare, a coefficient of determination, is equal to .304 which means that 30.4% of the variation in the dependent variable is caused by the independent variables. At \(df (3,331) = 48.114, p < .05, R^2 = .304,\) it can be deduced that the antecedents have a statistically significant effect on environmental sustainability practices. However, it is also noted that not all of the independent variables bear statistical significance. Since the p values of the antecedent customer demand is above the threshold’s limit of 0.05, this independent variable is removed from the regression equation. Given this, the regression equation can be written as follows:

Environmental Sustainability Practices = 1.657 + .146 (Policy, Regulations, and Legal Framework) + .367 (Science and Environment) + \(e\)

The results indicate that policy, regulations and legal framework and science and environment are important predictors of environmental sustainability practices. It is further noted that there are no issues about multi-collinearity and auto collinearity as all the Variance Inflation Factor coefficients from Tables 2, 3 and 4 are less than 5.0 (CFI Team, 2022).

Overall, it can be observed that the antecedents have a statistically significant impact with the sustainability practices of private schools in terms of economic, social, and environmental aspects, where a positive relationship exists between them. However, the strength of relationship between them ranges from weak to moderate where the relationship between the antecedents to economic sustainability practices is weak, and between the antecedents to social sustainability practices and environmental sustainability practices are both moderate. Moreover, detailed analysis shows that policy, regulations, and legal framework and science and environment are the significant drivers of economic sustainability practices and environmental sustainability practices of the private schools, while only science and environment significantly drives their social sustainability practices. Surprisingly, the results show that customer demand is not a significant predictor of the practices of the private schools in any of the three dimensions of sustainability. These results agree, in general, with the findings of Peattie and Ratnayaka (1992), Rakhmawati et al. (2020), Chatterjee and Chaudhuri (2021), Castro and Lopes (2022), that policies, regulations and legal framework drives sustainability practices, and also with the findings of Fayomi et al. (2018), Alblowi et al. (2022), Singhal and Gupta (2016) that science and environment also drives sustainability.
4.5 Impact of Sustainability Practices to Outcomes

Table 5. Impact of sustainability practices to outcomes

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Collinearity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R</td>
<td>Rsquare</td>
</tr>
<tr>
<td>OE</td>
<td>0.469</td>
<td>0.220</td>
</tr>
<tr>
<td>PE</td>
<td>0.543</td>
<td>9.697</td>
</tr>
<tr>
<td>OS</td>
<td>0.266</td>
<td>0.071</td>
</tr>
<tr>
<td>PS</td>
<td>0.321</td>
<td>5.033</td>
</tr>
<tr>
<td>OEN</td>
<td>0.233</td>
<td>0.054</td>
</tr>
<tr>
<td>PEN</td>
<td>0.301</td>
<td>4.365</td>
</tr>
</tbody>
</table>


Significant at p < 0.05; Strength of relationship: < 0.3 very weak, 0.3 < r < 0.5 weak, 0.5 < r < 0.7 moderate, r > 0.7 strong (Moore et al., 2013).

Table 5 shows the regression analysis results where economic outcomes was deemed to be a factor of economic sustainability practices, social outcomes of social practices, and environmental outcomes of environmental practices. The coefficient of determination between the dependent and independent variables as shown by R is equal to .469, .266, and .233 for economic, social and environmental aspects respectively. These indicate a positive but weak relationship for economic variables, and very weak for social and environmental. The R2 equal to .220 means that 22% of the variation in the economic outcomes is caused by economic practices, R2 of .071 means 7.1% of the variation in social outcomes is caused by social practices, and R2 of .054 means that 5.4% of the variation in environmental outcomes is caused by environmental practices.

At df (1,333) = 94.029, p < .05, Rsquare = .220, it can be deduced that the economic sustainability practices has a statistically significant effect on economic outcomes. Given this, the regression equation can be written as follows:

\[
\text{Economic Sustainability Outcomes} = 1.486 + .469 \times (\text{Economic Sustainability Practices}) + e
\]

At df (1,333) = 25.330, p < .05, Rsquare = .071, it can be deduced that the social sustainability practices has a statistically significant effect on social outcomes. Given this, the regression equation can be written as follows:

\[
\text{Social Sustainability Outcomes} = 2.124 + .266 \times (\text{Social Sustainability Practices}) + e
\]

At df (1,333) = 19.056, p < .05, Rsquare = .054, it can be deduced that the environmental sustainability practices has a statistically significant effect on the environmental outcomes. Given this, the regression equation can be written as follows:

\[
\text{Environmental Sustainability Outcomes} = 1.742 + .233 \times (\text{Environmental Sustainability Practices}) + e
\]

Overall, it can be observed that the sustainability practices of the private schools significantly impact their sustainability outcomes where a positive relationship exists between them albeit with weak strength of relationship. The relationship between the economic sustainability practices and economic sustainability outcomes is weak, while the relationship between social sustainability practices and social sustainability outcomes is very weak, similar with the relationship between the environmental sustainability practices and environmental sustainability outcomes. Moreover, detailed analysis shows that even though these variables have weak relationships, economic sustainability practices, social sustainability practices, and environmental sustainability practices, are significant predictors of economic sustainability outcomes, social sustainability outcomes, and environmental sustainability outcomes, respectively.

4.6 Sustainability Framework

Review of literature on the concept of sustainability practices of the private schools show that there is a need for a framework that connects the antecedents (i.e., policies, regulations & legal framework, science & environment, and customer demand), the sustainability practices of the private schools, and their sustainability outcomes in terms of economic, social and environmental aspects. Given these relationships, the path analysis of the three variables i.e., sustainability antecedents, sustainability practices, and sustainability outcomes of the private schools is shown in Figure 1.
Figure 1. Path analysis of the antecedents, sustainability practices and outcomes of private schools

Figure 1 presents the interplay of the antecedents, business sustainability practices and outcomes of the private schools where the direct and indirect effect of the antecedents to outcomes can be seen with the mediating effect of sustainability practices. Sustainability practices, the mediator (M) explains how the antecedents i.e., the independent variable (IV) impacts the outcomes i.e., the dependent variable (DV) since the impact of the IV to DV is not direct. This figure shows that the antecedents (IV) affect the sustainability practices (M) which leads to the outcomes (DV). This means that the antecedents do not directly impact the outcomes but it is actually the antecedents affecting the sustainability practices which in turn affect the outcomes.

In this figure, it is hypothesized that the antecedents bear an effect on the economic, social and environmental sustainability practices. The magnitude of the effect or effect size of these antecedents to the practices and their corresponding significance levels are indicated by the r²-values and p-values on the arrows that link these variables. What needs to be understood from this model is that by itself, the independent variables i.e., antecedents do not directly create an impact on the outcomes. Rather, through mediating variables i.e., economic, social and environmental practices, the effect of these antecedents are triggered. The results indicate that economic practices significantly mediates the relationship between the antecedents and economic outcomes. The coefficient of determination between the antecedents and economic outcomes (r² = 0.152, p < 0.05) and the coefficient of determination between the economic practices and economic outcomes (r² = 0.482, p < 0.05) were significant. The indirect effect was (0.571) *(0.482) = 0.275 which is also statistically significant (p < 0.05). Moreover, the environmental practices also significantly mediate the relationship between the antecedents and environmental outcomes. The coefficient of determination between the antecedents and environmental outcomes (r² = 0.115) is not significant but the coefficient of determination between the environmental practices and environmental outcomes (r² = 0.264, p < 0.05) was significant. The indirect effect was (0.597) *(0.264) = 0.158 which is also statistically significant (p < 0.05). Lastly, the social practices also significantly mediate the relationship between the antecedents and social outcomes. The coefficient of determination between the antecedents and social outcomes (r² = 0.288) is statistically significant and the coefficient of determination between the social practices and social outcomes (r² = 0.303, p < 0.05) was also significant. The indirect effect which was (0.562) *(0.303) = 0.170 was also statistically significant (p < 0.05). This means that sustainability practices significantly mediates the effect of the antecedents to sustainability outcomes. This highlights the role that sustainability practices play in the sustainability framework of the private schools.

5. Conclusion

Based on the foregoing analysis, it can be inferred that in the case of the private schools in the province of Batangas, Philippines, the three variables of sustainability proposed by Sharma (2020) in his study which are the antecedents, strategies (practices in this study), and outcomes manifests that they are significantly interrelated. Specifically, in the case of the private schools under study, economic practices appear to significantly mediate...
the relationship between the antecedents and economic outcomes, environmental practices significantly mediate the relationship between the antecedents and environmental outcomes, and social practices significantly mediate the relationship between the antecedents and social outcomes. These relationships would help the private schools determine the predictors of sustainability which could positively contribute to a healthier economic, social and environmental sustainability outcomes and acquire sufficient information with regards to the development of their sustainability efforts.

For the private schools in the Batangas province, these findings, imply that the weak relationship between sustainability practices to outcomes illuminate the fact that while the private schools may implement sustainable practices well, its impact to achieving sustainable goals are hardly felt. This may be attributed to many reasons, such as the targets or benchmarks set for sustainable practices may have been set lower than the widely accepted sustainable outcomes. For example, in the social aspect of sustainability, while the respondents “strongly agree” that the school has a policy on female and disabled persons’ rights. The respondents still perceive that they have not done enough to be convinced that there really is gender equality and fairness in their schools. Another implication of the weak relationships between practices and outcomes is that, the adherence to sustainable practices among the implementors may mainly be based on minimum compliance or lack of motivation to commit to sustainable goals. This may be due to unrecognized sense of urgency or lack of incentives to reward best practices and outcomes in sustainability development. All of these implications are good areas for future research, which will try to further validate these assertions through more qualitative approaches such as immersions, observation researches, focused- group discussions or structured interviews with key informants.

References


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