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The objective of the “*The Erudite*” is to publish semi-annually high quality qualitative and quantitative research abstracts and/or full papers in terms of novelty, contribution, style, and intellectual integrity in the areas of: (1) financial accounting and reporting; (2) management accounting; (3) accountancy education; (4) auditing, assurance, and information technology; and (5) business regulations.

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Selected Countries' Financial Reporting Treatment of Cryptocurrency Transactions: Basis for PFRS Proposal

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Abstract – The use of cryptocurrency has gained wide acceptance and popularity since the introduction of Bitcoins in 2009. This type of digital currency eases payment transactions and secures these transactions through cryptography and blockchain. This study aimed to identify and analyze the financial reporting treatment used by companies in their cryptocurrency transactions in the following countries: Australia, Canada, Hong Kong, United Kingdom, United States and Philippines. Financial statement information was gathered initially from the electronic database “Osiris”. Then, content analysis of published financial statements of entities with cryptocurrency transactions were conducted to determine the reporting treatments of cryptocurrencies. The reporting entities’ notes to the financial statements were carefully read and analyzed to extract the basis for justifying the measurement and presentation of cryptocurrencies in the entities’ financial statements. Results of the study showed that business entities with cryptocurrency transactions in foreign countries vary in financial reporting treatment, although two prominent financial statement classifications emerged: (a) current assets presented either as financial assets at fair value, receivable from broker or inventories and (b) intangible assets. Variations in the accounting treatment and presentation in the financial statements of cryptocurrency affect comparability of information and their usefulness to the stakeholders. Therefore, the researchers recommend to the standard setting bodies, the International Accounting Standards Board in particular, that a reporting standard should be developed to guide cryptocurrency users and miners in the formulation of their accounting policies, and to enhance the comparability and understandability of these entities’ financial information.

Keywords: financial reporting, cryptocurrency, bitcoin, mining, financial assets

I. INTRODUCTION

Cryptocurrency is a digital money which can be used as a means to acquire goods and services. However, unlike bills and coins and deposits with banks, cryptocurrencies’ values are not fixed. Similar to equity and debt securities in the capital market, cryptocurrencies’ values fluctuate, such that investors may trade based on their expectations on the movement of their prices.

This digital money has existed as a theoretical construct even before the introduction of the first digital alternative currencies. David Chaum, an American cryptographer, developed a “blinding” algorithm which remains to be the center of modern web-based encryption. This is the technical foundation of cryptocurrency which dated back as early as the 1980s. Information exchanged between the parties are secured and cannot be altered because of the algorithm, setting in place the fundamentals for future electronic currency transfers. (Martucci, n.d)

Cryptocurrencies, of which Bitcoin is the most successful, are a subset of virtual currency schemes (iLINC). Virtual currency may be defined as a digital representation of value that can be digitally traded and functions as a medium of exchange; and/or a unit of account; and/or a store of value, but does not have legal tender status (i.e., when tendered to a creditor, is a valid and legal offer of payment) in any jurisdiction. (Financial Action Task Force, 2014, p.4)

In this study, the researchers identified the different financial reporting treatments of different companies and the state of cryptocurrencies in selected countries such as Australia, Canada, Hong Kong, Philippines, United Kingdom, and United States of America.

The researchers analyzed the entities' justification for their respective reporting treatments of cryptocurrencies to serve as basis for recommending the development of an accounting standard that will guide entities for recording cryptocurrency transactions and for presenting these transactions in the financial statements.

One of the theoretical bases for this research is the International Financial Reporting Standards' new conceptual framework. The new conceptual framework introduces improvements on definition of assets and liabilities, measurement, presentation and disclosure, and recognition and derecognition of assets and liabilities. This conceptual framework emphasizes that measurement uncertainty, recognition inconsistency and presentation and disclosure of items may affect the faithful representation of financial information.

The development of this paper's conceptual framework is anchored on Watts and Zimmerman's Positive Accounting Theory (PAT) which views that the choice for accounting policies is affected by the firms' consideration of contract costs and changing circumstances.

Tan & Low (2017), in their study about the treatment of Bitcoin as a currency, used the IASB's Conceptual Framework to conclude that the reporting entity's nature of transactions shall be the primary basis for the treatment of Bitcoin as to whether it should be used as a type of currency or goods. Using the IASB's Conceptual Framework, the authors observed that it is useful to examine the economic substance of the Bitcoin transaction of the reporting entity. (Tan & Low, 2017)

Tan & Low (2017) pointed out the IFRS Conceptual Framework for cryptocurrency transactions. The conceptual framework sets out two basic qualitative features of financial information which are relevance and faithful representation. Faithful representation indicates that financial information is the substance of an economic phenomenon and not merely its legal form. The authors illustrated the concept through the use of accounting of a capital lease, the lessee recognizes the asset in his books along with a corresponding lease liability even if the legal ownership of the asset does not belong to the lessee. The economic substance in a capital lease is that the lessee mainly controls the use, even without legal ownership, and obtains the lease asset benefit over its lease term. Therefore, the authors conclude in their study that focusing on the determination of the legal form of Bitcoin is not a useful financial reporting approach because it solely depends on the reporting entity's situation. In view of the conceptual framework, it is useful to examine the economic substance of the Bitcoin transaction of the reporting entity (Tan & Low, 2017).

Sovbetov (2018) conducted a study that focuses on the movement of the value of cryptocurrencies. The study entitled "Factors Influencing Cryptocurrency Prices: Evidence from Bitcoin, Ethereum, Dash, Litecoin, and Monero" emphasizes on factors that have the potential to affect the prices of cryptocurrencies. These factors are grouped under two categories: internal factors and external factors. Internal factors include transaction costs, reward system, mining difficulty, coins circulation and rule changes. Meanwhile, the external factors include the popularity of the cryptomarket that brings about trends and speculations, price fluctuations of similar items in the market, such as gold, stock, and interest rates, political and regulatory environment which Sovbetov claimed to be the main external factor that directly affects the market price of cryptocurrencies. The findings of this study encouraged the researchers to include the determination of the state of cryptocurrency in Australia, Canada, Hong Kong, United Kingdom, United States and Philippines.

In its Exhibit draft (ED) on 28 May 2015, the IASB outlines the suggestions for a revised conceptual framework and outlines the concepts underlying the preparation and presentation of financial accounts for external users. The Conceptual Framework project's objective is to improve financial reporting by providing a more comprehensive, clear, and updated set of concepts. Venter (2016) believes it is useful to take note of the tentative discussions so far under the project considering that the project is not yet finalized.

Venter (2016) also stated that it is important to consider the relevance of an asset or liability measurement basis, as well as associate income and expenditure. First, the contribution of asset or liability

to future cash flows must be given a reliable measurement basis. The most relevant measurement basis will be one that reflects the present value of future cash flows for assets and liability that directly generate cash flows such as assets that can be sold autonomously: that is, fair value or value for money (liability, performance value). Second, the characteristics of the asset or the liability; a current value, such as fair value or in use, may be more relevant for assets and liabilities that have a variability in cash flow, or are sensitive to market or other risks than cost-based measures.

Digital currency holdings directly produce their cash flows and are sensitive to market factors. According to the latest study in the conceptual framework project measurement basis, a current value would be the most appropriate basis for holding digital currency. In addition, digital currencies do not have a maturity date or useful life on which a historical cost approach can be based.

However, as Venter (2016) asserts, the enhancement of comparability, verifiability, and understandability qualitative characteristics also has implications for the selection of a measurement basis, a value in which is used based on entity-specific assumptions. On the other hand, the author also indicated that a fair value measurement is based on assumptions of market participants. The author believes that measuring fair values would provide users of financial statements with more comparable, comprehensible, and understandable data since the exchange of digital currencies and market information is compatible with digital currencies.

It was further discussed by Venter (2016) that a notable presumption in the ED conceptual framework states that the statement of profit or loss includes all revenues and expenses, however, if refuted, such incomes or expenses (or their components) are included in other comprehensive income.

The Conceptual Framework broadly allows income and expenses in other comprehensive income if the following has been complied as Venter (2016) noted:

- when this results in the profit or loss statement with more relevant information ; the income and costs are not based on historical cost figures; and
- when an asset or liability has been applied to the mixed measurement basis (for example, current value for financial position statement and historical cost in profit or loss statement (p.18).

Venter (2016) does not consider any of the reckless assumptions in the field of digital currency accounting. Furthermore, recognition of fair value changes through profit or loss would also include accountability for the holding decision, since those assets are more similar to investments and financial instruments which are usually fairly valued by profit and loss (Venter, 2016). Venter (2016) has also indicated that most financial experts in this field that are using IAS 38 choose a fair value model even though these experts have a small sample of financial statements available to the public. The users regard fair value as most relevant to those assets. In the opinion of the author, measurement of fair value provides both the financial position statement and the financial performance statement with the most appropriate measurement basis.

Conceptual Framework

The researchers' conceptual framework is presented in the following diagram:

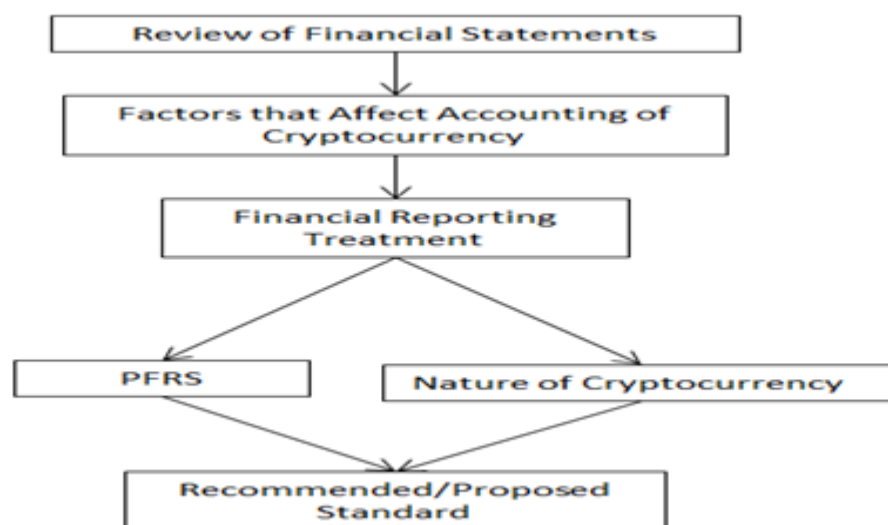


Figure 1: Conceptual Flow Diagram

From financial statements of those entities reporting cryptocurrency transactions, the researchers identified the following: (a) the nature of the reporting entity (b) financial reporting treatment of cryptocurrency (c) the status of regulations in the countries where these entities operate, (d) the types of cryptocurrencies transacted; (e) the financial statement presentation and measurement. Also, the treatment is referred to the applicable requirements of the International Financial Reporting Standards to determine appropriateness of these applications.

II. RESEARCH METHOD

The researchers chose five countries and selected at least two companies from each, which were randomly chosen due to availability of data. Furthermore, one company was included from the Philippines to address more reliable information. For the purpose of comparison, two companies were selected and analyzed based on the nature of their businesses, the kinds of transactions, the cryptocurrencies used, and the measurement and justification for the financial reporting treatment. After gathering and analyzing the financial statements, particularly the financial position and notes to the financial statement, other factors were evaluated: (a) cryptocurrencies used, (b) cryptocurrency transactions; (c) legal and political environment.

All of the countries evaluated in this study is a member of IASB namely, Australia, Canada, Hongkong, Philippines, United Kingdom, and United States of America; therefore, the financial reporting treatment of cryptocurrency can be reliably compared to the PFRS which is based on the IFRS that was established by the IASB.

Respondents were selected through purposive sampling. In this study, the researchers selected the companies who transact with cryptocurrencies as respondents. To gather the necessary and important data for the study, the authors gathered a copy of financial statements through the Osiris database and other websites. The access to Osiris database was only limited to an ample set of data. Nonetheless, all the information gathered shall be treated with confidentiality and for the sole purpose of the study with no intention of harming any entity.

The companies that were the basis for this research were: Australia 1.) DigitalXLtd 2.) Bitcoin Group Ltd. and controlled entities; Canada 1.) Calyx Ventures Inc. 2.) Big Blockchain Intelligence Group Inc.; Hongkong 1.) China Binary New FinTech Group 2.) Bitmain Technologies; Philippines 1.) Xurpass Inc.; United Kingdom 1.) CMC Markets 2.) IG Group Holdings; United States of America 1.) Bayside Corporation 2.) Bitcoin Investment Trust. The companies vary from the type of transactions they are engaged in with regards to cryptocurrency.

III. RESULTS AND DISCUSSION

This section is divided into three categories: (1) financial statement data; (2) other factors; and (3) conformity with the nature of cryptocurrency.

Companies	Crypto-Transactions	Treatment	Measurement	Recording of Gain/Loss
Australia				
1. DigitalXLtd	1. Mining and Trading	1. Inventory (Current Asset)	1. Fair Value (Closing price per Coin Market Cap)	1. Profit or Loss
2. Bitcoin Group Ltd. and Controlled Entities	2. Mining	2. Intangible Asset	2. Initially at cost; but subsequently recorded at fair value (weighted average cost method)	2. Profit or Loss
Canada				
1. Calyx Ventures Inc	1. Trading and Mining	1. Digital Asset (Current Asset)	1. Fair Value (based on cryptocompare - website)	1. Profit or Loss
2. Big Block Chain Intelligence Group Inc.	2. Trading and Mining	2. Investment (Current Asset)	2. Market Value	2. Profit or Loss

Companies	Crypto-Transactions	Treatment	Measurement	Recording of Gain/Loss
Hong Kong				
1.China Binary New FinTech Group	1.Trading	1.Financial Asset	1.Fair Value (quoted market price)	1.Profit or Loss
2. Bitmain Technologies	2. Mining	2. Intangible Asset	2. At cost (weighted average cost method)	2. Profit or Loss (if non-recoverable, recognize impairment)
Philippines				
1. Xurpas Inc.	1. Trading	1. Other Intangible Asset	1. At cost	1. Not Specified
U.K.				
1. CMC Markets	1. Trading	1. Due from Brokers (Current Asset)	1. Not Specified	1. Profit or Loss
2. IG Group Holdings	2. Trading	2. Other Assets (Current Asset)	2. Fair Value Less Cost to Sell	2. Profit or Loss
U.S.A.				
1. Bayside Corporation	1. Trading and Investment	1. Financial Asset (Current Asset)	1. Fair Value (quoted market price)	1. Profit or Loss
2. Bitcoin Investment Trust	2.Investment	2. Financial Asset (Current Asset)	2. Fair Value (quoted prices in GDAX)	2. Profit or Loss

Table 1: Financial Statement Data

After careful analysis, a distinct pattern can be observed between the type of transaction and its financial reporting treatment. As seen in *Table 1*, five out of the six countries, with the Philippines being the exception, that engaged in trading of cryptocurrency treats it as a current asset and is measured at its fair value while those that are engaged in mining records the transactions as intangible asset and is measured at its cost.

Country	Cryptocurrency	State of Cryptocurrency (Status, Law / Regulation, Regulatory body)
Australia	Bitcoin	<p>> Legal tender</p> <p>The Australian government following Japan's move that came in March 2016 declared cryptocurrencies legal tender and made specifications as to the treatment of Bitcoin as property in 2017 and exchanges as only legal upon register in Australian Transaction Reports and Analysis Centre (AUSTRAC), exchanges offering cryptocurrency without being registered shall be criminally liable and penalized of two years in prison with AUD 105,000 for not complying.</p> <p>Australian Transaction Reports and Analysis Centre (AUSTRAC)</p>
Canada	Bitcoin, Ethereum, Solarcoin, Bitcoin Cash, Bitcoin Gold, Lumen	<p>> Legal but not legal tender.</p> <p>No specific law on cryptocurrency, but it is covered by the Taxation Law of the country.</p> <p>Canadian Securities Administrators - cryptocurrency offerings Canada Revenue Agency - exchange and taxation of cryptocurrency in the country.</p>
Hong Kong	Bitcoin and litecoin	<p>> Legal but treated as a virtual commodity rather than a currency.</p> <p>The principle "know your customer" applies to this kind of trading; the principle is basically making sure to have adequate information about the said customer such as source of wealth or funds, business relationship, and making a report to the Financial Intelligence Unit for any suspicious activities. Later on, the term "virtual asset" was used and the Securities and Futures Commission (SFC) announced that funds that invests in virtual assets should only be done by professional investors.</p> <p>It does not have a specific regulatory body however trading activities are controlled by the Customs and Excise Department, including trading commodities.</p>
Philippines	Bitcoin	<p>> Legal but not a legal tender</p> <p>The Bangko Sentral ng Pilipinas (BSP) has provided guidelines regarding virtual currency transactions.</p> <p>There is no specific regulatory body but companies with virtual currency transactions should register with the BSP first.</p>

Country	Cryptocurrency	State of Cryptocurrency (Status, Law / Regulation, Regulatory body)
United Kingdom	Bitcoin and Ethereum	<p>> Legal but not a legal tender</p> <p>Currently there is no regulation about cryptocurrency</p> <p>Although the crypto market situation is being analyzed by the Bank of England (Terenzi, 2018), it will still take at least two years before it gets regulated according to Jeff Kaufmann who is the Legal Director of Reynolds Porter Chamberlain (RPC), which is a British law firm (Alexandre, 2018).</p>
United States of America	Bitcoin	<p>> Legal but not a legal tender.</p> <p>No definite law regarding cryptocurrencies. Regulation varies upon state.</p> <p>There is no regulatory body established.</p>

Table 2: Other Factors Considered

Factors that may affect the financial reporting treatment used that were not present in the financial statements were also considered. The identified factors were the kind of cryptocurrencies used and the state of cryptocurrencies in each country. As summarized in *Table 2*, cryptocurrencies are legal in all countries but considered as legal tender only in Australia. Countries differ in their regulatory body and also related laws and/or regulations; the United Kingdom and United States of America, currently, do not have any guidelines nor regulations regarding cryptocurrency transactions. As for their justification regarding the treatment used, it may vary depending on the country. The state of cryptocurrencies greatly affects the Australian companies while the cryptocurrency transactions or the management decision applies for the rest of the countries.

Financial Reporting Treatment	Definition	Analysis of conformity with the nature of cryptocurrency
		Similarities Differences
1.) Financial Asset	Any asset that is cash, another entity's equity instrument, has a contractual right from another entity to receive cash or other financial assets.	<ul style="list-style-type: none"> • Has no physical substance • It is a liquid asset • No contractual right to receive cash or another financial asset • Not cash equivalent because of the volatile changes of market value

Financial Reporting Treatment	Definition	Analysis of conformity with the nature of cryptocurrency	
		Similarities	Differences
2.) Intangible Asset	An identifiable non-monetary asset without a physical substance that is an asset that is an entity-controlled resource as a result of past events and inflow of future economic benefits is expected.	<ul style="list-style-type: none"> ● Has no physical substance ● It is capable of being separated from the holder and sold or transferred individually ● It does not give the holder the right to receive a fixed or determinable number of units of currency 	<ul style="list-style-type: none"> ● No rights and obligations transferred ● Not devised to deal with items with cash-like characteristics which are held for investment purposes
3.) Inventory	An asset held for sale in the ordinary course of business, asset for sale in the ordinary course of business in the production process, and consumable materials and supplies in production.	<ul style="list-style-type: none"> ● Held for sale in the ordinary course of business 	<ul style="list-style-type: none"> ● Not a tangible personal property ● Not devised to deal with items with cash-like characteristics which are held for investment purposes
4.) Due from brokers	A general ledger asset account that is the amount owed to a company resulting from the company providing credit goods and/or services.	<ul style="list-style-type: none"> ● Has no physical substance 	<ul style="list-style-type: none"> ● No contractual right to receive cash or a cash equivalent

Table 3: Conformity with the nature of cryptocurrency

The financial reporting treatments used by the companies were defined according to their definitions in the Philippine Financial Reporting Standard or PFRS. Furthermore, the financial reporting treatments based on their definitions were analyzed supposing that they conform with the nature of cryptocurrencies. As shown in *Table 3*, none of the treatments used totally conform with cryptocurrencies. For comparability, a uniform standard should be assigned.

IV. CONCLUSION AND RECOMMENDATIONS

The researchers conclude that cryptocurrencies are recorded in different manners by different companies according to the utilization of the company; intangible asset, digital currency, financial asset, and investment are the financial reporting treatment used by the selected companies from the five countries namely Canada, Australia, Hong Kong, Philippines, United Kingdom and the United States of America. A simple approach in accounting for cryptocurrency is basing it on the nature of the transaction of cryptocurrencies such as trading or mining. In the Philippines, since cryptocurrency transactions are regulated by Bangko Sentral ng Pilipinas, the only allowed cryptocurrency transaction is Virtual Currency Exchanges as stated in BSP Circular No. 944 published last February 6, 2017. In line with this, the

researchers further investigated why cryptocurrencies would not conform to the mentioned financial reporting treatments. Cryptocurrencies are not financial assets because they have no contractual right to receive cash or any other financial asset and they cannot be cash equivalents due to volatile changes of its market value. Cryptocurrencies cannot be classified as intangible assets because rights and obligations cannot be transferred for the reason that they are decentralized and intangible assets do not deal with items with cash-like characteristics which are held for investment purposes. Moreover, IAS 38 states that previously recorded impairment cannot be reversed which contradicts the volatile nature of cryptocurrencies. Recording cryptocurrency as inventory is not possible because inventory does not deal with items with cash-like characteristics which are held for investment purposes. Due from brokers, a receivable account, is not a possible financial reporting treatment of cryptocurrency because cryptocurrencies have no contractual right to receive cash or cash equivalents. With that being said, the researchers suggest a new accounting standard which will unify the financial reporting treatment of cryptocurrencies which shall properly reflect the economics of cryptocurrencies.

Since cryptocurrencies are Virtual Assets which is defined as “digital representation of value” which can be used as a medium of exchange; and/or a unit of account; and/or a store of value, but does not have legal tender status, the researchers recommend that they should be recorded under the account **Digital Assets** which is a current asset. It shall be initially and subsequently measured at fair value like financial assets and the subsequent gains and losses due to fair value fluctuation shall form part of the profit/loss section of the income statement. This standard shall apply to all kinds of cryptocurrency transactions, be it trading or mining; also, this gives emphasis on resolving diverse cryptocurrency interpretations. Furthermore, this can address problems on lack of guidance with intangible assets with investment-like characteristics.

Recommendations

The researchers recommend that studies regarding cryptocurrency should be further enhanced and should be given more importance in the Philippines. It is important that the government should try to explore further on cryptocurrencies in order to create or revise existing regulations which will govern the use of cryptocurrency in the Philippines. The researchers also recommend that cryptocurrency should have a regulatory body established specifically for a uniform measurement or valuation of cryptocurrencies. The researchers encourage the academe to consider publishing more information regarding cryptocurrencies to increase awareness about the topic. Moreover, this study covered areas which are useful for future studies, future researchers should include a wider spectrum of data regarding Philippine companies’ financial reporting treatments.

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The Effect of Excise Tax in Petroleum Products to the Air Pollution Level in the Philippines

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***Abstract* – One of the purposes of imposing excise tax on certain products is to regulate the use of such product to improve health and to protect our environment. This study aims on determining whether the excise taxes imposed on petroleum products has an effect on the level of air pollution. The data being used in this study are the excise tax rates of the different types of petroleum products and the level of PM2.5 which has a great impact on air pollution. This PM2.5 is mostly composed of combustion particles from burning fuels. The result shows that increasing excise tax rates on petroleum products will lead to a decrease in the level of air pollution. Other factors not considered in this study may also contribute in the decreasing level of air pollution nowadays like strict standard on the engines of vehicles and other government regulations that promotes clean air.**

***Keywords:* excise tax, air pollution, taxation, environment, health**

I. INTRODUCTION

Excise taxes are selective taxes on the sale or use of specific goods and services, such as alcohol and gasoline (Bureau of Internal Revenue). These excise taxes are imposed for different purposes. According to Hines Jr., J. (2007), the four motivations that underlie the use of most excise taxes are revenue generation, application of the benefit principle of taxation, control of externalities which is the goal of a number of excise taxes on polluting substances, such as taxes on petroleum products, and to discourage consumption of potentially harmful substances. Furthermore, O'Donoghue and Rabin (2006) supplemented the fourth motivation by stating that irrational consumers begin consuming items that are harmful for individuals without fully appreciating the regret they will experience years later. The focus of this study is on the third motivation specifically on the excise tax imposed on petroleum products. Taxes on petroleum products have been advocated as a way to reduce air pollution and the possibility of global warming and to conserve energy. The rise in the imposition of taxes of gasoline consumption has been the result of increasing concerns of air pollution due to pollutants emitted from burning fuels and to its terrifying effects on health. To lessen carbon emission, government will imposed tax on products emitting this carbon. It is widely recognized in practice that a tax imposed in carbon must take the form of a tax on the consumption of energy products such as gasoline (Fullerton and West, 1999). The Intergovernmental Panel on Climate Change, the International Energy Agency, the International Monetary Fund, and the World Bank have called on governments to increase gasoline tax rates in order to combat the social and environmental costs of gasoline consumption. According to Organisation for Economic Co-operation and Development (OECD, 2011), environmental taxes have been successfully used to address a wide range of issues including air emissions. In the Philippines, like in other countries, the imposition of a petroleum and coal taxes is aimed at reducing reliance on fossil fuels and ultimately reducing carbon emissions (Castillo, Clarete, Muyrong, Tuaño, and Banaag, 2018). With the recent implementation of the train law, excise tax imposed on petroleum products have increased. Since 1997 but before the implementation of TRAIN law, excise tax rates on petroleum products have either been fixed in nominal peso terms or reduced to zero in the interim (Manasan, 2018). Imposing these taxes on petroleum products will result to a significantly much higher reductions on local air pollutants (Shah and Larsen, 1992). Most of the taxes imposed on certain products will increase the price of such products. The excise tax imposed on petroleum products is not an exception

to such cases. This tax will increase the prices of petroleum products. Generally, the higher the price of a certain product, the lower the demand or consumption for the said product would be. This is evidenced by the widely known and accepted theory of the law on demand. Linegar and van Walbeek (2017) has already conducted a study in the relationship of excise taxes on the price. With the imposition of excise taxes on petroleum products, the consumption of these petroleum products will decrease which will result to a lower emission from burning of these fuels. It is widely known that air emission from gasoline is harmful to the environment. Automobile usage produces a variety of externalities including local air pollutions (Parry, Walls, and Harrington, 2007). The vapors given off when gasoline evaporates and the substances produced when gasoline is burned (carbon monoxide, nitrogen oxides, particulate matter, and unburned hydrocarbons) contribute to air pollution (U.S. Energy Information Administration). The health effects of air pollution are serious – one third of deaths from stroke, lung cancer and heart disease are due to air pollution (World Health Organization, 2018). The purpose of this study is now then to see if excise tax imposed on petroleum products has an effect on the level of air pollution in the Philippines and to find out how extent the effect of changes in excise taxes to the level of air pollution.

There have been many studies conducted to find out how effective taxes are in reducing air pollution. Bruvoll and Larsen (2004) analyze the effect of carbon taxes on emissions change in Norway by using an applied general equilibrium simulation. They found that carbon taxes had a modest effect on the reduction of CO₂, contributing to a 2% decrease. Liang et al. (2007) arrive at the same conclusion after using a CGE model to evaluate the impact of different carbon tax scenarios for China. In a forecast study on the effect of energy and carbon taxes on the energy system in Japan, Nakata and Lamont (2001) support the idea that these taxes are a suitable instrument for reducing CO₂ emissions. Wissema and Dellink (2007) studies the Irish case and finds that a reduction of 25% relative to the 1998 level of CO₂ can be achieved with a carbon tax of 10 to 15 euros per ton of CO₂. Di Cosmo and Hyland (2011), also taking into account the Irish case, use different tax scenarios to look at impacts on energy demand and carbon dioxide emissions. With a scenario of carbon tax increase from 21.5 euros in 2012 to 41 euros in 2025, the authors find that CO₂ emissions will be reduced by 861,000 tons relative to a zero carbon tax scenario. Sterner (2007) supported by explaining that carbon emissions are cut more than half by introducing high fuel taxes and the carbon content of the atmosphere is reduced by more than 1 ppm. Moreover, by imposing taxes on fuels, consumption of such fuel will decrease thus resulting to less harmful emissions from burning of these fuels. The study of Li, Linn, and Muehlegger, (2012), shows that a tax increase reduces gasoline consumption. The decrease of this gasoline consumption would then result to a lower emission of pollutants that increases air pollution. Further studies of Davis (2008) and of Li, Lu, and Wang (2011) states that enforcing more stringent fuel standards will result to a significantly improved air quality. Furthermore, Kahn (1996) as well as Kahn and Schwartz (2008) found that government regulation have significantly reduced the regional air pollution caused by driving. Studies have shown that by regulating the consumption of fuels, i.e. taxes imposed on them, will affect the quality of air and the level of air pollution.

Most of the studies related to the effectiveness of excise tax on petroleum products in lessening air pollution are done outside the country. They focus on whether taxes imposed on these petroleum products have an impact on the air quality and the level of air pollution. The significant differences between this study and those mentioned studies are this study will look into the effectiveness of excise tax imposed on petroleum products on lessening the level of air pollution in the Philippines, this study will also focus on the impact of the increase or decrease of excise taxes imposed on petroleum products on the level of air pollution, and this study will focus in determining if regulations imposing excise taxes is really the major factor that affects the level of air quality and air pollution in the Philippines.

The result of this study can be used as basis for the legislators in implementing tax legislations on petroleum products. Legislators could also use the result of this study into assessing the current tax legislations and to use it to improve the current set of tax legislations. Furthermore, organizations, both governmental and non-governmental, that are responsible for protecting our environment can use this as basis for assessment and for improvement of the current state of our environment. Various health-related sectors can also use this as basis for future actions for the improvement of the health level in our country. Lastly, traders of petroleum products can also benefit by acquiring information from the result of this study.

Conceptual Framework

This study aims to understand the relationship between the excise tax rates on petroleum products and the level of air pollution.

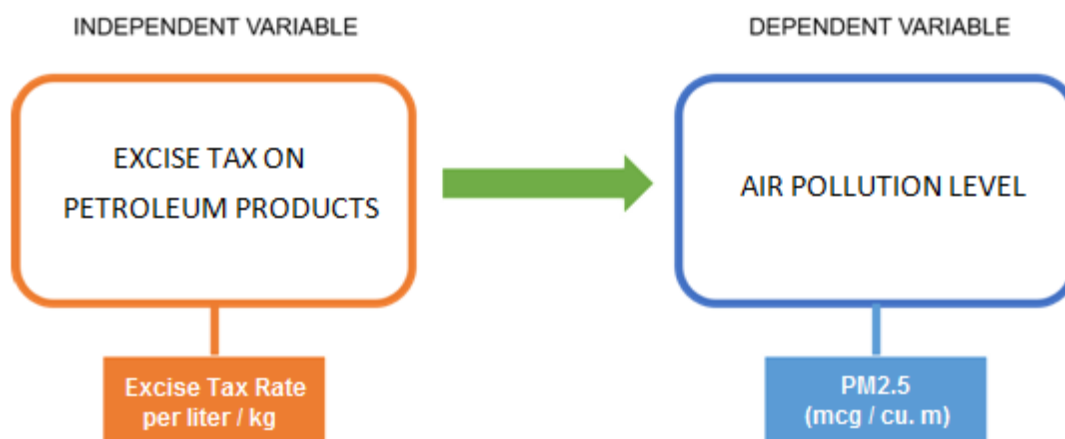


Figure 1. Conceptual Framework

Miller and Vela (2013) conducted their study about the effectiveness of environmental-related taxes. They formulate a hypothesis that countries who have high environmental-related taxes have a lower levels of pollution. They state that when countries implement tax on a certain good, the price of these goods will increase with the tax thus resulting to low production of these goods which could lessen the air pollution. Their studies conclude that countries with high levels of environmental-related taxes have lower emissions including CO₂. Furthermore, they also conclude that environmental-related taxes are effective in reducing pollution. This study will supplement and make use of the theory of Miller and Vela that environmental-related taxes are effective and a high environmental-related taxes will result to a low level of pollution.

This study will test whether a high excise tax on petroleum products will result to a lower level of air pollution and whether this taxes is effective in lessening air pollution level.

The independent variable of this study is the excise tax specifically the different rates of per liter or kilogram of excise tax in petroleum products. The rates of these taxes are obtained from the National Internal Revenue Code and past Revenue Regulations obtained from BIR. The dependent variable is the air pollution level. Since there are many ways to measure air pollution, we specifically choose PM_{2.5}. PM_{2.5} is a particulate matter that has a diameter of less than 2.5 micrometers which is about 3% of the diameter of a human hair. They are fine particles that are mostly composed of combustion particles. They are also the most dangerous of all the sizes of particulate matter because it has a very high chance of being inhaled due to them having very small sizes. The data of PM_{2.5} levels are obtained from the reports of Environmental Management Bureau of the Department of Environment and Natural Resources and from the Global Burden of Disease Study of Brauer, et al (2010).

II. RESEARCH DESIGN AND METHOD

The process used in this study in gathering data is exploratory data analysis or commonly known as data mining. It is the process of sorting large sets of data to identify trends and establish relationships to solve problems through data analysis. From the data gathered, we make use of Pearson-Rho correlation to determine the relationship of the two variables and to test our hypothesis.

The data used in this study are gathered from the different reliable sources. The tax rates are obtained from the National Internal Revenue Code. The researchers opted to use PM_{2.5} instead of the Total

Suspended Particles in general since most of the major factors of PM_{2.5} are petroleum products thus making it more relevant for conducting research. The PM_{2.5} data are gathered from the reports of Environmental Management Bureau (EMB) of the Department of Environment and Natural Resources (DENR) and from the Global Burden of Disease Study of Brauer, et al (2010). From these gathered data we make use of linear regression to come up with the trends and graphs. In determining the relationship of the two variables and to test our hypothesis, we use the Pearson-Rho correlation. The conclusion of this study is made from the results obtained from these data.

This study assumed that (1) PM_{2.5} found in the air is the best variable to measure air pollution, (2) PM_{2.5} is only composed of combustion particles which comes from burning fuels since according to studies most of PM_{2.5} particles are combustion particles, (3) the data gathered from the reports of EMB, which comes from different monitoring stations in the Philippines, is accurate and representative of the entire area in the Philippines, and (4) the PM_{2.5} data in the years 1990, 1995, 2000, and 2005 is reliable, accurate, and can be made use to represent the levels of PM_{2.5} for the years 1990-2005.

III. RESULTS AND DISCUSSIONS

The table below summarizes the data gathered about the excise tax rates of different types of petroleum products based on the tax code released by the Bureau of Internal Revenue (BIR). These data are gathered through data mining.

The first column presents the different types of petroleum products subjected to excise tax rates. The second to the last column shows the different tax rates per liter or kg imposed on these products at different effective years.

Excise Tax Rate per Liter/kg			
Type of Petroleum Product	1996-2004	2005-2017	2018-present
Naphtha and Regular Gasoline	4.80	4.35	7.00
Unleaded Gasoline	4.35	4.35	7.00
Aviation Turbo Jet Fuel	3.67	3.67	4.00
Kerosene	0.60	0.00	3.00
Diesel	1.63	0.00	2.50
LPG	0.00	0.00	1.00
Bunker fuel oil	0.30	0.00	3.50
Average	2.19	1.77	4.00

Table 1. Excise Tax Rates per Liter/kg of the Different Types of Petroleum Products

The following figure and onwards presents the results of the data gathered from data mining using various analytical tools (i.e. Linear Regression Analysis and Pearson-Rho Correlation) and is administered together with its analysis and interpretation.

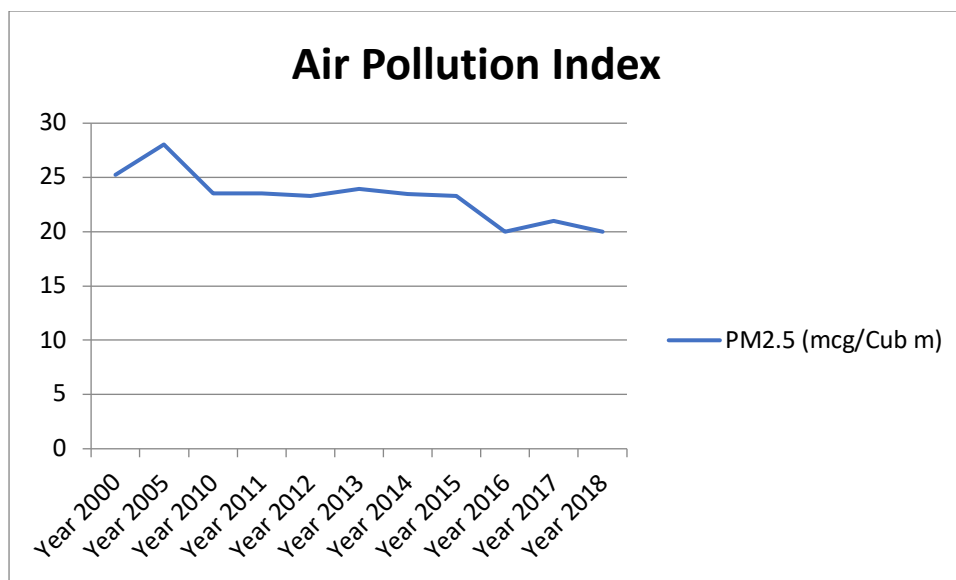


Figure 2. Air Pollution Index of Philippines

From the various data gathered about the level of PM2.5 in the Philippines, we come up with these trend or graph by using linear regression. The trend is slowly moving downward or the level of PM2.5 is slowly decreasing over time. This means that the level of air pollution is decreasing and the air quality in the Philippines is becoming better for the past years.

Since PM 2.5 comes primarily from combustion, one of the possible factors of this trend is the increase in excise tax on petroleum products over the years. Also, other possible factors aside from excise tax which could lessen the consumption of petroleum products are the increasing net of excise tax prices of petroleum products and other government regulations that may limit the consumption of petroleum products. Aside from the aforementioned factors, banning of lead gasoline which has the dangerous combustion of chemicals and improvement on the smoke belchers and engines of vehicles also affect the level of air pollution. The government also took other actions to improve the air quality in the Philippines such as Republic Act 8749 which is the Philippine Clean Air Act of 1999, banning the use of charcoal and firewood for cooking in some areas in the Philippines, reducing industrial emissions, phasing out vehicles over 15 years old, banning incineration, and drastically increasing fines for the owners of polluting vehicles.

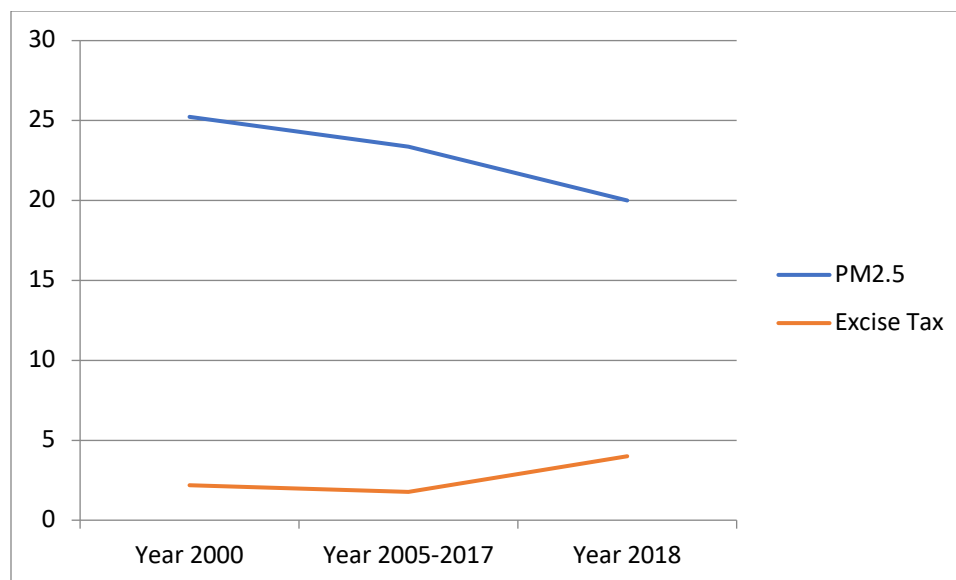


Figure 3. Correlation between the Increases in Excise Tax Rates to the Air Pollution

The figure above demonstrates the correlation between the increases in excise tax rates with air pollution. The graph is made through using the line graph from the data gathered.

The graph above shows that the level of PM2.5 is decreasing while the excise tax rates are increasing. This means that the relationship between the excise tax rates and the level of PM2.5 in the air is inverse.

Therefore, the graph proves that the increase in excise tax rates in petroleum products is one of the factors of the decrease of the level of PM2.5 in the air. This is mainly because one of the major sources of PM 2.5 comes from car engines. When excise tax rates increase it is expected that the price of the petroleum product would also increase and this may be unfavorable for some car users. Hence, the increase in excise tax rates on petroleum products would result to a lesser usage of cars since buying the product would need additional cost.

Hypothesis Testing for the Relationship of the Excise Tax and the Production of Pollution

Correlations

Pearson correlation	-0.857
P-value	0.344

Using the Pearson-rho correlation, the nature of the relationship between the two variables was found to be negative. This inverse relationship can be translated as “as the excise tax value is increased, there is a good tendency of the recorded pollution decreased. This is indicated by the Pearson value of 0.857. However, due to the limitations of the data available from the data banks, the researchers cannot reject the null hypothesis ($p=0.344$ not less than 0.05) of no significance at 0.05 level of significance. This is because of the limitations of the available data of the air pollution index in the Philippines.

In finding the relationship between the excise tax rates and air pollution index, the proponents should gather enough data. Raw data of at least two to three years would be sufficient to serve as a representation for a particular range. However, for the years 1996-2004, only data for the year 2000 is available. This is indicative that more information should be publicly available to provide better and sufficient evidences to backup the claim of the significant effect of excise tax towards lowering the pollution.

According to Jurušs Māris and Brizga Jānis (2017) on their journal entitled “Assessment of the Environmental Tax System in Latvia”, Latvia uses a number of indirect subsidies to encourage pro-environmental behavior of households and firms, for example exemption from excise duty on biofuel to stimulate the use of alternative fuel; differentiated tax rates for leaded and unleaded petrol; electricity produced from solar, wind or other renewable energy recourses are exempt from the electricity tax to stimulate the production and use of alternative energy. Moreover, the car-registration and car-circulation taxes are calculated based on their CO₂ emissions or motor volume for older cars (first registered before the year 2009), with vehicles with higher emission levels charged a higher rate. Despite this, EEA (2014) has found that new passenger cars in Latvia have the highest CO₂ emissions in the EU. However, the carbon intensity of new commercial vehicles is very close to the EU average.

According to Sabina Hodžić and Vjekoslav Bratić (2015) on their journal entitled “Comparative Analysis of Environmental Taxes in EU and Croatia”, environmental taxes can also influence on the behavior of economic entities and natural persons, aiming to improve and/or prevent negative environmental impacts and provide benefits such as economic incentive to reduce pollution and resource use. As stated in Abdullah and Morley (2014) "the approach to environmental taxation in the EU has concentrated on the use of taxes to improve the environment, whilst using the revenue rose to reduce the distortionary taxation on labor and production. This policy is often regarded as producing a double effect whereby the environment is improved and at the same time the economy benefits through reduction in these distortionary taxes. Croatia implements the following eight basic types of environmental taxes and charges: special motor vehicle tax, excise duty on electricity, excise duty on natural gas, excise duty on solid fuels, charges for environment pollutants, charges for the environment users, charges for environmental impact of waste and special environmental charge for motor vehicles. Charges for environment pollutants include charges for the environment emissions and a special annual charge for greenhouse gas emissions. Charges for environment emissions include carbon dioxide charges (CO₂ emission), sulphur oxide as sulphur dioxide (SO₂ emission), and nitrogen oxide as nitrogen dioxide (NO₂ emission). They are calculated and paid according to the quantity of emission in tons, and payers include both legal and natural persons that own or use a single source of CO₂, SO₂ and NO₂ emissions in the framework of their business activities. Special annual charge for greenhouse gas emissions is charged to legal and natural persons that own or use a single source of CO₂, emission in the framework of their business activities. Based on a decision issued pursuant to special regulation governing air protection, CO₂ has been excluded from the emission trading system. Upon accession to EU, Croatia had to amend Act on special tax on motor vehicles and to introduce motor vehicle taxation system based on carbon dioxide emissions.

IV. CONCLUSION

It is evident from the findings that excise taxes on petroleum products affect the level of air pollution. Excise taxes on petroleum products are one of the reasons on the decrease on consumption of petroleum products which would lessen the level of PM 2.5 suspended in the air.

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An Analysis on the Effect of El Niño Southern Oscillation (ENSO) Cycle to the Profitability and Marketability of Fishing Businesses Listed in the PSE

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Abstract – This study determines whether the El Niño Southern Oscillation (ENSO) Cycle has a significant effect on the profitability and marketability of fishing businesses listed in the Philippine Stock Exchange (PSE). The data consist of the Oceanic Niño Index (ONI) in the year 2018 as one of the means to measure El Niño and the financial information of two fishing businesses listed in the PSE. Regression analysis is used to test the assertion of the study. The study revealed that the ENSO cycle has a direct but insignificant effect on the profitability and an indirect and insignificant effect on the marketability of fishing businesses listed in the PSE.

Keywords: El Niño Southern Oscillation, return on assets, price-earnings ratio, Oceanic Niño Index, PSE

I. INTRODUCTION

Philippine businesses are one of the many sectors that are affected by rapid changes in climatic conditions. The global impact of climate change could stimulate changes in international and domestic commodity prices, having negative effects on the country's overall economy (International Food Policy Research Institute). According to the United Nations Food and Agriculture Organization (UN FAO), changes in climate cause fluctuations in production systems and compromises food security. Because of these possible effects, businesses in the Philippines are then warned ahead to set ways of measure that can help in facing sudden situations. Industries believed to be directly affected by climatic conditions such as agriculture and fisheries often became the sources to study and evaluate financial performance amidst external factors. Multiple kinds of research are conducted to know whether or not the environment does have an impact on business' profitability, marketability, and industry performance. A study of Spiele entitled "The Effect of El Niño on Stock Markets" revealed that a climatic condition such as the El Niño phenomenon impacts the macroeconomy and stock markets. On the contrary, Laosuthi and Selover's "Does El Niño Affect Business Cycles?" revealed that national economies are insignificantly affected by this climatic condition. Nevertheless, external factors' contribution to businesses' decision-making and risk management is important in order to apply appropriate measures whenever these phenomena happen.

According to F. Hilario et. al, El Niño Southern Oscillation (ENSO) highly influences the climate of the Philippines. ENSO or ENSO Cycle is the fluctuation of oceanic and atmospheric temperature (National Oceanic and Atmospheric Administration, 2018). It has its share in the positive and negative effects of the environment on businesses. In one of the studies entitled "Impacts of El Niño Southern Oscillation on the Wheat Market: A Global Dynamic Analysis", Gutierrez stated that a stronger and negative impact on wheat yield anomalies was observed from La Niña than El Niño. Here it was emphasized how important the extremes of ENSO Cycle – the El Niño and La Niña – to the worldwide wheat market. On the other hand, a study on the impact of climate variability on rainfed cereal yields in Iran revealed that rainfed cereals are not impacted strongly by temperature-related stresses but there was a significant effect of high temperature on crop yields during dry crop seasons. The implication of this is that with the unexpected occurrence of ENSO, it is important to have adaptive options and supplemental management

practices to maintain the ideal financial performance of a business, that is, at par with the industry performance during that certain period. When these products are affected by the change in climatic conditions, a domino effect to businesses involving these products will happen. The productivity of certain businesses affected by the El Niño or La Niña will now be on the negative side, assuming preventive measures were not implemented ahead of the occurrence of the phenomena. However, a study of Tack and Ubilava (2013) contradicts the idea of ENSO significantly affecting some agricultural products. They concluded the effects of global climate on agriculture are not just affected by temperature and precipitation alone. This further implies that the accumulated effects of changes in climatic conditions are what cause impacts to certain parts of the industry.

Aside from agriculture is one of the industries directly affected by ENSO, fishing businesses as well are equally affected. According to Yap (1999), fisheries is one of the drivers of the Philippine economy being an archipelago that has more water than land. Moreover, the Philippines sits in the global center of marine biodiversity (Carpenter and Springer, 2005). This implies that a number of industries are into fishing businesses as well. A study of Villanoy et. al (2011) shows how ENSO affects the marine industry. It states that El Niño positively affects the production of sardines since it showed that the highest landed happened during some El Niño years. This is because the upwelling that is beneficial to sardines and other plankton-feeding species were enhanced. This will cause the productivity of sardines to increase, thus, increasing as well the profit of business involved in selling the product. However, this cannot be an indicator of whether or not industry performances of fishing businesses are also positively affected since it only involves a portion of a bigger picture. Few studies like that of Pinaya et. al states that the climatic variability of the Lower Amazon has a direct effect on fish catch and consequent productivity. Moreover, environmental variables such as the air, water level, and atmospheric humidity as well as climatic variables measured indexes act at different scales promoting effects on the fisheries in the said region. Results also show that during drought, the accessibility to lakes for fisheries was more difficult, eventually stimulating fish activity and increasing productivity in the river environment. A study entitled “ENSO Impact on Tuna Fisheries in Indian Ocean” stated that ENSO is an important driver of interannual variations in climate and ecosystem productivity in tropical regions (Kumar et al., 2014). In this study, maximum tuna landings were recorded during a weak El Niño and La Niña year while the lowest tuna landings were recorded during a strong El Niño and La Niña year. Results show that sea surface temperature creates the greatest role in determining tuna availability in the region. Further, it confirms that ENSO creates an impact on climate, tuna abundance, and production in the Indian Ocean. Most of the studies involving the marine industry only look into how abundant are the fishes in the ocean during the wake of El Niño and La Niña such as that of Damatac II and Santos (2016) where they stated that El Niño causes larval transport and sensitivity to salinity changes.

With the continuous occurrence of El Niño and La Niña phenomena, it is important to know whether or not the effects of these phenomena will be significant enough for the people in the business sector to consider this in their decision-making and risk management. Most studies are focused on the agriculture side of the industry when in fact, fishing businesses are just equally affected by it. Studies on marine industries and their financial performances are somewhat set aside. Thus, this study aims to focus on how these phenomena will significantly affect fishing businesses’ financial performance, and whether or not appropriate measures are needed to avoid its negative impacts on these businesses.

Conceptual Framework

According to Spiele (2016), El Niño affects not just the macroeconomy but also the stock market. This further explains that the occurrence of such phenomena influences changes in company standing and performance in the industry. The diagram shows two financial ratios – the ROA and Price-Earnings Ratio – that are used in measuring a company's performance in terms of income and value of a stock. By connecting the effect of ENSO, using its indicator which is the ONI, to these financial ratios, we evaluate whether it significantly affects the aforementioned ratios.

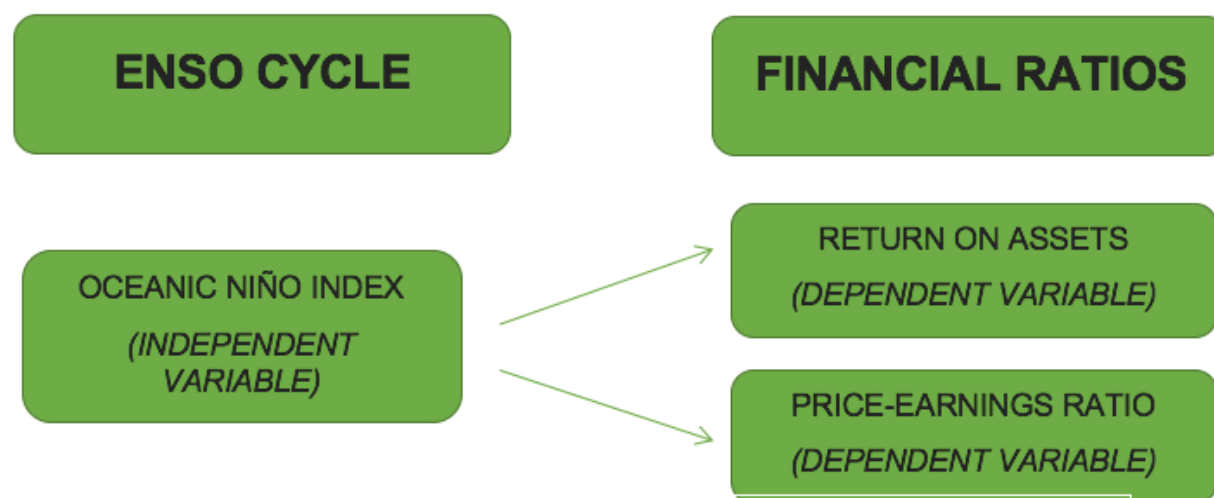


Figure 1

The variables of the study are explicitly presented above. The illustration shows the key concepts of the study: (1) ENSO cycle and (2) financial ratios. The ENSO cycle is a scientific term that describes the fluctuations in temperature between the ocean and atmosphere in the Pacific. ENSO naturally swings between three key phases: El Niño, Neutral and La Niña.

The Oceanic Niño Index (ONI) developed by the National Oceanic and Atmospheric Administration (NOAA) is used as the principal measure for monitoring, assessing and predicting ENSO. The ONI is calculated as the three-month running-mean values of sea surface temperature (SST) departures in the Niño 3.4 region. This running three-month average is compared to a 30-year average. The observed difference from the average temperature in that region—whether warmer or cooler—is the ONI value for that 3-month "season." Based on the ONI, the El Niño and La Niña are defined as follows:

El Niño is characterized by an ONI of greater than or equal to $+0.5^{\circ}\text{C}$, indicating the east-central tropical Pacific is significantly warmer than usual.

La Niña is characterized by an ONI of less than or equal to -0.5°C , indicating the region is cooler than usual.

For it to be classified as such, these conditions must be satisfied for a period of at least five consecutive months.

According to the study entitled "The Effects of Climate Change on World Aquaculture: A Global Perspective," there are drivers of climate-related change in aquaculture production systems namely: changes in air and inland water temperatures, changes in other oceanographic variables, sea level rise, increase in frequency or intensity of extreme events, and water stress and such drivers create operational changes. It brings about changes in infrastructure and operation costs, expanded geographic distribution and range of aquatic species for culture and changes in production levels. As El Niño and La Niña events have real and profound effects on communities, businesses, and the natural resources—including our economically valuable fisheries and coastal habitat, the study focuses on the fishing industries which are listed in the Philippine Stock Exchange and used data on their quarterly assets, income, and stock prices. These businesses are primarily engaged in tuna processing, canning and exporting. The researchers look at

the companies' respective Return on Assets and Price-Earnings ratios as a measure of their profitability and marketability.

ROA is a type of profitability ratio that measures the percentage of a company's net income in relation to its overall resources. It is the most effective measure to assess businesses' performance -- how it can convert its investments in assets into profits. It is computed using the following formula:

$$\text{ROA} = \frac{\text{Net Income}}{\text{Assets}}$$

By computing the quarterly ROA of each company, it can be used to determine on what the company is performing or what alternative ideas if such changes in ONI arises either increases or decreases of the selling prices or increase or decrease in the production cost. Therefore, it measures the company performance for each quarter. The ROA percent is a baseline that can be used to measure the profit contribution required from new investments. As such it identifies the rate of return needed to at least maintain current performance and can be used to establish a hurdle rates all new investments must meet for approval. This allows analyzing a company's asset management and the opportunity to redeploy the assets in the future (M. Siminica, D. Circiumaru, D. Simion).

Price-Earnings Ratio is a financial ratio used in measuring the marketability of a certain company. It measures how valuable a company's stock is. It helps in letting investors determine whether a company is financially sound and offers a good return on investment. It is computed using the following formula:

$$\text{P/E Ratio} = \frac{\text{Price per Share}}{\text{Earnings per Share}}$$

By computing the quarterly P/E Ratio of each company, it can be used to determine what the investor will do during changes of ONI. Either invest more or sell such shares to the market.

Assuming that other things are constant during the conduct of the study, it will be possible to correlate these variables and confirm that there is a relationship that exists between them. A correlation analysis will show whether this relationship is significant or not.

This study proposes the following hypotheses for the relationship between the Oceanic Niño Index and the Return on Asset and Price-Earnings ratios:

1. ONI will not directly and significantly affect the Return on Asset
2. ONI will not directly and significantly affect the Price-Earnings Ratio

II. RESEARCH DESIGN

A Correlational Design is done by the researchers to explore the relationship between the effect of the El Niño Southern Oscillation cycle and the financial ratios using statistical analysis. For research purposes, companies related to the fishing industry listed in the PSE under the industrial sector has been chosen to be the premier subjects of this study.

To begin with, the researchers determined how to measure El Niño and La Niña. Information coming from the Climate Prediction Center monitors this phenomenon by Oceanic Niño Index. Oceanic Niño Index (ONI) is the National Oceanic and Atmospheric Administration's primary indicator for monitoring El Niño and La Niña. The year 2018's data was chosen as the best year to conduct the study since the three situations: Fair, El Niño, and La Niña are present.

Thereafter, the researchers gathered the fishing industry-related companies listed in the Philippine Stock Exchange. Financial statements for the year 2018 of these companies were studied and filtered to structure the correlation of the ratios.

Quarterly Net income and Total Assets of the year 2018 were accumulated to form the Return on Asset. To get the price-earnings ratio, records of the stock prices of Alliance Select Foods International,

Inc. (ASFII) and Century Pacific Food, Inc. were taken from Investagrams, an online stock market. The available data presented in the PSE only included ratios based on the annual financial statements submitted. Since the research uses data about the financial statements per quarter, the researchers manually computed the Earnings per share and Price-Earnings Ratio using the financial statements submitted per quarter. To ensure quality control, the researchers did a check and re-check method assigning two different people to fulfill the task.

Subsequently, the average for every phenomenon was computed and loaded in the Minitab; a primary tool used for analyzing research data. Furthermore, in establishing the variables of ONI, the researchers have identified three classifications (events) – fair climate, the state of El Niño, and the state of La Niña.

With the data at hand, the researchers have deemed Linear Regression as the most appropriate research instrument for we would want to predict the value of the ratios based on the value of ONI. With that, the relationship between the Oceanic Niño Index and the profitability and market ratio can be determined.

Moreover, with the help of Regression Analysis, the researchers were able to derive the relationship between the Oceanic Niño Index and Return on Asset and Price-Earnings Ratio. Additional information such as the P-value and R-square was also garnered to determine the significance of the results and its predictability.

III. RESULTS AND DISCUSSIONS

To determine the phase in the ENSO cycle, whether it is an El Niño or a La Niña, figure 2 presents the Oceanic Nino Index (ONI). For the year 2018, the 1st quarter indicates La Niña for they manifest an index less than or equal to -0.5°C while the 2nd and 3rd quarter shows a neutral climate condition. The last quarter, on the other hand, conveys the state of El Niño for it has an index of greater than or equal to $+0.5^{\circ}\text{C}$.

2015	0.6	0.6	0.6	0.8	1.0	1.2	1.5	1.8	2.1	2.4	2.5	2.6
2016	2.5	2.2	1.7	1.0	0.5	0.0	-0.3	-0.6	-0.7	-0.7	-0.7	-0.6
2017	-0.3	-0.1	0.1	0.3	0.4	0.4	0.2	-0.1	-0.4	-0.7	-0.9	-1.0
2018	-0.9	-0.8	-0.6	-0.4	-0.1	0.1	0.1	0.2	0.4	0.7	0.9	0.8
2019	0.8	0.8	0.8									

Figure 2: Oceanic Niño Index

As the Oceanic Niño Index increases, the pressure from the atmospheric arises. Therefore, reducing the nutrients and slowly not able to restock the aquaculture areas with cleaner waters that can kill fisheries. Another instance is the decrease of the Oceanic Niño Index, in which case pressure from the atmospheric decreases. Therefore, more growth for the plants and animal species as it decreases (Damatac II and Santos).

In relation to the research, the premier subjects of the study which are companies under the fishing industries listed in the PSE. The data used are from two companies related to fishing industries listed in the PSE as of the year 2018. The data that was gathered were computed by us, analyzed and scrutinized, and the amount illustrated is in dollars.

First Fishing Company

Table 1: Return on Asset			
2018	Net Income	Total Assets	Return on Asset
1 st quarter	1,305,027	74,937,069	1.74%
2 nd quarter	1,035,971	77,634,133	1.33%
3 rd quarter	1,023,817	81,451,769	1.26%
4 th quarter	2,603,149	77,038,652	3.38%
Average			1.93%

Table 1 presents each quarter Return on Asset. For the 1st Quarter in which La Niña occur up to the 3rd quarter where Neutral climate pattern is happening, it shows a positive Return on Asset in which case the company is still able to convert the investment into income. However, it is in a decreasing form because of an increase in demand which pertains to lesser selling prices for the inferior goods. But for the Last quarter, it increases rapidly in which El Niño happened. It was able to maximize its assets in order to convert higher income than any other quarter. Therefore, there is a presumption that during El Niño, the company will have a higher income because of less demand but the prices for the commodity arises (Messick, E. M., 2007). But if we look closely, it still gathered an average Return on Asset is 1.93%. The company is still able to have positive successfully gathered there assets into income.

Table 2: Price – Earnings Ratio				
2018	Price per share	Outstanding Shares	Earnings Per Share	Price - Earnings Ratio
1 st quarter	0.60	2,499,712,463	0.000522071	1,149.27
2 nd quarter	0.60	2,499,712,463	0.000414436	1,447.75
3 rd quarter	0.82	2,499,712,463	0.000409574	2,002.08
4 th quarter	1.01	2,499,712,463	0.001041379	969.87
Average			0.000596865	1,392.24

The 1st quarter up to the 3rd quarter shows that investors are willing to pay as La Niño reverts to becoming Neutral Climate, which results to having a high expectation for future earnings because of the positive performance that in a increasing phase. However, it is a riskier investment having too much expectation from the company but if such expectation meets better benefit for investor because the more risky, the more returns. But for the 4th quarter, it decreases suddenly because of low profit performance which means investor will have doubt for current and future performance of the company. This will also help investor use as a starting point for purchasing stock and eventually can be used to sell it in the market as it changes when the value increases. However, an extremely low market dividend yield provides a reliable forecast of future declines in stock market (Campbell and Shiller, 1998, 2001). But overall, the Price-Earnings Ratio average is in positive. Therefore, the investor or owner of such shares can still have a favorable income even when holding such shares either during La Niña, Neutral and El Niño.

Table 3: Statistical Results			
Pairwise Regression	Coefficient (+ , - , 0)	P-value	R-square
ONI vs. Return on Assets	0.2250	0.0193	0.0506
ONI vs. Price - Earnings Ratio	0.0573	0.9950	0.0033

The Statistical Results table indicate that the Correlation Coefficient is a small positive relationship between the ONI and ROA. It can say that an increase of ONI increases the other Return on Assets because of the selling price increases resulting in more income earned with the same level of assets. Thus, net income is increasing phase.

The Price-Earnings Ratio is directly affected by ONI. However, it only has a low percentage increase because the company selected is a subsidiary that when an event of lacking supply occurs. The company can ask help to import goods from its parent company. Thus, an increase in income is still visible; however, it is counter partied by additional cost for the shipment of the imported materials.

The P-value on the ONI vs. Return on Assets of 0.0193 indicates strong evidence to reject the null hypothesis. This further implies that there is a significant difference between the specified populations. The P-value on the ONI vs. Price-Earnings Ratio indicates weak evidence to reject the null hypothesis. In this case, the null hypothesis is accepted. An insignificant difference between specified populations can then be inferred. Since a high percentage of P-value was computed, such data are related and enough for the study.

The R-Square is a statistical measure of how close the data are to the fitted regression line. The results for the ONI vs. Return on Assets and Price-Earnings Ratio depicts that the reliable resources gathered are limited. Therefore, such an independent variable cannot properly explain the variance to its dependent variable and more information is needed to have a higher rate.

Second Fishing Company

Table 4: Return on Asset			
2018	Net Income	Total Assets	Return on Asset
1 st quarter	732,317,804	25,000,974,858	2.93%
2 nd quarter	838,936,140	27,135,353,797	3.09%
3 rd quarter	797,837,871	28,468,847,367	2.80%
4 th quarter	2,834,272,860	30,337,302,380	9.34%
Average			4.54%

Table 4 presents the changes of Return on Assets, Observed that during La Niña and Neutral Climate Pattern, The changes vary differently. So, it concludes that such a climate pattern does not really affect or some other factor can be used. However, for the 4th quarter which occurrence of El Niño, a rapid increase in the return on assets. Products being inferior goods will result in a higher selling price than the usual. Therefore, more income generated but demand decreases because of changes in price with the same pattern of using assets. In its average, Return on Asset is 4.54%. With that, we can conclude that for every dollar of investment, there is a return of 4.54 cents in net profit for the year 2018. Thus, there is successful management of such an asset because of they still able to generate higher income even though lesser demand from the consumer.

Table 5: Price - Earnings Ratio				
	Price per share	Outstanding Shares	Earnings Per Share	Price - Earnings Ratio
1 st quarter	16.22	3,542,258,595	0.21	78.46
2 nd quarter	16.56	3,542,258,595	0.24	69.92
3 rd quarter	14.94	3,542,258,595	0.23	66.33
4 th quarter	14.13	3,542,258,595	0.80	17.66
Average			0.37	58.09

As seen in Table 5, there is a decrease in price per share as it heads to the end of the year. For the first quarter, it has the best Price-Earnings ratio but it suddenly decreases as ONI rises or when there is El Niño event coming. An investor will find out that during the rises of ONI, the price per share decrease that they can purchase shares at a low cost during such and sell it sooner during La Niña because it has more value than during upcoming El Niño. In addition, in the 4th quarter, there is a sudden decrease which can be a key factor to look out. Company will be able to found out that the company was not able to perform accordingly that a sudden downfall of Price-Earnings Ratio which results in poor current and maybe the basis for future performance of the company. Although the average price to earnings ratio is 58.09 for the year 2018. It is still better to look into the account as of El Niño days because it is a doubtful quarter.

Table 6: Statistical Result			
Pairwise Regression	Coefficient (+ , - , 0)	P-value	R-square
ONI vs. Return On Assets	0.6820	0.0193	0.4652
ONI vs. Price - Earnings Ratio	-0.7896	0.9762	0.6235

As illustrated, the increase of ONI has a direct effect on Return on Assets of the Second Company selected. ONI increases would mean lesser supply due to the temperature not favorable for fishes. The company tends to increase market prices that would be generating higher income but will mean fewer buyers than before. Company has no other alternative when there is low supply because such company is not into importing materials. Therefore, no cost is added so only the price of such commodity increases which raises the Return on Assets during increases of ONI. That is why the effect of the first company is different from the second company.

There is an inverse effect of Price-Earnings Ratio to the ONI. Although, Income increases but the market prices are slowly dropping that would mean the company is not good in performing such duties during rises of ONI because they raise selling prices which are not favorable for consumer and unlikely to purchase goods.

It also means that share prices change because of supply and demand. If more people want to buy a stock (demand) than sell it (supply), then the price moves up. Conversely, if more people wanted to sell a stock than buy it, there would be greater supply than demand, and the price would fall (Investment industry regulatory organization of Canada). There is an increase in income but a decrease in stock price. Having said that, harvest decreases but prices for such fish increases because of lesser supply and more demand.

The p-value on the ONI vs. Return on Assets indicates strong evidence to reject the null hypothesis since it shows a result of less than 0.05. This further implies that ONI does significant difference affecting its ROA. The p-value on the ONI vs. Price-Earnings Ratio indicates weak evidence against the null hypothesis. This further implies that ONI does not significantly affect the P/E Ratio.

The results for the ONI vs. Return on Assets depicts that the reliable resources gathered are limited. The model explains ratios have the capability to express what its variance is to the ONI. The commitment of errors is highly probable. Therefore, additional information is needed.

IV. CONCLUSION

With the rapid change in climate and weather conditions affecting businesses' financial ratios, it is important to assess and evaluate how these companies respond to the possible effects of these phenomena. This study aims to determine whether or not ENSO Cycle has a significant effect on the return on assets and price-earnings ratio of fishing businesses listed in the PSE. Based on the results, ENSO Cycle does have an indirect relationship with significant effect on fishing businesses listed in the PSE when it comes to the relationship with the Price-Earnings ratio. Such data can be used to learn the pattern of stock changes for the users. However, it is not the case when company look into the Return on Assets, data regarding increase in income or decrease in assets is insufficient. This is because ENSO is not the only factor that affects the income and the assets.

A study by Shelton AO, Mangel M. entitled "The Fluctuations of fish populations and the magnifying effects of fishing" had a final assumption about the structure of environmental variation. The study had examined a range of environmental variability, from modelling sequential years independently to including a positive lag-one autocorrelation in the environment. Previous investigators have shown that autocorrelation in the environment or in harvest rates can have important effects on the persistence, variability, and yield of populations.

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The Relationship between Sustainability Reporting and Financial Performance of Selected Universal and Commercial Banks in the Philippines

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Abstract – Banking institutions are pressured by their stakeholders to include sustainable practices as part of their organizational objectives after experiencing prodigal events that almost impaired the credibility and reputation of the industry. Researches have shown that financial performance in a different marketplace, including the banking industry, is influenced by sustainability reporting through improved branding and corporate image. This study aims to investigate the relationship between sustainability reporting and the financial performance of universal and commercial banks in the Philippines for the year 2017. Global Reporting Initiatives (GRI) sustainability reporting guidelines are used to evaluate how extensive the sustainability information reported. In this context, sustainability disclosures include information on good governance, economic, environmental, and social aspects. The financial performance is measured using quantitative indicators, namely: return on equity, return on assets, and net interest margin. This study conducted a correlational research design using Spearman rank-order and multiple regression analysis. The stakeholder theory provided the framework for this research study. The results indicate that sustainability reporting and the financial performance universal and commercial banks in the Philippines do not appear to be positively and significantly correlated. On this basis, the results suggested the regulators and the government should implement policies providing a standardized framework, like GRI guidelines, and imposed a penalty to non-conformance of published sustainability reports with this standardized framework. Further research is needed to guide business leaders in decision-making.

Keywords: sustainability reporting, financial performance, global reporting initiative sustainability reporting guidelines, universal and commercial banks, Philippines

I. INTRODUCTION

Sustainability has become the focus of global attention. In many countries, governments, businesses, and even the banking and stock exchange sectors have taken substantial steps to embed sustainable practices in their operations as a way to further contribute to and make a more significant difference in society. These steps include a clearer focus on green financing, environmental protection, biodiversity conservation, employee rights, promotion of economic sustainability, water efficiency management, and corporate and ethical governance, among others.

It is the desire for high-quality brand reputation and operational longevity that drives businesses to engage in sustainable development which helps commerce demonstrate its active participation in support of programs linked to social change, economic growth, ethical and good governance, and environmental preservation and protection. An organization can always excel, but taking responsibility for society and promoting sustainability will help it perform better financially (Investopedia, 2017). Furthermore, its stakeholders consider sustainable information a vital component in making purposive decisions and implementing corporate policies (World flavor, 2018). This being so, the mandatory reporting of sustainability has resulted in widespread improvements in many facets of the operation, along with areas of sustainable business in several countries (Ioannou & Serafeim, 2011). During the tracing of the mandatory sustainability report, a huge number of companies in New Zealand have agreed that sustainable development integrates their commercial strategies and considered it a best practice leading to better economic outcomes (Sustainable Business Council, 2017).

Countries maintain strict regulations on their financial sectors to ensure that the economy is stable and minimize the danger of a financial crisis. Without strict regulations, manipulation of banks and the financial sector can happen such as the one that led to the worldwide economic crisis in 2008 when

deregulation of financial sectors played a major role that caused it (Amadeo, 2017). Tight regulatory policies are indeed necessary to lessen the risk of recession in the future. In Jamaica, an enhanced regulatory power has protected its citizens from a massive impact of the 2008 worldwide financial crisis. (“The importance of financial sector regulation,” 2013). In addition to safeguarding against the financial crisis, the supervision of regulatory authority contributes as well to the profitability, efficiency, and stability of banking institutions in member countries of the European Union (Kufnerova, 2016).

In the Philippines, the relatively lax regulation and weak internal control in the sector of banking have resulted in several controversies. In 2016, the transfer of \$81 million to Rizal Commercial Banking Corporation (RCBC) from the Central Bank of Bangladesh was recorded as the biggest money-laundering scandal (Reuters, 2016). Another controversy involved a corrupt senior management official of Metropolitan Bank and Trust Company (Metrobank) who engineered the fraudulent release of P900 million to a fictitious account. In 2017, Bank of the Philippines Islands (BPI) experienced an unfortunate and upsetting system glitch that resulted in unauthorized transactions in the accounts of its depositors. In the first quarter of 2019, a foreign shipbuilding company declared bankruptcy and made the biggest corporate default. Loan exposure of \$412 million to five of the biggest banks (RCBC, Land Bank of the Philippines, Metrobank, BPI, and Banco de Oro Universal Bank) could impair their credit scores due to these weighty exposures (Caraballo, 2019). Banking scandals have seriously affected the credibility of banks and the economic status of the country. One precedent is the money laundering scam and internal fraud which resulted in a huge amount of penalty imposed against RCBC and Metrobank (Lucas, 2018; Schnabel, 2017). Reputations were compromised in the system glitch when account holders chose to deposit their money to other banks (Galolo, 2017). Bankruptcy and loan default do have a substantial influence on the employment rate of the country and financial losses are incurred by the exposed banks and the whole financial sector of the country (Kritz, 2019; Lopez, 2019).

This study focused on the relationship between sustainability reporting and the financial performance of universal and commercial banks in the Philippines. There are research studies in the Philippines that examine the sustainability reporting and practices of publicly listed companies, but none is concentrating in the financial sector. This study fills the research gap by focusing on sustainability reporting of the banking industry in the Philippines and its relationship with financial performance.

In this study, sustainability reports are evaluated based on Global Reporting Initiative (GRI) guidelines. GRI guidelines are considered as the most commonly used standard globally with the objective to standardize and quantify the environmental, social, and governance aspects derived from the operation of the reporting organizations. GRI guidelines also make sustainability reporting, such as the case of financial reports, measurable. The banks' financial performance is measured using the basic quantitative indicators, namely: return on equity, return on assets, and net interest margin. These financial performance indicators are the most commonly used determinants of the over-all performance achieved by banks because of their accessibility, ease of calculation, and simplicity of interpretation. Financial ratios such as return on assets and return on equity are used as indicators of a company's growth, success, and control. Net interest margin is the profitability ratio used by banks to measure the efficiency of decision-making in investment. In the Philippines, return on assets, return on equity, and net interest margin are mandated by the Central Bank to be included in the notes to financial statements.

The banking sector of the Philippines is composed of universal and commercial banks, thrift banks, and rural and cooperative banks. Universal and commercial banks, the largest financial institutions, offer the most extensive financial services in the Philippines. The banking sector ensures the stability in economic and social stability and sustainable growth of the economy by providing banking services to the general public and to business.

The Philippine government mandates publicly-listed companies to report information, particularly on environmental awareness and social responsibility. The interest to conduct this study is based on whether this information is correlated to the banks' financial performance or not. This study will increase awareness of existing policies in mandatory reporting for sustainability.

Review of Related Literature

Sustainability reporting has become the focus of the corporate environment because of the current needs of the stakeholders and business leaders who started to incorporate sustainability into their corporate routine. Applying the shared principle of corporate social responsibility and sustainability, stakeholders are both the main motivators and recipients of these green practices. Stakeholders, such as employees, are more likely to be satisfied if they are working in a company that extends support to environment and community. Satisfied employees are more productive, therefore, benefiting the company and its operation. Customer satisfaction is one of the goals of every company and customer service is essential for sustainable organization. Just like other stakeholders, customers and consumers prefer sustainable companies. Brands that are connected to sustainability increase consumer demands; thus, meeting these expectations strengthens the market presence of the company. Businesses engage in sustainability reporting either because they volunteered or are required to get involved. The strongest elements that drive businesses to sustainable development are pressure from stakeholders, increase in branding, regulatory requirements, and competitive advantage.

Sustainability reporting consolidated non-financial information of businesses, their views, and efforts to promote awareness on economic, environmental, and social issues. The commitment to sustainable developments builds a better connection with stakeholders. Sustainable business practices benefit companies in different ways such as company visibility, brand awareness, and reputational advantage. Corporate collapses and scandals can also be avoided or countered by engaging in sustainability and re-branding. Therefore, having sustainable business perspectives has huge impacts on the company's overall performance, global economic progress, environmental preservation, biodiversity, human rights, equality, and social balance.

The absence of standard guidelines may lead to selective disclosures in which merely good news will be disclosed and negative issues will be concealed. The uniformity and comparability of sustainability reporting across the industry will not be achieved. Despite the fact that there is still no common framework in preparing sustainability reports in the Philippines, GRI sustainability reporting guidelines are considered as a universally applicable framework. GRI guidelines provide the different aspects that indicate sustainability: the general strategic view as standard disclosure, and the economic, environmental, and social aspects which fall under specific standard disclosures. The GRI guidelines are pertinent to this study and will be referred to in measuring and quantifying the information reported in the sustainability reports.

Table 1
Disclosures in GRI Sustainability Guidelines

General standard disclosures	Economic aspect	Environmental aspect	Social aspect
<ul style="list-style-type: none"> ▪ Strategy and analysis ▪ Organizational profile ▪ Identified material aspects and boundaries ▪ Stakeholder engagement ▪ Report profile ▪ Governance ▪ Ethics and integrity 	<ul style="list-style-type: none"> ▪ Economic performance ▪ Market presence ▪ Indirect economic impacts ▪ Procurement practices 	<ul style="list-style-type: none"> ▪ Materials ▪ Water ▪ Emissions ▪ Compliance ▪ Products and services ▪ Effluents and waste ▪ Supplier environmental assessment ▪ Environmental grievance mechanisms 	<ul style="list-style-type: none"> ▪ Energy ▪ Biodiversity ▪ Transport ▪ Overall ▪ Labor practices and decent work ▪ Human rights ▪ Society ▪ Product responsibility

In the Philippines, the Securities and Exchange Commission (SEC), in its intention to strive for a sustainable economy, has encouraged the reporting of non-financial information and sustainable issues by companies and financial institutions. The Bangko Sentral ng Pilipinas (BSP), on the other hand, although unable to implement policies strengthening the sustainability reporting across the industry, has encouraged banks to initiate sustainable and green financing as a regulatory body monitoring the Philippine banking system. One of its functions is the monitoring and benchmarking of key performance indicators, such as return on equity, return on assets, and net interest margin which are identified as the basic quantitative

financial performance indicators, and are required to be disclosed in financial statements. These financial performance indicators are relevant to the study.

Several studies on the relationship between corporate sustainability and financial performance concluded with different results due to the dissimilarities in their research designs and methodologies, and the measurement of sustainability and performance indicators. Some researches pointed out that the positive relationship is driven by several factors such as the size of firms, banking policy, moderation of sustainability performance, and economic growth. Corporate social responsibility and good governance, as integral components of sustainability, also showed a positive relationship with financial performance.

However, there are studies indicating that there is no relationship between financial performance and sustainability disclosure because of the voluntary and subjective nature of the measurement of sustainability, incomplete disclosure of actual sustainable practices, and differences in the manner of measuring research variables.

Table 2
Relationship of Sustainability Reporting and Financial Performance

Researchers	Research	Relationship
Backstrom and Karlsson (2015)	Corporate sustainability and financial performance – The influence of board diversity in a Swedish context	There is a positive relationship between corporate sustainability and financial performance using correlational analysis and multi variate regression analysis.
Moenna (2014)	Empirical analysis on European Union (EU) top fifty listed companies' corporate social responsibility and financial performance	There is a positive association between CSR and financial performance for the top fifty listed companies from the EU using accounting-based measure return on total assets.
Weber (2017)	Corporate sustainability and financial performance of Chinese banks	The positive relationship of corporate sustainability performance and financial performance may have been affected by the banking policy.
Stanley (2011)	A correlational study examining the relationship between social responsibility and financial performance	There are weak to moderate correlations between the social responsibility and financial performance.
Suteja and colleagues (2017)	Does corporate social responsibility social responsibility shape the relationship between corporate governance and financial performance?	That corporate governance has positive effect to the company's financial performance
Ameer and Othman (2012)	Sustainability practices and corporate financial performance: a study based on the top global corporations	Financial growth of sustainable companies from developed countries and emerging markets are significantly higher compared to those that do not engage in sustainable practices.
Bartlett, 2012	The impact of corporate sustainability reporting on firm valuation	There is a superior positive correlation between corporate sustainability reporting and firm value.
Swinkels (2012)	The effect of publishing a GRI sustainability report on financial performance	There is no relationship between the publications of the report and financial performance due to subjectivity in the measurement of CSR and financial performance.
Kusuma and Koesrindartoto (2014)	Sustainability practices and financial performance: An empirical evidence from Indonesia	The research did not express the existence of strong impact of sustainability practices to the financial performance.
Wong and Wong (2015)	Corporate social responsibility practices in banking industry	Financial performance is not the only elements to engage in fruitful corporate social responsibility.
Salah and Salama (2016)	A quantitative analysis for the correlation between corporate financial and social performance	The result confirmed that there is no significant relationship between return on assets, return on equity, operating income, and CSR.

These studies, like this current one, considered the relationship of corporate social responsibility, corporate governance, and financial performance, as these are integrated with sustainability reporting.

Theoretical Framework

This research was guided by the stakeholder theory considering that corporate social responsibility and sustainability are closely related and linked to financial performance, through stakeholders as a connecting bridge. Stakeholder theory explains how companies would disclose different information in their sustainability report to achieve their main purpose. A socially responsible firm creating a good corporate branding through sustainable reporting can easily attract customers and investors and keep beneficial employees. Sustainability is a corporate responsibility oriented towards all stakeholders and companies' need to create value for customers, suppliers, employees, investors, owners, creditors, society, and government (Freeman & Dmytriiev, 2017).

According to Freeman (1994), the stakeholder theory points out two essential things in business. The first idea is to clearly define the organization's main purpose. The business leaders are required to create values that will bring its processes and the stakeholders together. This leads to a better business outcome and generates outstanding performance. The second idea is to emphasize on the responsibilities of the management to its stakeholders. Business responsibility goes beyond the focus on being profitable and considers with equal priority the well-being of the society and environment in making decisions. As the company's goal is to satisfy their stockholders through good financial performance in terms of profit, in the stakeholder theory, the priority is not only evolving with the stockholders but with the interests of the greater stakeholders.

Financial Performance Measurement

Financial performance is determined through financial statements analysis. Ratio analysis is a technique used in gaining insight into a company's performance, such as profitability, liquidity, and operational efficiency by examining the information included in its financial statements. Financial ratios can identify potential opportunities and problems in a company's financial environment (Kenton, 2019). In this study, universal and commercial banks are required by the BSP to include in the audited financial statements the return on equity, return on assets, and net interest margin as banks' basic quantitative financial performance indicators.

Return on Equity (ROE). Return on equity is one of the important parameters for measuring the profitability of the banks. Return on equity measures profit as a percentage of equity capital of banks. The profitability is measured by how much profit is generated with the investments of the shareholders.

Return on Assets (ROA). Return on asset ratio is the net income or loss after tax generated by the bank on its average total assets. The higher the proportion of average earnings assets, the better would be the resulting returns on total assets. Return on assets is also one of the important parameters for measuring profitability of the banks. This ratio indicates the return as a percentage of total assets.

Net Interest Margin (NIM). Net interest margin refers to the ratio of annualized net interest income to average earning assets. Annualized net interest income is the difference between the interest income and interest expense during the year. Interest earning assets include investment securities, loans, and leases (Kumar, 2014).

Statement of the Problem

The purpose of the study was to address the following research questions:

1. What are the extents of disclosure of overall sustainability reporting, general governance aspect, economic aspect, environmental aspect, and social aspect of the universal and commercial banks in the Philippines based on the GRI guidelines?
2. What are the ROE, ROA, and NIM of the universal and commercial banks in the Philippines?
3. Is there a relationship (correlation) between the extents of disclosure of overall sustainability reporting, general governance aspect, economic aspect, environmental aspect and social aspect and ROE, ROA and NIM of universal and commercial banks in the Philippines?
4. Is there a relationship (multiple regression models) between the extents of disclosure of general governance aspect, economic aspect, environmental aspect and social aspect, and ROE, ROA and NIM of universal and commercial banks in the Philippines?

Hypotheses

The following hypotheses were developed for the correlation study and multiple regression model:

H₁: There is a positive relationship between the extent of disclosure of overall sustainability reporting and ROE of universal and commercial banks in the Philippines.

H₂: There is a positive relationship between the extent of disclosure of the general governance aspect and ROE of universal and commercial banks in the Philippines.

H₃: There is a positive relationship between the extent of disclosure of the economic aspect and ROE of universal and commercial banks in the Philippines.

H₄: There is a positive relationship between the extent of disclosure of the environmental aspect and ROE of universal and commercial banks in the Philippines.

H₅: There is a positive relationship between the extent of disclosure of the social aspect and ROE of universal and commercial banks in the Philippines.

H₆: There is a positive relationship between the extent of disclosure of overall sustainability reporting and ROA of universal and commercial banks in the Philippines.

H₇: There is a positive relationship between the extent of disclosure of the general governance aspect and ROA of universal and commercial banks in the Philippines.

H₈: There is a positive relationship between the extent of disclosure of the economic aspect and ROA of universal and commercial banks in the Philippines.

H₉: There is a positive relationship between the extent of disclosure of the environmental aspect and ROA of universal and commercial banks in the Philippines.

H₁₀: There is a positive relationship between the extent of disclosure of the social aspect and ROA of universal and commercial banks in the Philippines.

H₁₁: There is a positive relationship between the extent of disclosure of overall sustainability reporting and NIM of universal and commercial banks in the Philippines.

H₁₂: There is a positive relationship between the extent of disclosure of the general governance aspect and NIM of universal and commercial banks in the Philippines.

H₁₃: There is a positive relationship between the extent of disclosure of the economic aspect and NIM of universal and commercial banks in the Philippines.

H₁₄: There is a positive relationship between the extent of disclosure of the environmental aspect and NIM of universal and commercial banks in the Philippines.

H₁₅: There is a positive relationship between the extent of disclosure of the social aspect and NIM of universal and commercial banks in the Philippines.

H₁₆: There is a relationship between the extents of disclosure of general governance aspect, economic aspect, environmental aspect, and social aspect and ROE of universal and commercial banks in the Philippines.

H₁₇: There is a relationship between the extents of disclosure of general governance aspect, economic aspect, environmental aspect, and social aspect and ROA of universal and commercial banks in the Philippines.

H₁₈: There is a relationship between the extents of disclosure of general governance aspect, economic aspect, environmental aspect, and social aspect and NIM of universal and commercial banks in the Philippines.

II. METHOD

Research Design

The research design combined both qualitative and quantitative methods - content analysis procedure and correlational research analysis. Data were gathered through secondary literature and content were analyzed and evaluated using GRI guidelines. The selection of samples is based on the availability of secondary source literature such as published annual reports, sustainability reports, audited financial statements, and corporates social responsibility reports. Out of the 46 listed banks as of March 4, 2019

(Bangko Sentral ng Pilipinas, 2019), 30 banks were selected, of which had made their 2017 annual reports, sustainability reports, audited financial statements, and corporate social responsibility reports, published in their websites and made available to the public.

A descriptive analysis was used to summarize the data collected. To examine the relationship, this study took a correlational approach - Spearman's rank-order correlation where the general governance aspect, economic aspect, environmental aspect, social aspect, and sustainability report level – which is the total of general governance aspect, economic aspect, environmental aspect, and social aspect – were each correlated to ROE, ROA and NIM (H_1 to H_{15}). Sustainability disclosures were separated into each aspect to better understand the relationship of each component with each financial performance indicator.

Aside from being correlational, this study also examined the relationship between the general governance aspect, economic aspect, environmental aspect, and social aspect and each financial performance indicator through the multiple regression model (H_{16} to H_{18}).

Ethical Consideration

The study does not involve human participants. The research data and the basis for testing rely on secondary data available in the public domain. By using secondary data, ethical issues regarding data collection are eliminated, as the information comes from published annual reports, sustainability reports, audited financial statements, and banks' websites, and these are available to all users.

III. RESULTS AND DISCUSSION

Descriptive Analysis

The descriptive statistics presented in Table 3 and 4 describe the extent of disclosures of sustainability reporting for each aspect (overall sustainability reporting, good governance aspect, economic aspect, environment aspect, and social aspect) and the financial performance of universal and commercial banks in the Philippines for the year 2017.

Table 3
Extent of Disclosures of Sustainability Reporting

Variables	Minimum	Maximum	Mean	Std D
Overall sustainability reporting	43.69%	89.17%	64.09%	14.57%
Good governance aspect	71.43%	100.00%	90.95%	12.15%
Economic aspect	50.00%	100.00%	81.67%	13.02%
Environment aspect	0.00%	83.33%	33.61%	24.90%
Social aspect	16.67%	93.33%	50.11%	20.33%

Results showed that among the aspects of sustainability reporting, universal and commercial banks in the Philippines give lower priority to reporting the environmental and social aspects of sustainability among the aspects and exert outstanding effort in reporting good governance and economical information. The voluntary nature of sustainability reporting in the banking system of the Philippines resulted in a low number of universal and commercial banks that are engaged in sustainability reporting. The policies implemented by the SEC mandate the publication of sustainability reports of only the publicly-listed banks, and not the entire banking system. BSP, as the chief monetary authority, has not implemented regulations parallel to the objectives of SEC. Philippine banks are encouraged to engage in sustainable practices but are not mandated to publish sustainability reports. Therefore, only the publicly-listed universal and commercial banks are required to produce sustainability reports, while the privately-held banks may opt to voluntarily disclose sustainability or not publish at all.

Table 4
Financial Performance

Variables	Minimum	Maximum	Mean	Std D
Return on equity	2.56%	22.60%	9.72%	4.23%
Return on assets	0.34%	1.75%	1.02%	0.36%
Net interest margin	1.21%	7.89%	3.30%	1.57%

Results showed that all the performances of universal and commercial banks in the Philippines based on computed mean of return on equity (9.72% deviating 4.23%), return on assets (1.02% deviating 0.36%), and net interest margin (3.30% deviating 1.57%) are all within the range of the 2017 overall performance of the Philippine banking system return on equity at around 10%, return on assets at above 1%, and net interest margin at above 3%.

Testing the Research Hypotheses

Spearman's Rank-order Correlation. Spearman's rank-order correlation was used to test hypotheses H₁ to H₁₅. The results of hypotheses H₁ to H₁₅ are illustrated in Table 5.

Table 5
Spearman's Rank-order for Financial Performance Indicators

Extents of Disclosure	Financial Performance Indicators		
	Return on Equity	Return on Assets	Net Interest Margin
Overall sustainability reporting	0.502 (H ₁)	0.091 (H ₆)	-0.347 (H ₁₁)
Good governance aspect	0.284 (H ₂)	-0.078 (H ₇)	-0.228 (H ₁₂)
Economic aspect	0.419 (H ₃)	0.097 (H ₈)	-0.273 (H ₁₃)
Environment aspect	0.557 (H ₄)	0.115 (H ₉)	-0.379 (H ₁₄)
Social aspect	0.322 (H ₅)	-0.033 (H ₁₀)	-0.386 (H ₁₅)

Alpha = .05 level of significance

The results of Spearman's rank-order correlation in Table 5 show that there is no positive nor significant relationship between the extents of disclosure of sustainability reporting and the financial performance represented by return on equity, return on assets, and net interest margin. Therefore, reject H₁ to H₁₅. Since there is no positive nor significant relationship between the extent of disclosures of sustainability reporting and the financial performance, the results cannot be used to encourage universal and commercial banks in the Philippines to engage in sustainability reporting.

Multiple Regression Model. The multiple regression model was used to test hypotheses H₁₆ to H₁₈. Hypotheses H₁₆ to H₁₈ investigate the relationship between the independent variables, that is, good governance aspect, economic aspect, environmental aspect, and social aspect; and each of the dependent variables, namely, return on equity, return on assets, and net interest margin.

Table 6
Model Summary - Sustainability Reporting and Return on Equity

Model	R	R square	Adjusted R Square	Std Error of the Estimate	Durbin-Watson
1	0.491	0.241	0.119	3.96890%	1.780

Predictors: (Constant), social aspect, general governance, economic, environmental

Durbin-Watson in Table 6 includes the number of tests in order to detect the errors from a statistical analysis where R is used to measure the relationship between the observed value and predicted value of dependent variable while R square processes the amounts of variance in dependent variable that is accounted by independent variables. R-square is 0.241 which means that only 24.10% of total variance of

return on equity is explained by the total independent variables. On the other hand, Durbin-Watson is 1.780, a value that is between the cut-off threshold of 1 to 3 which indicates that there is no autocorrelation among the residuals.

Table 7
ANOVA - Sustainability Reporting and Return on Equity

Model		Sum of Squares	DF	Mean Square	F	Sig
1	Regression	124.803	4	31.201	1.981	0.128
	Residual	393.804	25	15.752		
	Total	518.607	29			

Predictors: (Constant), social aspect, general governance, economic, environmental

Presented in Table 7 is the output of analysis of variance (ANOVA). The ANOVA table shows the significant value arrived at from the data analysis which should be equal or less than 0.05 (p-value = 0.05) to mean that the model is fit to use. However, since the significant value of the regression is 0.128 (p-value = 0.128), this indicates that there is no relationship between the independent variables and the dependent variable (return on equity). Therefore, H_{16} is rejected.

The model was unable to significantly predict financial performance as measured by return on equity based on the extent of disclosures on sustainability reporting: good governance aspect, economic aspect, environmental aspect, and social aspect, (F (4, 25) = 1.981, p = 0.128), with R^2 of 0.241.

Table 8
Model Summary - Sustainability Reporting and Return on Assets

Model	R	R square	Adjusted R Square	Std Error of the Estimate	Durbin-Watson
1	0.285	0.081	-0.066	0.37050%	1.870

Predictors: (Constant), social aspect, general governance, economic, environmental

As disclosed in Table 8, only 8.10% (R-square = 0.081) of the total variance of return on assets is explained by the total independent variables. On the other hand, Durbin-Watson is 1.870, which indicates that there is no autocorrelation among the residuals.

Table 9
ANOVA - Sustainability Reporting and Return on Assets

Model		Sum of Squares	DF	Mean Square	F	Sig
1	Regression	0.303	4	0.76	0.551	0.700
	Residual	3.432	25	0.137		
	Total	3.734	29			

Predictors: (Constant), social aspect, general governance, economic, environmental

As presented in Table 9, the significant value of the regression is 0.700 (p-value = 0.700), this indicates that there is no relationship between the independent variables and the dependent variable (return on assets). Therefore, H_{17} is rejected.

The model was unable to significantly predict financial performance as measured by return on assets based on the extent of disclosures on sustainability reporting in all four aspects: good governance, economic, environmental, and social, (F (4, 25) = 0.551, p = 0.700), with R^2 of 0.081.

Table 10
Model Summary - Sustainability Reporting and Net Interest Margin

Model	R	R square	Adjusted R Square	Std Error of the Estimate	Durbin-Watson
1	0.469	0.220	0.095	1.49326%	1.324

Predictors: (Constant), social aspect, general governance, economic, environmental

As disclosed in Table 10, only 22% of the total variance of net interest margin is explained by the total independent variables. On the other hand, Durbin-Watson is 1.324, indicates that there is no autocorrelation among the residuals.

Table 11
ANOVA - Sustainability Reporting and Net Interest Margin

Model		Sum of Squares	DF	Mean Square	F	Sig
1	Regression	15.696	4	3.924	1.760	0.169
	Residual	55.745	25	2.230		
	Total	71.442	29			

Predictors: (Constant), social aspect, general governance, economic, environmental

As presented in Table 11, the significant value of the regression is 0.169 (p-value = 0.169), this indicates that there is no relationship between the independent variables and the dependent variable (net interest margin). Therefore, H_{18} is rejected.

The model then was unable to significantly predict financial performance as measured by the net interest margin based on the extent of disclosures on sustainability reporting in all four aspects – good governance, economic, environmental, and social, ($F(4, 25) = 1.760$, $p = 0.169$), with R^2 of 0.220.

In view of the absence of a positive and significant relationship between the extent of disclosures of sustainability reporting and financial performance, the results do not imply that universal and commercial banks should not continue their sustainable practices and reporting to promote sustainable initiatives. Since the mandatory publication of sustainability reports in the Philippines is in the early stage of implementation, the results are purely indicative that majority of the universal and commercial banks are still in the process of adopting comprehensive and applicable sustainability reporting frameworks, such as GRI guidelines.

IV. CONCLUSIONS AND RECOMMENDATIONS

The relationship between sustainability reporting and financial performance is very pertinent today's events that sustainable information is considered as vital components of decision-making and implementing corporate strategies. Based on the study, the finding concluded that:

1. The Philippine banks have not fully implemented a comprehensive reporting on sustainability, such as the GRI guidelines. The voluntary nature of sustainability reporting resulted in a low number of universal and commercial banks engaged in sustainability reporting and merely a few that are actively involved in the environmental and social awareness activities.
2. The financial performance of the selected universal and commercial banks in terms of return on equity, return on assets, and net interest margin is within the level of the overall performance of Philippine banking system.
3. The results of the study revealed that sustainability reporting based on the GRI guidelines does not have a significant positive relationship with the financial performance of universal and commercial banks in the Philippines. The absence of standard sustainability reporting framework, such as the GRI guidelines in the marketplace, has made the sustainability measurement a difficult procedure, with banks unable to produce a more comprehensive report. Thus, other sustainability reporting elements have not been included.

The results of this study do not imply that the banking sector should not continue their sustainable practices and reporting to promote sustainable initiatives. The value of sustainability reporting is that it ensures that banks consider their responsibility when it comes to sustainability issues and enables them to be transparent about the risks and opportunities they encounter. Banks are creating values through sustainability, improving return on capital by introducing better technological innovation in the banking activities. Sustainability and transparency can help banks to build and maintain consumer trusts, just like ethical financial reporting does. Banks should still pursue the sustainability reporting because the interests of today's investors and customers do not focus only on finances but also on responsible investments.

Recommendations

The insignificant relationship between sustainability reporting and financial performance did not lend enough validation to recommend business leaders to take action on sustainability reporting. However, sustainability reporting may still be valid practice since it generates awareness on economy, environmental issues and social welfare. Based on the results and conclusions drawn, the following recommendations are proposed:

1. The full disclosure on sustainability reporting can be achieved by making sustainability reporting a mandatory practice in the banking industry through the BSP. A sustainability framework like the GRI guidelines can provide a comprehensive, flexible, and adaptable framework for the banks in the Philippines of any size to report on their governance, economic, environmental, and social impacts.
2. BSP could issue a standardized framework similar to the GRI guidelines prescribing the contents of a comprehensive sustainability report. Since a sustainability framework would likely increase the costs of reporting, the BSP may require universal and commercial banks to prepare sustainability reports with reduced requirements to mitigate the cost burden. When this standard or framework is issued, banks will be required to prepare sustainability reports with information and disclosures only pertinent and applicable to the banking industry. The disclosures in these reports will be more uniform, measurable, and comparable. The BSP should implement policies requiring published sustainability reports that conform with the standard framework and a penalty may be imposed to ensure compliance.
3. The BSP and non-governmental banking organizations and associations should also motivate banks to adequate disclosure of sustainability by holding a corporate sustainability reporting award. This recognition could encourage banks to be more transparent and implement a more comprehensive sustainability reporting.
4. Sustainability reports, like financial statements, could undergo external attestation and be graded as to the completeness, relevance, and conformity to the adopted sustainability reporting framework.

The results obtained in this study suggest the conduct of further research on the relationship between sustainability reporting and financial performance to provide guidance for business leaders in decision-making. While this study did not provide evidence for the significance of the relationship between sustainability reporting and financial performance using the 2017 published data for universal and commercial banks in the Philippines, this research suggests examining the same relationship over the next period upon implementation of legislation about mandatory sustainability reporting. Further research may also obtain data across multiple years to evaluate the long-term effect of sustainability reporting on a firm's financial performance and not just a short-term assessment.

Research Limitations

The limitations of this study are as follows:

1. The recent introduction of sustainability reporting in the Philippines as part of regulatory compliance is one of the limitations pertaining to the statistical findings of this study.
2. In the study, the sample size was reduced due to the unavailability of some secondary information from published banks' websites and data stream. The findings may not precisely depict the sample of universal and commercial banks in the Philippines that report on sustainability. These limitations will provide strong incentives for future research that can expand this study.

ABOUT THE RESEARCHER

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Determining the Effectiveness of Continuing Professional Development Seminars in Enhancing Certified Public Accountants' Competences Using Partial Least Squares – Structural Equation Modelling

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Abstract – This study determines the effectiveness of engaging in CPD seminars on the enhancement of the competences and skills of accountants. CPD's effect on competence is assessed based on how it effectively helped accountants in enhancing the specific knowledge and skills set forth in the Core Competency Framework for Entry to the Philippine Accountancy Profession (i.e., business and organizational knowledge, information technology knowledge, accounting knowledge, interpersonal skills, and communication skills. With the data collected from 142 accountants, the quantitative analyses were conducted using Partial Least Squares Structural Equation Modelling (PLS-SEM). The results of the study revealed that CPD seminars helped accountants in enhancing certain areas of competence. Specifically, most CPD seminars are viewed by the majority of accountants as effective in enhancing accounting knowledge, interpersonal skills, and communication skills. However, it has been determined that the current CPD seminars are not perceived as effective in enhancing organizational and business knowledge as well as information technology knowledge.

Keywords: continuing professional development, CPA, competence, PLS-SEM

I. INTRODUCTION

Competence, when linked to work, is defined as the ability to perform activities within an occupation and a behavioral description of workplace performance; doing rather than knowing (Berman Brown & McCartney, 1995 as cited by Murphy, 2014) which aids in the effective completion of a job or task. Competence is also linked to specific standards of performance within a role, being the ability to perform activities within an occupation to the standard expected in employment (Murphy, 2014). Moreover, competence can also be described as a personal quality or characteristic possessed by an individual rather than a statement about the range of their competence in a specific context (Eynon & Wall, 2002). Competence therefore carries a generic holistic meaning, referring to person's overall capacity and is an umbrella term, deriving from possessing a repertoire of relevant attributes and qualities such as knowledge, skills, understanding, and attitudes.

In the accounting workplace, competence has been broken-down according to the specific skill sets and components of professional competence, namely: personal competence, knowledge competence, and social competence. Personal competence pertains to certain personal qualities and value competences which are inherent and cannot be acquired. Salient aspects discussed are ethics, integrity, and the individual's own value system. Knowledge competence, on the other hand, focused on technical accounting knowledge and non-accounting knowledge competence. Accounting knowledge could go from the basic bookkeeping knowledge to complex accounting, finance, and tax standards and rulings. In the accounting practice, technical knowledge competence is largely dictated by client/industry requirements. Aside from attending continuing professional development seminar, technical expertise can be more effectively gained on a per encounter basis since professionals and practicing accountants apply technical knowledge to a more practical than theoretical context. Lastly, social competence pertain how professionals interact with other people, meet with people, and give presentations. People skills, communication skills, and strategic skills emerge as significant aspects of this overall social competence component.

In measuring competence, Murphy (2014) enumerates six ways on how professionals know if they are competent: (1) self-assessment, which relate to a proactive approach of assessing oneself with regard to actual performance in order to ensure 'a good self-awareness of what the current skill set is; (2) renewal of professional association, which prompts a consideration of skills, knowledge and professional development in order to protect their license to practice; (3) formal workplace assessment, which pertain to self-assessments reviewed and re-assessed with superiors; (4) informal workplace assessment, which can be mere dialogue with direct line superiors on a more informal basis that provides opportunity for informal feedback; (5) achievements within the workplace, such as successfully engaging with new systems, dealing with difficult people, and gaining new business; and (6) 'the market', wherein the market effectively decides when an individual becomes irrelevant.

In the early 1990s, the mandatory continuing professional education (MCPE) in the United States of America is one part of the accounting profession's official response to questions concerning the quality of accounting practice and the increasing demands on the profession for more, better, and different services. This program serves as an avenue for accountants to continuously be able to enhance their technical skills and competences in line with the constantly changing accounting rules and practices as well as broader business and industry settings. The adoption of the MCPE program by the AICPA required a phased-in 3-year total of 120 hours for members in public practice and 90 hours for members not in public practice (Coffee & Beegle, 1994). Shortly after adoption of the MCPE program, a study has been made to determine the attitudes of two groups of accountants' – practitioners and educators – attitudes toward MCPE and its effectiveness. The result of the study showed that CPAs at the time overwhelmingly support the concept of mandatory continuing professional education and feel that it enhances the image of the profession (Coffee & Beegle, 1994). Moreover, the majority of the respondents of this study feel that MCPE has improved their professional learning and the quality of their professional work. However, the results also showed that practitioners feel more strongly about these benefits than do educators.

A later study measured participant's perceptions of the value of requiring more or fewer courses by answering the question 'If CPE were not required, I would take fewer courses.' The responses show that nearly 58% agreed or strongly agreed to this statement, suggesting that a slight majority would prefer fewer mandated hours. A related issue is whether the current level of 40 hours required per year is adequate for meeting individual needs. Hence, the respondents were asked about the portion of their 2003 CPE hours that were highly effective in meeting their needs, 65% of respondents said 'all or most.' Nevertheless, a sizeable minority did not find all hours highly effective (Wessels, 2007). In terms of the method of delivery of continuing professional education, CPAs have preferred practical workshops in which there is hands-on learning and small group tutorial sessions that are interactive between the expert and the audience. On the other hand, the results of this study showed that CPAs prefers the least total autonomy in which learning is carried out individually (Meyer, 2007).

In a study conducted in the Philippines which consisted of 187 CPA respondents, Mendoza (2013) revealed that quality of CPD activities or programs was assessed to be "very satisfactory" as articulated by 56.15% of the respondents. It appears that the assessment has been more positively in favor of the providers. Such assessment indicates the higher level of acceptance on the part of the respondents with respect to the quality of service that are delivered by the providers. In interviews conducted, it was revealed that the satisfaction is on the alignment of the topics being offered by the providers with the requirements of the individual practitioners. Thus, the providers are meeting the needs of the professionals by way of offering the appropriate topics or subject matters of training. However, the interview also revealed that much can be improved with respect to the delivery of the training programs in the actual conduct (Mendoza, 2013).

In order to be at par with the international education standards, the Professional Regulatory Board of Accountancy (PRBOA) issued BOA Resolution No. 358-2016 which provides the gradual increase of the continuing professional development (CPD) unit requirement for CPAs from 60 to 120 units and the shift

from thematic to competency-based CPD framework. The main objective of the CPD program is to enhance and upgrade the competencies and qualification of professionals for the practice of their professions pursuant to ASEAN Qualifications Reference Framework (AQRF) and the ASEAN Mutual Recognition Arrangement for Accounting Services, to which the Philippines is a signatory. Subsequently, BOA Resolution no. 254-2017, the operational guidelines for the CPD Act of 2016, also required CPAs seeking BOA accreditation to comply with the 120 CPD unit requirement to align with the Professional Regulation Commission's (PRC) requirement for the renewal of the Professional Identification Card (PIC).

The issuance of BOA Resolution No. 358-2016 and 254-2017 have garnered mixed reactions from the licensed accountants. Majority of the accountants believe that the new requirement would be too burdensome for them due to the expensive cost of CPD seminars considering that accountants, especially those in the public practice, are generally underpaid. Most accountants also believe that the 120-unit requirement will only compel them to attend seminars discussing topics which are not relevant to their line of work.

Due to some constraints and challenges in faced by the PRC as it carried out its mandate to give effect to the intent and purpose of the CPD Act of 2016, PRC issued Resolution No. 2019-1146 which took effect last March 1, 2019 stating that the new CPD requirements shall be put in a transition period and during this period, professionals will only be required to obtain no more that 15 units of CPD training in order to renew their Professional Identification Card. However, CPAs getting BOA accreditation are still required to complete the 120-unit requirement.

The accountants believe that engaging into these activities should not be driven by just being forced to comply with the requirements set forth by the PRC and PRBOA in order for them to be able to renew their licenses and be accredited as accounting practitioners, but rather it should be driven by their willingness to acquire new skills and knowledge in order for them to be able to meet the requirements of the ever-dynamic environment of accounting practice.

In the survey conducted by Tan (2015), it was shown that conferences and seminars ranked first in the list of CPD activities participated by his respondents. This is followed by formal studies (2nd), and self-learning modules or trainings (3rd). Teaching technical courses and being a speaker or resource person in conferences and seminars ranked as 4th and 5th, respectively. Working on technical committees comes 6th and publication and academic writing is ranked 7th. Similarly, in another survey conducted by Mendoza (2013) to 187 CPAs from Metropolitan Manila, results showed that trainings, seminars, and workshops are the most dominant activities that are attended by 91.44% of the respondents. Conferences and conventions followed with 39.04% of the respondents having attended.

As evidenced by previous studies, most accountants prefer CPD seminars as their main source of CPD units as it is less costly as compared to other sources of CPD units such as obtaining graduate education and additional professional certifications. Moreover, CPD seminar is essentially self-directed as the accountants can choose to attend seminars which topics are relevant to them and that which schedules will also match theirs.

A number of earlier studies have already been made to evaluate the effectiveness of CPD and its impact on competence and career advancement. However, none of the past studies were able to determine CPD's impact on the specific components of competence based on existing competency frameworks in the accounting profession. This study determines how effective CPD seminars are in serving the objective of continuing professional development programs, that is, to enhance and upgrade the competencies and qualification of professionals, based on the professional's own perception and self-assessment

This study is anchored on the Core Competency Framework for Entry to the Philippine Accountancy Profession which articulates the knowledge, skills, and professional values that CPAs need to have in order to successfully face the challenges of today's changing environment and the future. The core competencies are divided into three major components: knowledge, skills, and values. However, this paper focuses only

on the impact of CPD seminars on specific sets of knowledge and capabilities, thus the operational framework of this study excludes values which is composed of professional ethics and moral values.

Knowledge is composed of organizational and business knowledge, information technology knowledge, and accounting knowledge. Organizational and business knowledge refers to the broad base of knowledge concerning macro-environmental, economic and industry issues, business process structures, functions and practices. It includes core knowledge in areas such as economics, quantitative methods and business statistics, organization behavior, marketing and operations management, international business, ethics, and corporate governance.

Information technology, on the other hand, includes not only being conversant with IT concepts for business systems but sound knowledge on internal control in computer-based systems, development standards and practices for business systems, management of the adoption, implementation and use of IT, evaluation of computed business systems, and managing the security of information.

Accounting knowledge includes core knowledge related to accounting and related areas and must include proficiency in the international accounting and auditing standards, cost management and the latest concepts in management accounting, recent tax laws and business and commercial laws. It also includes knowledge of corporate finance and the Philippine capital markets, professional ethics and environmental accounting and reporting.

Skills include both interpersonal skills and communication skills. Interpersonal skills involve developing the ability of CPAs to work in groups and being a team player. It includes the skills to participate as member of a team and contributing to group effort; teaching others new skills; working to satisfy clients' expectations; negotiation skills and working with diversity or working well with men and women from diverse backgrounds. Lastly, communication skills refer to active listening skills and the ability to communicate effectively one's points of view, both orally and in writing, at all organizational levels; being able to justify one's position, deliver powerful presentations and to persuade and convince others.

This study focused on CPD seminars (independent variable) and its impact on accountants' competences (dependent variable). CPD's effect on competence is assessed based on how it effectively helped accountants in enhancing the specific knowledge and skills set forth in the Core Competency Framework for Entry to the Philippine Accountancy Profession which was created by the Professional Regulatory Board of Accountancy. CPD, on the other hand, will be gauged based on the degree of accountants' engagement with CPD seminars, that is, the number of CPD units earned by the respondents.

To determine the impact of CPD on each of the five areas of CPAs' competences as defined in this study, the following hypotheses are formulated:

- H₀₁: Engaging in CPD seminars does not have a significant impact on the enhancement of CPAs' business and organizational knowledge.*
- H_{a1}: Engaging in CPD seminars have a significant impact on the enhancement of CPAs' business and organizational knowledge.*
- H₀₂: Engaging in CPD seminars does not have a significant impact on the enhancement of CPAs' information technology knowledge.*
- H_{a2}: Engaging in CPD seminars have a significant impact on the enhancement of CPAs' information technology knowledge.*
- H₀₃: Engaging in CPD seminars does not have a significant impact on the enhancement of CPAs' accounting knowledge.*
- H_{a3}: Engaging in CPD seminars have a significant impact on the enhancement of CPAs' accounting knowledge.*
- H₀₄: Engaging in CPD seminars does not have a significant impact on the enhancement of CPAs' interpersonal skills.*
- H_{a4}: Engaging in CPD seminars have a significant impact on the enhancement of CPAs' interpersonal skills.*

- H_{o5}: Engaging in CPD seminars does not have a significant impact on the enhancement of CPAs' communication skills.*
- H_{a5}: Engaging in CPD seminars have a significant impact on the enhancement of CPAs' communication skills.*
- H_{o6}: There is no significant difference between the impact of CPD on CPAs' competence when analyzed according to the sector where the CPA is connected.*
- H_{a6}: There is a significant difference between the impact of CPD on CPAs' competence when analyzed according to the sector where the CPA is connected.*

II. METHOD

The study utilized descriptive and causal-explanatory method in order to understand the relationship of CPD and accountants' competences. This study used primary data which is gathered from the survey questionnaires that answered by certified public accountants. The statements used in the survey questionnaire are based on the Core Competency Framework for Entry to the Philippine Accounting Profession.

The population of this study includes all active certified public accountants who have been practicing their profession in either of the four sectors of the accounting practice: academe, public, government, and commerce and industry. The questionnaire was sent to representatives of various private companies, audit firms, educational institutions, and government agencies. The researcher asked the representatives (e.g. human resource managers, finance managers/heads, college department heads) to further distribute the questionnaires to randomly selected CPAs from their organizations. A total of 142 CPAs from the four sectors of accounting practice served as respondents of the study. The present paper followed the suggestion of Hair, Hult, Ringle and Sarstedt (2014) to determine the minimum sample size by means of power analysis. Through power analysis, the effect size, statistical power, level of significance, and number of predictors should be inputted by the researchers to the software indicating that a minimum sample size for PLS-SEM depends on the size of the model (determined by the number of predictors), the effect size, statistical power, and level of significance. The present study used the GPower software in conducting the power analysis using 80% statistical power, small to medium effect size (.06), 5% level of significant, and one predictor. The only predictor of the model is CPD which affects to each of the five dependent variables such as BUS, IT, ACT, Inter, and Comm. Using the information above, the statistical power analysis yielded a conservative sample size of 133. This means that the present study requires a minimum sample of 133 to achieve a statistical power of 80% for detecting a small to medium effect size of .06, with a 5% probability of error.

This study applied the Partial Least Square - Structural Equation Modeling (PLS - SEM) to determine the impact of CPD on the five areas of accountants' competence, as specified in the theoretical framework. The objective of PLS is prediction, as such, latent variables are defined as the sum of their respective indicators. The PLS algorithm attempts to obtain the best weight estimates for each block of indicators corresponding to each latent variable. Partial least squares can be a powerful method of analysis because of the minimal demands on measurement scales, sample size, and residual distributions. Although PLS can be used for theory confirmation, it can also be used to suggest where relationship might or might not exist and to suggest propositions for testing (Chin & Newsted, 1999).

In this study, the researcher will also determine if there are significant differences in path coefficients when the data is group into the four sectors of the accounting practice (i.e., public sector, commerce and industry sector, government sector, and the academe sector). Partial Least Squares – Multi-Group Analysis allows researchers to conduct analyses where the data is segmented in various groups, all possible pairs of groups are generated, and each pair is compared. In multi-group analyses, normally path coefficients are compared (Kock, 2020).

The software used for data analysis in this study is WarpPLS 5.0, a SEM software that conducts structural equation modeling using a partial least squares regression algorithm. The software can conduct a Warp PLS regression, robust path analysis or a standard PLS regression analysis. Presented below was the econometric model used in this study:

$$BUS = \beta_0 + \beta_1 CPD + \varepsilon$$

$$IT = \beta_0 + \beta_1 CPD + \varepsilon$$

$$ACT = \beta_0 + \beta_1 CPD + \varepsilon$$

$$INTER = \beta_0 + \beta_1 CPD + \varepsilon$$

$$COMM = \beta_0 + \beta_1 CPD + \varepsilon$$

Where,

β_0 = Intercept for the regression model

β_1 = Path Coefficients

BUS = Business and Organizational Knowledge

IT = Information Technology Knowledge

ACT = Accounting Knowledge

INTER = Inter-Personal Skills

COMM = Communication Skills

CPD = Continuing Professional Development

ε = Error terms of the regression model

III. RESULTS

This section solely focuses on the results and interpretations of the PLS-SEM analysis using the data gathered from 142 survey respondents.

This study focused on the direct effect of CPD seminars on business and organizational knowledge (BUS), information technology knowledge (IT), accounting knowledge (ACT), interpersonal skills (INTER), and communication skills (COMM). The independent variable which is CPD is measured by a formative indicator relating to the number of CPD units earned by the respondents. The dependent variables have reflective indicators which consists of statements describing specific areas of competence which are expected to be impacted by CPD. These statements were lifted from the Core Competency Framework for Entry to the Philippine Accountancy Profession.

Table 1 shows the construct reliability and validity results that evaluate the adequacy of internal consistency reliability and convergent validity. For the composite reliability criterion, higher values indicate higher levels of reliability. For instance, researchers can consider values between 0.60 and 0.70 as “acceptable in exploratory research,” whereas results between 0.70 and 0.95 represent “satisfactory to good” reliability levels (Sarstedt et. al., 2017). Cronbach’s alpha is a measure of internal consistency reliability that assumes the same thresholds but yields lower values than the composite reliability. The Cronbach’s Alpha and Composite reliability values in Table 1 show that there is adequate internal consistency and reliability, wherein these are both above 0.70.

The convergent validity, on the other hand, is the extent to which a construct converges in its indicators by explaining the items’ variance. It is assessed by the average variance extracted (AVE) across all items associated with a particular construct and is also referred to as communality. An acceptable threshold for the AVE is 0.50 or higher. This level or higher indicates that, on average, the construct explains (more than) 50% of the variance of its items (Sarstedt et. al., 2017). Table 1 also reveals the

Average Variance Extracted (AVE) values of each latent variable, which are all above 0.50, and these indicate adequate convergent validity.

Table 1

Average Variance Extracted and Reliability Coefficients of CPD and Competency Variables

Variables	Cronbach's Alpha [>0.70]	Composite Reliability [>0.70]	Average Variance Extracted (AVE) [>0.50]
CPD	1.000	1.000	1.000
Business and Organizational Knowledge	0.857	0.903	0.700
Information Technology Knowledge	0.933	0.952	0.834
Accounting Knowledge	0.900	0.924	0.670
Interpersonal Skills	0.957	0.968	0.885
Communication Skills	0.904	0.940	0.839

Table 2 shows the discriminant validity using Fornell-Larcker Criterion, wherein the diagonal values are above the values below these. The diagonal values are squared roots of Average Variance Extracted (AVE) and these represent the estimates of inter-correlation between the latent variables. This implies that there are no issues with regards to discriminant validity, the indicators remaining in the model are not significantly correlated with other sets of indicators from the other constructs.

Table 2

Correlation Coefficients among Variables and Square Roots of AVEs

Variables	CPD	BUS	IT	ACT	INTER	COMM
CPD	1.000	0.020	-0.020	0.134	0.174	0.081
BUS	0.020	0.837	0.588	0.617	0.597	0.533
IT	-0.020	0.588	0.913	0.549	0.569	0.511
ACT	0.134	0.617	0.549	0.818	0.557	0.542
INTER	0.174	0.597	0.569	0.557	0.941	0.783
COMM	0.081	0.533	0.511	0.542	0.783	0.916

Note. Diagonal values are square roots of the variables' AVEs while the off-diagonal values are the correlation among the variables.

A significant concern in the structural model assessment is the possible multicollinearity between latent constructs as this may inflate the R² due to the probable common method bias that may have been incurred during the data gathering process.

Computation of the path coefficients linking the constructs is based on a series of regression analyses. Therefore, the researcher must ascertain that collinearity issues do not bias the regression results. VIF values above 5 are indicative of collinearity among the predictor constructs. Table 3 shows that the VIF values for each construct is less than 5 and therefore collinearity between latent constructs does not exist.

Table 3
Collinearity Statistics among CPD and Competency Variables

Variables	CPD	BUS	IT	ACT	INTER	COMM
CPD	1.084	0.000	0.000	0.000	0.000	0.000
BUS	0.000	2.075	0.000	0.000	0.000	0.000
IT	0.000	0.000	1.845	0.000	0.000	0.000
ACT	0.000	0.000	0.000	1.942	0.000	0.000
INTER	0.000	0.000	0.000	0.000	3.201	0.000
COMM	0.000	0.000	0.000	0.000	0.000	2.731

With regard to the first hypothesis of the study (H_1), the results of the structural model presented in Table 4 reveals that engaging in CPD seminars does not significantly impact the effectiveness of CPD in enhancing business and organizational knowledge ($\beta=.072$, $p=0.193$, $f^2=0.005$). Thus, this study fail to reject null hypothesis no. 1.

For the hypothesis no. 2 (H_2), the results of the structural model presented in Table 4 reveals that engaging in CPD seminars does not significantly impact the effectiveness of CPD in enhancing information technology knowledge ($\beta=-.122$, $p=0.069$, $f^2=0.015$). Thus, this study fail to reject null hypothesis no. 2.

Information technology includes not just the IT concepts for business systems but it also requires CPAs to have sound knowledge on internal IT controls, development standards, as well as on the adoption, implementation, and use of IT. Similar with the organizational and business knowledge, IT systems differ across firms and organization. Thus, under the Experiential Learning Theory, full appreciation and expertise on these areas will only be feasible when one becomes actually exposed to it.

Further, the results of the structural equation model show that CPD significantly enhances accounting knowledge ($\beta=.169$, $p=0.019$, $f^2=0.029$), interpersonal skills ($\beta=.193$, $p=0.009$, $f^2=0.037$), and communication skills ($\beta=.173$, $p=0.017$, $f^2=0.030$). Therefore, there is sufficient evidence to reject null hypotheses H_3 , H_4 , and H_5 . The path coefficients on these variables are positive, indicating that the more CPAs' engage with CPD seminars, the more effective it CPD becomes in enhances their accounting knowledge, interpersonal skills, and communication skills. Moreover, the results of Cohen's f^2 shows that the marginal effect size of CPD on accounting knowledge, interpersonal skills, and communication skills is small.

Furthermore, the results are consistent with previous studies where it has been determined that CPD seminars helped accountants become more up-to-date in accounting developments. CPD also helped them improved their knowledge and understanding of their specialty in accounting or specialty in an industry (Meyer, 2007). In another study which was drawn from a survey response of 187 CPAs, Mendoza (2013) revealed that CPD initiatives in the accountancy profession are generally "of significant value" to the respondents. Moreover, in some CPD seminars, CPAs are being required to participate or work in groups which helps them enhance their interpersonal skills. They are also encouraged to raise questions and concerns which helps them improve their communication skills as they need to be able to communicate effectively and clearly their point of view, justify their positions, and deliver presentations whenever applicable and necessary.

Table 4
Effects of CPD Seminars on the Competency Variables

Impact of CPD on Accountants' Competences	Path Coeff. (β)	Std. Error	P-value	Effect size (f^2)
CPD → Business & Organizational Knowledge	0.072	0.083	0.193	0.005
CPD → Information Technology Knowledge	-0.122	0.082	0.069	0.015
CPD → Accounting Knowledge	0.169	0.081	0.019	0.029
CPD → Interpersonal Skills	0.193	0.080	0.009	0.037
CPD → Communication Skills	0.173	0.081	0.017	0.030

Note. Cohen's (1988) effect size: .02 = small, .15 = medium, and .35 = large.

Table 5 exhibits the coefficient of determination, manifested by R² and Adjusted R² values in each endogenous latent variable. The R² ranges from 0 to 1, with higher levels indicating more predictive accuracy. As a rough rule of thumb, the R² values of 0.75, 0.50, and 0.25 can be considered substantial, moderate, and weak. It can be noted from the table below that the R² values are less than 0.25. This implies that the effect of the exogenous construct has a very weak level of predictive accuracy on the movements in the endogenous variables.

Table 5
Coefficient of Determination (R Square Statistics) of the Effects of CPD Seminars on the Competency Variables

Impact of CPD on Accountants' Competences	R ²	Adjusted R ²
CPD → Business & Organizational Knowledge	0.005	-0.002
CPD → Information Technology Knowledge	0.015	0.008
CPD → Accounting Knowledge	0.029	0.022
CPD → Interpersonal Skills	0.037	0.030
CPD → Communication Skills	0.003	0.023

IV. CONCLUSIONS

The results of the study revealed that CPD seminars helped accountants in enhancing certain areas of competence. Specifically, most CPD seminars are viewed by the majority of accountants as effective in enhancing technical accounting knowledge and skills. One of the obvious benefits of engaging in CPD seminars is being able to be updated to the changes in accounting standards, laws, and taxation rules. In addition, CPD seminars also serve as refresher trainings for some accountants who want to revisit standards and practices that they do not normally encounter as part of their specific work functions.

Although implicitly, CPD seminars have been effective in enhancing interpersonal and communication skills. Grounded on the Skill Acquisition Theory, skills are acquired through a set of phenomena which starts from initial learning where the learners acquire a bit of knowledge about a skill without even trying to use it (DeKeyser, 2007). Next to this comes the stage of "acting on" this knowledge, turning it into a behavior, turning "knowledge that" into "knowledge how," or in other words, turning declarative knowledge into procedural knowledge (DeKeyser, 2007). As CPD provides accountants an avenue to meet and constantly communicate with the other members of the professions, the theoretical knowledge about interpersonal and communication skills are effectively being put into practice.

On the other hand, most of the CPD seminars that are being offered do not effectively cater to the profession's need for enhanced competence on organizational and business concepts as well as on information technology. CPD seminars have been too focused on accounting related topics that it fails to

include necessary non-accounting knowledge to provide a more holistic learning experience. As a consequence, there are only few seminars and programs that focus on broad business knowledge and skills and industry specific practices. Moreover, there are also very few practical trainings about systems and information technology.

Research and Business Implications

This paper looked into the perceived effectiveness and impact of CPD seminars on Certified Public Accountants' competence. The researcher believes that the findings have important implications for professional bodies, professionals themselves, and providers of CPD activities. The results of this study showed that although CPD is perceived as effective by most accountants, it may not be able to touch on all the competency areas prescribed by the Board. Specifically, in this study, the researcher was able to determine that CPD is not perceived as effective in terms of enhancing business and organizational knowledge as well as information technology knowledge. Wessels (2007) provided evidence that institutional deterrents, such as length of courses as well as its quality and relevance, are important predictors of perceived CPD effectiveness. These institutional deterrents are mostly directly under the control of CPD providers (Wessels, 2007). Since topics relating to business and organizational knowledge and IT knowledge could either be too broad or too specific, CPD providers tend to choose topics that relates to purely accounting standards and tax legislations in order to ensure large number of seminar attendees. Accountants are then left to rely on internal company-provided trainings and seminars with regard to industry specific practices and hands-on information technology learning. But since these trainings are often not BOA-accredited, CPAs are not able to earn any CPD units from it. Thus, CPD providers may consider offering more variety of courses to ensure that the topics are relevant to all types of accountants including those in specific industries (e.g. hospitality, insurance, power, oil, telecommunications, etc.).

The results of this study also showed that CPD has a significant impact on the enhancement of accounting knowledge, interpersonal skills, and communication skills. As mentioned earlier, CPD providers tend to focus on accounting and tax standards updates, hence, this result could be easily foreseen. This is consistent with earlier studies wherein CPAs perceive CPD as their means to improve their accounting knowledge and to be able to "stay current in the field" (Meyer, 2007). Knowledge has always been dated; therefore, the need for constant update by the professional becomes necessary. Keeping abreast of a field is a major undertaking, especially when professionals have various demands on their time and energy. The issue is not that competence has necessarily deteriorated, but that demands have moved ahead of competence. Without up-to-date knowledge within a profession, a gap may occur between what the public expects and what the professional can deliver (Meyer, 2007). Therefore, the professional can see value in continuing professional education in respect to public expectation. If the professional is up-to-date on the developments within his field, the public will consider him knowledgeable in his profession and a level of trust is incurred.

With regard to interpersonal skills and communication skills, although the CPD seminars may not directly discuss on topics relating to these competency areas, engaging with the CPD seminar in itself could already be an avenue for CPAs to learn, practice, and enhance these essential skills. Thus, CPD providers should ensure that there are sufficient social interactions like team activities, forums, and sharing sessions in every CPD seminars.

Even though the results have been positive for the impact of CPD on accounting knowledge, interpersonal skills, and communication skills. It is worth looking back at the effect size CPD has on these areas. This means that the marginal effect of every additional hour or exposure to CPD have a positive but small effect on the enhancement of these three areas. These results could help the professional bodies and the CPD providers to think of other ways that would improve the mode of delivery of CPD seminars in order to ensure that the attendees will have a more holistic learning experience. It can be helpful to look back on various learning theories such as the Adult Learning Theory, The Skill Acquisition Theory, Theory

of Experiential Learning, and Situated Learning Theory which puts emphasis on the person's actual experience and exposure to real-world scenarios as well as social interactions as the main driver for learning. There may be a need to tailor the way of conducting CPD seminars to make it more interactive and make it less of a classroom setting.

At the end of the day, the accountants' CPD engagement is strongly related to how committed the individual is to his/her profession. Apart from the demands of the professional bodies, the clients, the employers, and the public for continuous professional development, the commitment to life-long learning shall be driven by the person's passion and self-motivation. The professional bodies and the CPD providers can only do so much in order to improve the content and delivery of the topics. However, the learning process is not just driven by the inputs that the person receives but it is formed by how the person accept, reflect, and transform that concrete information to action that will eventually to expertise.

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Implementation of Outcomes-Based Education for Accountancy Program

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Abstract – The paradigm shift to Outcomes-Based Education was a significant reform in the realm of Philippine higher education. The issuance of the revised policies, standards and guidelines for Bachelor of Science in Accountancy to advocate an outcomes-based quality assurance system has prompted tertiary institutions to advance in the curriculum in accordance with the assessment of how best to achieve learning outcomes in their specific settings and their respective visions and missions. This research employing mixed method was conducted to gather insights on the extent of OBE implementation as well as the problems encountered and success stories of the identified HEIs in Region 1. Results revealed the following: The extent of OBE implementation on the identified areas or provisions was high; problems encountered during the implementation include difficulty in institutionalizing the OBE policy and in the formulation of objectives, faculty resistance to change, issues on human resources and lack of learning resources and physical facilities; success stories in the implementation were the enhancement of students' basic and technical skills, management's support to faculty development, the application of new teaching practices, acquisition of new sets of books, students' development of research skills and the retooling of curriculum and syllabus.

Keywords: outcomes-based education, extent of implementation, problems encountered, success stories, Accountancy schools, Region 1

I. INTRODUCTION

“Success in school is of limited benefit unless students are equipped to transfer that success in life in a complex, challenging, high-tech future.”

-Spady and Marshall

Education being part of the services sector, cannot escape the challenges of globalization (Tullao, 2003). As the rising demand for skilled human capital turns into one of the major effects of globalization, the provision of both professional knowledge and skills and all-around attributes by higher education institutions to the graduates is a must. Currently, the focus of different higher education institutions around the globe is centered on students' learning outcomes and assessment (Lui & Shum, 2012).

Because of criticisms directed towards the traditional curriculum and due to the anecdotal “success stories” of Outcomes-Based Education (OBE) as mentioned by Macatangay, et al. (2016), OBE became known. Outcomes are set of learning competencies that empower learners to perform complex assignments, functions, or roles. It is implied in outcomes-based education that the most ideal approach to learn is to initially figure out what should be accomplished. When the ideal results or “exit outcomes” have been identified, the methodologies, procedures, strategies and means are set up to accomplish the predetermined goals. In the study of Lixun (2013), the students could compare the distinctions between Outcomes-Based Learning (OBL) and traditional approach, laying the claim that if OBL is properly implemented, it would foster well-focused and effective teaching and learning that would encourage the students to transform to more dynamic and responsible learners.

Just like any other countries, Philippines could not remain unaffected of such international phenomenon. The shift from traditional method of teaching to outcomes-based education is now part of the political mandate of the Philippines through the issuance of Executive Order No. 83, s. 2012 or the Institutionalization of the Philippine Qualifications Framework to keep it attuned with the ASEAN and global community.

In the accountancy program, the environment in which accounting is practiced has changed dramatically as well. The newly trained accountants must bring to the practice of accountancy communication, interpersonal, and intellectual skills as well as general knowledge, organizational and business knowledge, and accounting and auditing knowledge (Hall, Ramsay, & Raven, 2004).

To this effect, by virtue of Commission En Banc (CEB) Resolution No. 231-2017 dated March 28, 2017, CHED Memorandum Order (CMO) No. 27, series of 2017 was issued and promulgated to rationalize the Bachelor of Science in Accountancy in order to meet the demands of rapid globalization and transformation of the business environment as it influences the necessities of the workforce later on.

While the paradigm shift generally rewards the educational system, its execution involves quite an effort on the institution to plan, reform and strategize the implementation of the said academic reform. For this reason, it is essential that the accompanying ought to be considered in the preparation and initial stages of OBE implementation: a.) OBE policy manual should have been observed; b.) the academic community especially the instructors and administrators, ought to have a clear comprehension of CHED policies and guidelines on OBE System and at any rate fundamental information and understanding on principles of OBE; and c.) sufficient and effective teaching tools and facilities must be set in place. Under Section 28 of CMO No. 46, s. 2012, it will require HEIs at least two years to shift to a competency-based learning, as such, this paper sought to identify the extent of implementation of the provisions and conditions of an OBE System in the Bachelor of Science in Accountancy Program as well as the problems encountered and success stories realized during the implementation phase.

Findings gathered in this study can serve as bases in the formulation and development as well as implementation of OBE policies, standards and guidelines by the school heads of the higher education institutions.

OBE Framework

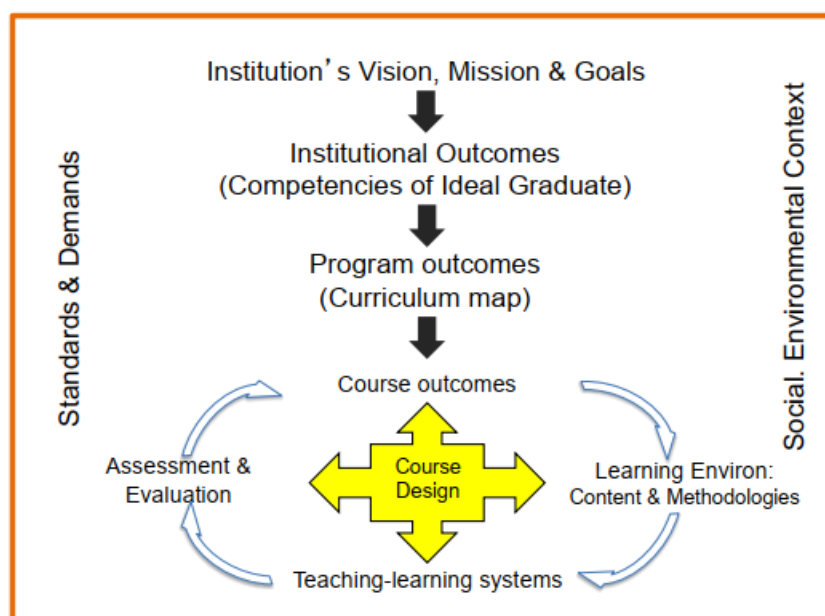


Figure 1. Framework for Outcomes-Based Education

The desired attributes of the HEI graduates are derived from their visions and missions as part of their institutional goals or outcomes and using this as strong foundation in coming up with specific program outcomes. Hence, a well-designed VMG acts as the starting point in drafting the desired outcomes of the institution and supports actions for instruction, research and extension to greatly comply with the requirements of the OBE system (Galera, 2017).

The sets of competencies related to skills, knowledge, and attitudes that are supposed to be displayed by the learners are called program outcomes. Lifelong learning is also emphasized in program as well as institutional outcomes. By way of illustration, the expected attributes of ideal graduates could be described by HEIs five years after their graduation. These desired outcomes must be reflected in students' learning from specific courses. That is why HEI ought to guarantee that at the course level, the ideal course and learning results are accomplished with the best possible content, methodologies and student performance assessment.

Course outcomes allude to the values, knowledge, and skills all students are relied upon to show toward the course completion. Although learning outcomes are usually used interchangeably with course outcomes, it may also result from a specific lesson. In hierarchy, learning outcomes are viewed as building obstructs toward course outcomes, which thusly, bolster the program outcomes (CHED, 2014).

Research Paradigm

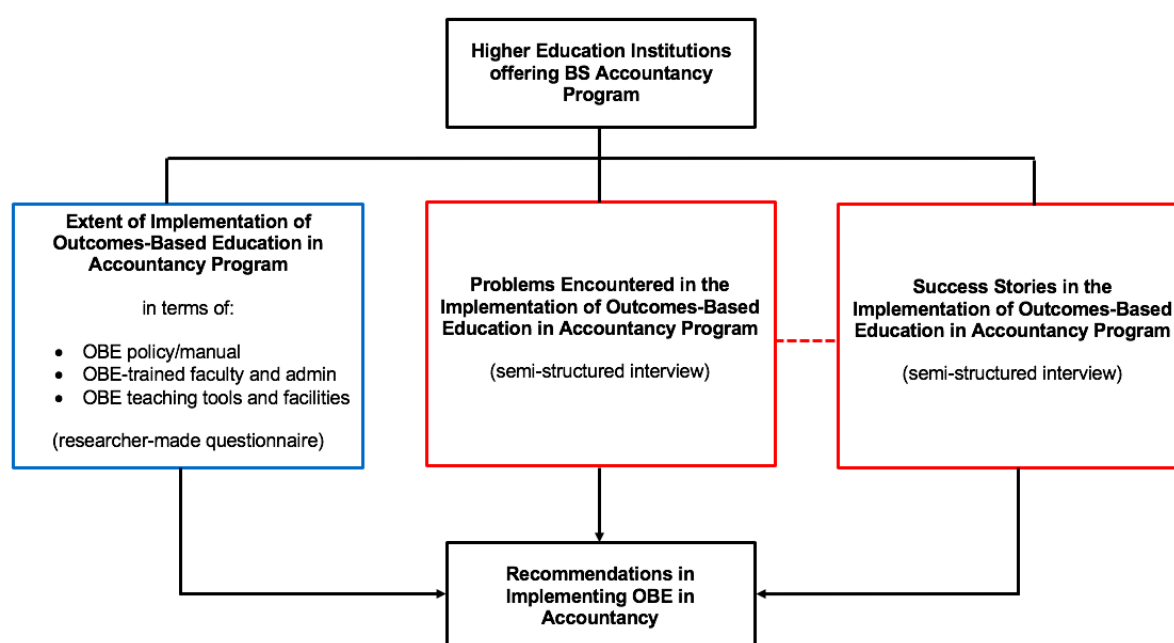


Figure 2. Research Paradigm

This study is a mixed method research that involved collection, analysis and integration of quantitative and qualitative data. This method was employed to gain in-depth understanding of the research data pertaining to the implementation of OBE for Accountancy program.

Quantitative data were obtained to assess the extent of implementation of OBE in terms of the presence or absence of OBE policy or manual, OBE-trained faculty and administrators and OBE teaching tools and facilities through the use of an adopted questionnaire. Furthermore, qualitative data were gathered to identify the success stories and the different problems and challenges encountered in the implementation of OBE using a semi-structured interview guide.

The data gathered in this research were used to arrive with recommendations to strengthen the implementation of OBE for Accountancy program.

Statement of the Problem

This study evaluated the implementation of OBE for Accountancy program in Region 1. Specifically, it sought to answer the following questions:

1. What is the extent of implementation of Outcomes-Based Education for BS in Accountancy program in Region 1 in terms of:
 - a. OBE policy or manual
 - b. OBE-trained faculty and administrators
 - c. OBE teaching tools and facilities
2. What are the problems encountered in the implementation of OBE for Accountancy program?
3. What are the success stories in the implementation of OBE for Accountancy program?

II. RESEARCH METHOD

Research Design. This study has employed quantitative with a descriptive design since it included the elements or interpretation of the meaning or significance of what was described. Qualitative design was also employed since this study intends to seek in-depth understanding of social phenomena within their natural setting.

Population and Locale of the Study. This paper considered three groups of respondents: Dean, Program Head and Faculty members from target HEIs. For purposes of this study, the target HEIs where the population of this study were taken from, are delimited to (1) HEIs offering BS in Accountancy program in Region 1; and (2) Must be considered at least good performing on the majority of the past 5 board exams. This means that those HEIs in Region 1 which at least performed good on the majority of the last 5 CPA Board Exams (October 2017- October 2019), were the target of this study.

Data Gathering Tools and Procedures. An adopted researcher-made questionnaire checklist from the study of Galera (2017) was administered to the intended respondents from Higher Education Institutions in gathering the data that answered and satisfied the first research problem of this study. Specifically, the Likert scale was used in measuring the extent of implementation of Outcomes-Based Education for the BS in Accountancy program in Region 1. Parts of the questionnaire included philosophies of OBE which were expounded in CMO No. 46, s. 2012 and CHED's Handbook on Typology, Outcomes-Based Education and Institutional Sustainability Assessment.

For the second and third research problem, a semi-structured interview guide was employed to identify the problems encountered as well as the success stories during the OBE implementation of the five identified HEIs in Region 1 offering BS in Accountancy program.

Statistical Tool and Treatment of Data. In analyzing the data gathered from the questionnaires, descriptive statistics such as mean and standard deviation were computed to arrive with a final conclusion. These two data analysis procedures were used to identify the extent of implementation of OBE for the BS in Accountancy program in Region 1.

To identify, analyze and report patterns within the data gathered from the interviews, thematic analysis was employed. The information gathered and made concrete through notes and transcripts were analyzed using the 3 C's: coding, categorizing, and concepts proposed by Lichtman (2013). Themes defined were used to report the problems encountered and success stories which were realized in the implementation of OBE for the BS in Accountancy program in Region 1.

Limitations of the Study. The results gathered from this study were interpreted solely on the quantity of the variables that emanate from the responses of the identified population. The quality of such responses was no longer measured. Likewise, only the degree of implementation was measured in this study. The effectiveness of such implementation was no longer assessed.

III. RESULTS AND DISCUSSION

Extent of OBE Implementation

Table 1. *Level of Implementation on OBE Policy or Manual*

Areas/Provisions/Conditions	Mean	SD	Indicator
1. The institutional OBE policy or manual is well communicated to the BS in Accountancy program.	3.3846	.7524	Very Much Implemented
2. The institutional OBE policy or manual is well implemented to the BS in Accountancy program.	3.3462	.7452	Very Much Implemented
3. The OBE Core Group or Team established for the BS in Accountancy program is functional.	3.0769	.9348	Much Implemented
4. The institutional vision, mission and goals where competencies which the BS in Accountancy graduates need to demonstrate after graduation were revisited.	3.3077	.7884	Very Much Implemented
5. The institutional outcomes (competencies of ideal BS in Accountancy graduates) that emanate from the vision, mission and goals of the institution are identified.	3.5769	.5778	Very Much Implemented
6. The specific program outcomes for the BS in Accountancy program that emanate from the institutional outcomes are observed.	3.4615	.6469	Very Much Implemented
7. The required minimum set of program outcomes specific for the BS in Accountancy program are observed.	3.5769	.7027	Very Much Implemented
8. The minimum set of learning outcomes for the Business and Management discipline are established.	3.5769	.7027	Very Much Implemented
9. Course outcomes were formulated for each course or subject.	3.5385	.7060	Very Much Implemented
10. There are learning outcomes formulated for every lesson in the course or subject.	3.5769	.7575	Very Much Implemented
11. The formulated outcomes were expressed in active verbs that are measurable and observable.	3.4615	.7060	Very Much Implemented
Average	3.4441	.7365	Very Much Implemented

Based on the results as presented on Table 1, the average mean score of 3.4441 implied that the institutional OBE policy or manual was very much implemented to the BS in Accountancy program and the low overall standard deviation of 0.7365 indicated that the ratings provided by the respondents were less dispersed, thus, they have a common assessment as to its level of implementation.

It can be noted that the establishment of an operational and functional OBE core group or team for the BS in Accountancy program was only much implemented as evidenced by the mean score of 3.0769. This means that the respondents rated the least for this condition. The creation of OBE core group guarantees that the recommended OBE processes are agreed to and such compliance are correspondingly recorded. Since individual student learning is the desired result of an OBE system, Killen (2000) contends that there should be a focus on attention and efforts through an operational OBE core group which means having people who will be held accountable for the policies they have implemented in tertiary institutions.

The low standard deviations on the cited provisions or conditions under the area of OBE policy imply that ratings provided by the respondents were less dispersed, hence, they have a common assessment as to its level of implementation.

Table 2. *Level of Implementation on OBE-trained Faculty and Administrators*

Areas/Provisions/Conditions	Mean	SD	Indicator
1. The academic officials of the institution are trained on OBE.	3.3846	.7524	Very Much Implemented
2. The dean and program head of the BS in Accountancy are trained on OBE.	3.4231	.7575	Very Much Implemented
3. The faculty members of the BS in Accountancy are trained on OBE.	3.2692	.7243	Very Much Implemented
Average	3.3590	.7381	Very Much Implemented

In terms of the results as presented on Table 2, the average mean score of 3.3590 can be simply interpreted that the requirement for an OBE-trained faculty and administrators of an OBE system was very much implemented. This significantly means that the administrators and faculty members, as referred to this study, had sufficient training on OBE teaching and learning as well as on student-centered instructional delivery.

As the faculty members are at the forefront in the teaching process, they should be able to facilitate learning well through their instructional delivery, hence the need for them to be trained. Again, the respondents have common assessment in this regard as manifested by the low overall standard deviation of 0.7381.

Barr & Tagg (1995) explained that although OBE focuses on a learner-centered paradigm, an equal attention must be given to the academic officials and faculty members as their role cannot be dispensed in designing the learning experiences and learning environment for the students.

Table 3. *Level of Implementation on OBE Teaching Tools and Facilities*

Areas/Provisions/Conditions	Mean	SD	Indicator
1. Facilities and learning resources to implement OBE are sufficient and relevant.	3.1154	.5159	Much Implemented
2. The curriculum following the CHED OBE framework, i.e., course outcomes are aligned with program outcomes, and that learning activities and assessment are aligned with the learning outcomes of each subject or course.	3.5000	.5099	Very Much Implemented
3. Outcomes-based syllabus and learning plans are used.	3.5000	.5099	Very Much Implemented
4. The OBE assessment tools that will measure the attainment of desired competencies are provided.	3.3846	.5711	Very Much Implemented
5. Classrooms are provided, sufficient and utilized.	3.3077	.6177	Very Much Implemented
6. Physical facilities are provided, sufficient and utilized.	3.1923	.6337	Much Implemented
7. Library resources are provided, sufficient and utilized.	3.0000	.6928	Much Implemented
8. Linkages for academic resources are provided, sufficient and utilized.	2.9615	.7736	Much Implemented
9. Teaching and Learning processes are geared towards the attainment of the institutional outcomes, program outcomes and learning outcomes.	3.5000	.5099	Very Much Implemented
Average	3.2735	.6232	Very Much Implemented

As to the level of implementation on OBE teaching tools and facilities, Table 3 provided the average mean score of 3.2735 which means that it was very much implemented. The low overall standard deviation of 0.6232 indicates that the ratings provided by the respondents were less dispersed, thus, they have generally a common assessment as to its level of implementation.

It can be observed that some provisions were only much implemented as evidenced by the mean scores. The mean score of 3.1154 on the adequacy of facilities and learning resources implied that there are some facilities and resources that need to be provided since it was only rated as “much implemented” by the institution. The underlying cause of which is the lack of budget which was claimed by majority of the interviewees. To cite one, an interviewee stated that, “*They tried to address, pero syempre talagang ang pinaka-end point talaga niya is budget. Syempre we can’t work without a budget... ‘Yun ang limiting factor talaga.*” [They tried to address but of course, the main endpoint is budget. Of course, we can’t work without a budget... That is really the limiting factor.] The availability of adequate facilities and learning resources ensures the successful achievement of curricular objectives. Besides, the attainment of designated outcomes requires the utilization of this range of resources which the OBE system needs in leading the students along the most appropriate learning pathway (Griffin as cited in Donnelly, 2007).

Along the provision of other physical facilities and library resources that enhance the teaching and learning process, respondents rated these provisions only as “much implemented” with mean scores of 3.1923 and 3.000 respectively. Similarly, the key factor for the perception that not all conditions were met along these OBE requirements is the financial constraints. Academic resources and support structures strengthen not only the academic and scholarly engagement of learners but also their ability to connect with their companions and network, permitting them to exploit the OBE curriculum.

The networking and linkages mechanism that promotes and supports partnership with other institutions was likewise rated as “much implemented” in accordance with the lowest recorded mean score of 2.9615. This suggests that the provisions or conditions for this area are implemented with few

considerations. Meaning, during the initial stages of OBE implementation, some areas are yet to be complied. The establishment of linkages requires proper support structures (Galera, 2017), this may be the reason why this area was only much implemented as a rippling effect of the lack of support structures. It was concluded in the in-depth analysis conducted by Baum and Oliver (1991), that organizations with established linkages tend to exhibit survival advantage considering the increased competition among academic institutions.

The low standard deviations on the cited provisions or conditions under the area of OBE teaching tools and facilities imply that ratings provided by the respondents were less dispersed, hence, they have a common assessment as to its level of implementation.

Problems Encountered in the OBE Implementation

The knowledge on obstacles of an OBE system and its causes are necessary to continuously update the awareness about problems and issues in education and to support the launch of innovative and effective programs or activities that will help in resolving these problems, paving the way in achieving quality outcomes.

Difficulty in Institutionalizing the OBE Policy or Manual. Since HEIs define their institutions' vision and mission in consideration to the peculiarities of their local and regional needs and opportunities, the quality goals of individual HEIs necessarily differ from each other.

During the implementation of OBE for Accountancy program, HEIs were confronted with difficulty in institutionalizing the OBE policy or manual as a guide in the development of a curriculum and syllabus for Accountancy program intended for the institution's ideal graduates.

Difficulty in the Formulation of Objectives. The achievement of outcomes or objectives is a determinant whether an institution has successfully implemented the OBE system, hence, making its formulation very crucial.

During the implementation of OBE, HEIs were confronted by problems in the formulation of objectives with the course or discipline. These problems included the difficulty in choosing appropriate verbs for the outcomes and the alignment of these outcomes with the course. A well-formulated outcome statement is not easily devised because there should be a persistence in thinking about ways or manners by which learners can possibly manifest the learning complexity that is expected (Lixun, 2013).

Faculty Resistance to Change. Novelties and innovations in structures, programs, or perspectives are continuously introduced into social organizations or institutions with the aim of advancing it. One of the forces that stimulates change is due to increased competition (Robbins & Judge, 2012).

The research found out that there was a resistance on the part of the faculty to adopt the prescribed OBE teaching method since the traditional teaching method has been used by the same for years and that they considered the implementation of OBE as abrupt or immediate. This result is supported by the study of Robbins & Judge (2012) when they claimed that individuals tend to resist change, even in the face of evidence of its benefits due to their "fear of the unknown". This may be the reason why during trainings of faculty and administrators prior to OBE implementation, they seem to check out of the learning process because of the lack of interest and appreciation on the subject matter.

Issues on Human Resources. Faculty constitute the major agents for introducing innovations into the classrooms. To achieve outcomes, the lead implementors should be fully aware of the essence of OBE and the techniques or manner by which lessons should be properly delivered through trainings as they are the human resources that produce ideal graduates.

While trainings were conducted in the initial stages of OBE implementation, HEIs faced dilemma when they experienced a fast turnover of faculty because this would mean losing competent OBE implementors and reaching deeper into the institution's finances for faculty recruitment and their development. In this connection, the schools were inconsistent or worse, have failed to send its faculty to trainings, seminars and orientations for them to become effective implementors of OBE. This was due to the financial requirements of the seminars to be attended which delimited the capacity of schools to send all of its faculty.

Lack of Learning Resources. Books as library resources that are relevant and adequate in terms of quality and quantity are helpful to the faculty as these serve as their reference materials. As to the books with physical embodiment, the study found that these were lacking for the faculty. Similarly, faculty are challenged in looking for available e-books. In the research report conducted by the National Library of the Philippines on the status of Philippine Public Libraries and Librarianship, e-books and e-journals only account 18 % of the learning resources available in libraries, thus, the need for augmentation (National Library of the Philippines, 2018).

The access to internet in schools as a way of accessing e-books and journals was also limited which prevented the faculty and students to explore and acquire range of scholarly information relevant in their study at the convenience of their locations.

Limited Physical Facilities. While the revised PSG for Accountancy program expressly required for the access of multimedia facilities for both faculty and students, these facilities such as projectors were insufficiently provided by schools. Multimedia facilities are necessary as these provide the students chances for interacting with diverse texts that give them a solid background in the tasks and content of college courses thus, leading them to the attainment of the desired skills and competencies.

Likewise, classrooms were also limited. A room when adequately provided, is conducive for learning which is necessary to help students learn easily. Interaction among the learners and with the instructor is important in face-to-face formats (Dell, Low & Wilker, 2010).

Success Stories in the OBE Implementation

Knowing the successes realized in OBE implementation allows an HEI to grow even faster by sustaining these developments. These developments include actions taken to address problems encountered during OBE implementation.

Enhancement of Basic and Technical Competencies. With the infusion of student-centered learning and through the issuance of CMO 27, s. 2017 mandating that more professional subjects should be integrated or embodied in the curriculum, the knowledge of students on the accounting profession was enhanced

Apart from the development of their technical competencies, their basic job competencies such as creativity, communication skills, among others have also improved. The development of basic competencies that would last throughout anyone's career is relevant for the newly trained accountants to effectively carry out his or her work.

Support to Faculty Development. School management became more supportive to faculty development. One of the many ways in developing quality teachers is by sending them to trainings and seminars (Lixun 2013). These OBE trainings and seminars attended enhanced the knowledge and skills of the faculty. To prevent the fast turnover of faculty, opportunities for promotions, scholarships and other incentives were also offered by the HEIs.

Application of New Teaching Practices. With the OBE system, faculty claimed that new practices were enforced to ensure quality of faculty and their teaching strategies. For one, a three-minute paper is given to students at the end of class. This allows students to jot down on paper some anonymous responses to an aspect of that day's class session. With the student feedbacks, improvements in delivering the lesson are imposed on the succeeding classes. Another practice observed is the conduct of make-up classes to students who race against time to comprehend the lessons. In the study of De Guzman, Edano, & Umayan (2017), the accumulation of knowledge from OBE trainings helped in the development of different techniques in assessing student learning.

Constant Acquisition of New Sets of Books. Various HEIs have enforced effective mechanisms to update their existing books to complement curriculum delivery and to optimize the achievement of the program outcomes in the BS in Accountancy program.

Development of Research Skills for Students. The integration of research helps in developing a culture of quality. By using a pedagogical approach of engaging students in research, their knowledge and understanding that could contribute to the broader knowledge foundation of their respective disciplines are widened. In this study, faculty believed that the students' skills in the field of research were developed.

The internet which forms substantial impact research was also provided. As previously mentioned, one of the preconditions for wide variety of research is the access to internet. Golden (2008) claimed that integrating the use of internet resources and electronic platforms in delivery can improve the research experiences of students.

Retooling of Curriculum and Syllabus. The wide gap between what is offered to learners in the classroom or laboratory and what is needed in the real world of work has prompted stakeholders in the academe and in the industry to join hands to explore ways of revisiting the curriculum on a regular basis as well as the syllabus and to align such with the OBE standards.

Institutional Measures Undertaken

Steps undertaken to resolve the problems encountered as well as the ways to maintain the successes realized with an OBE system was likewise noted which can give further light to the study.

Development of Professional Learning Community. As to the institutionalization, updating, and implementation of the OBE policy or manual, higher education institutions continuously employed effective and efficient communication among deans, program heads and faculty members of their respective institutions so that the best teaching- learning strategies or outcomes that would give direction to the institution are always realized. HEIs also coordinated and solicited consultations with partner agencies or institutions to ensure quality of educational plans.

Constant Monitoring of Faculty and Graduates. HEIs warranted the quality of their graduates by continuously monitoring and evaluating them. In so doing, HEIs will be able to continuously improve their policies in the Accountancy program. It is also equally necessary for every HEI to keep track of their faculty to maintain a pool of competent and OBE-trained faculty. While this meant reaching deeper into the institution's finances for the training, the school still sent the newly employed faculty to various trainings as these were needed for their development.

Funding on Instructional Facilities. To resolve issues on OBE teaching tools and facilities, HEIs employed effective mechanisms to provide various facilities and infrastructures to cater the needs of their stakeholders by requesting from the faculty and students a listing of the needed facilities. HEIs also authorized the acquisition of the OBE facilities through the initiatives of faculty and students.

IV. CONCLUSIONS AND RECOMMENDATIONS

Grounded by the results on the level of implementation of Outcomes-based education specifically on the areas of OBE policy or manual, OBE-trained faculty and administrators, and OBE teaching tools and facilities, it can be concluded that the selected tertiary institutions in Region 1 offering BS in Accountancy program have already highly implemented the said provisions and conditions. As a precept of the OBE roll out, an institution should have, after two years of implementation, fully implemented the OBE system. From 2017, when CMO 27, s. 2017 was issued by CHED to present, the Accountancy department of selected institution has successfully invested sufficient time and effort in preparing the program to this paradigm shift to OBE.

However, there are OBE provisions that need to be furtherly strengthened including the creation of a functional OBE core group or team, the sufficiency of learning and library resources, the acquisition of physical facilities as well as the establishment of linkages for academic resources as they were rated the least on the level of implementation. These results were supported in various studies relating to OBE and the answers arising from the interview. Because the OBE core group or team is not well-established, HEIs were faced with challenges on the institutionalization of the policy as basis in the crafting of OBE curriculum and syllabus for Accountancy program. Likewise, faculty encountered difficulty in the formulation of clear and correct objectives that are aligned with the course. One of the steps undertaken by the institution to resolve this issue is through constant communication with the faculty, program head and dean. Additionally, consultations were also sought from partner agencies. As to the requirement for

sufficient learning and library resources and physical facilities, budgets were allocated by the HEIs to address the said issue.

During the initial stages of OBE implementation, issues were encountered on human resources. The area of training was the primary challenge encountered by the higher education institutions in Region 1 mainly because some of the faculty lack interest in learning and some resist the OBE teaching method. Some of the faculty also lack training due to budget constraints. There was also a fast turnover of OBE-trained faculty. To address these issues, OBE trainings were conducted for the newly employed faculty and that opportunities for promotions, scholarships and other incentives were offered as positive reinforcements to minimize the fast turnover of faculty.

The shift to an OBE system was of course expected to draw positive impacts in the education sector. For one, it was believed that basic and technical competencies of students were honed. It was also due to OBE that more knowledge and skills were acquired by the faculty members and that new practices and interventions were employed by the faculty for the students. Lastly, new sets of books which are OBE aligned were procured and the curriculum and syllabus for Accountancy program were continuously revisited.

Other than what were recommended on provisions as stated below, the researcher asserts that HEIs should continuously implement the rest of the provisions or conditions which were perceived to be very much implemented.

Based on the result of the questionnaire as confirmed by the outcome of the interview, it is recommended that HEIs should strengthen the establishment of an OBE core group who would lead in the development of an institutional OBE manual as this condition will sustain the implementation of an OBE system. Consequently, HEIs should establish the requirements for selection of administrators or faculty members who will compose the OBE core group.

For the learning resources and academic materials such as books and so with the curriculum, the researcher recommended that HEIs should develop good practices to ensure that the same are always up-to-date. As a rule, books should remain available for use if the publication date is within five years. Also, the curriculum should always be revisited to keep it attuned with the needs of the students and within the context of the institution's strength, priorities, and commitment.

As regards to the requirement on physical facilities, it is recommended for higher education institutions to relentlessly exert effort to find ways and means in generating the needed funds for the acquisition of such facilities.

Collaboration and partnership with other institutions of higher learning, corporate bodies and other relevant organizations should be promoted by HEIs. HEIs are therefore recommended to strengthen partnership and linkages supported by memoranda of agreement and benchmarking documents.

Along the establishment of a functional OBE core group or team, the Commission on Higher Education should guide tertiary institutions in the selection criteria such as educational qualifications, administrative and supervisory experience, among others, for members to compose the OBE core group. Likewise, the Commission should also continuously ensure that HEIs are compliant with the minimum requirements of OBE. This is done by continuously conducting monitoring and evaluation for the Accountancy program of HEIs on a regular basis. Trainings, seminars and workshops should also be provided by CHED to the faculty members from various HEIs to ensure OBE quality from time to time.

For the future researchers who intend to conduct in-depth study on OBE, the researcher recommends them to employ triangulation of data to confirm and ascertain the reliability of the answers. In this doing, the point of view of the faculty, the administrators and the students are compared and verified. Further, the researcher recommends that broader research participants should be included in the study. Unarguably, the population of the study only emanated from the performing HEIs offering BS in Accountancy program in Region 1. There should also be a comparative analysis on the perceptions of faculty and administrators from both public and private HEIs to know whether a significant difference does exist. Other than assessing the level of OBE implementation, the researcher recommends that the effectiveness of such implementation should also be included in the objectives of the study.

In the realm of education, it is also important to continually evaluate the sustainability of a newly implemented curriculum through longitudinal studies. Long term analysis on the implementation of OBE for Accountancy could render important inputs about the suitability of the same in producing life-long learners, capable in meeting the needs in the international arena. By the time a new researcher conducts a study to reassess the OBE implementation for Accountancy program, it is expected that richer data will already be available such as the data emanating from the first batch of graduates under the new curriculum. With this data at hand, the researcher can validate the claims of this study.

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All the authors are affiliated with Saint Louis University. Immanuel M. Munar, CPA, MSAc, as the primary author of this study, was a graduate from school of advanced studies at said University and Mr. Andrew S. Macalma, MS Psych, MBA, RP, RPh, who is the School Registrar.

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