

Faithful Representation, Productivity, and Profitability of SRA Accredited Block Farms in Negros Island

Noreza A. Causing
University of St. La Salle

The block farm program of the Sugar Regulatory Administration (SRA) has 59 enrollees from 2016 and 2017 in Negros Island. The block farms' degree of compliance to faithful representation as qualitative characteristics of financial information were determined in this study. Faithful representation was measured through a compliance index (TCI) with a summation of three significant indicators of completeness, neutrality, and free from error. Results indicated a Total Compliance Index (TCI) of 0.26, interpreted as low compliance to faithful representation. The results revealed a significant relationship between production cost and productivity, revenue and cane yield, and revenue from sugar and productivity. Compliance with faithful representation and profit also showed a significant relationship, while compliance and productivity showed no significant relationship. Farms should adopt appropriate and generally acceptable accounting practices to enhance the quality of financial information. A practical and uniform bookkeeping system with proper training and support should be available. There is a need to develop practical courses on agricultural technology, farm management, farm accounting, and labor management.

Keywords: faithful representation, financial accounting, farm accounting, block farming, sugarcane productivity

INTRODUCTION

The International Financial Reporting Standards (IFRS) governs how transactions are to be reported in the financial statements. Since users rely on the information in the financial statements to make economic decisions, the financial statements should possess the fundamental qualitative characteristics described in the IFRS Conceptual Framework. The application of the standards is firmer for publicly listed corporations due to the extent to which financial information can reach a wide range of users. However, the standard is uncompromising, even for small and medium enterprises. For as long as some users depend on the information provided by financial statements, the quality of this information should be maintained. Block farms, cooperatives, or small farmers associations have members who need more educational sophistication about understanding financial reports. In this case, stakeholders accept financial reports at face value without evaluating the quality of the information presented. The risk of misrepresenting data will be disadvantageous to members and other cooperative stakeholders. Athanasios, Stergios, and Lskaridou (2010) established in their study that accounting information provided by financial statements will enable farms to make decisions and allow for the optimum allocation of

resources. Farm management should integrate accounting information and introduce the concept to block farm officers.

The distribution of land to small farmers has fragmented the farm sizes, and the overall productivity of the farms has suffered. The block farms consolidated small farms into 30-50 hectares and operated as agribusiness enterprises. The main goal of this project is to “increase productivity at lesser production cost” (Seráfica, 2017). The block farms accredited by the Sugar Regulatory Administration (SRA) in 2017 reached 66, with 45 block farms in the Visayas alone (Seráfica, 2017). The block farm program will provide assistance to cover labor costs, fertilizer, lime, sugarcane technology, and farm mechanization support.

Productivity is akin to yield, while financial returns determine profitability. The block farms, having been organized and supported by SRA, are recipients of technological support that focuses primarily on increasing the productivity performance of the farm. Increasing productivity is assumed to lead to higher profits. This study tested this relationship to consider that factors measuring productivity differ from profitability. To further enhance the establishment of this relationship, the researchers first verified that profitability faithfully represents the business events that transpired. This study aimed to determine how the business transactions of SRA-accredited block farms in Negros Occidental are faithfully represented in the financial statements in order to measure profitability and productivity reliably.

This study will benefit the Sugar Regulatory Administration (SRA) as it can illuminate the issues faced by block farms across Negros Island regarding SRA interventions and facilitate policy adjustments to address these challenges. The results of this study can help SRA formulate other programs geared toward the development of block farms in terms of business management and financial reporting. SRA can increase productivity through interventions only if they organize small farmers and Agrarian Reform Beneficiaries (ARB) into cooperatives or associations. The effect of these interventions, translated into profit and productivity, will be an effective communication tool in educating small farmers and ARBs to support block farming.

REVIEW OF RELATED LITERATURE

Financial Reporting

The need for accounting information varies depending on the needs of the users. The present and potential owners have investment decisions to make as well as control decisions (Christensen, 2010). Most often, the demand for financial information is dictated by future cash flows (Christensen, 2010), especially from the perspective of the owners or investors (and potential owners or investors). The sensitivity to the quality of financial reporting affects how investors behave. The study conducted by Biddle, Hilary, and Verdi (2009) showed that firms with higher reporting quality are less likely to deviate from their predicted level of investment. In the same study, the authors defined financial reporting quality as the precision with which financial reporting conveys information about the firm’s operations, particularly its expected cash flows, that inform equity investors (Biddle et al., 2009). Accounting information benefits agricultural farms, as it is believed to enhance farm management and contribute to better farm performance, according to studies by Leuning (1989) and Allen (1994) (as cited in Argiles & Slof, 2001). Farmers often do not prepare financial statements and, at some point, will use accounting information if they believe it will be helpful to them (Argiles & Slof, 2001). This can be attributed to a lower level of managerial sophistication, the need for economic means in the agricultural sector, and the limited appropriateness of general accounting principles, leading to inefficient agro-informative panels (Athanasios, 2010).

Qualitative Characteristics of Financial Information

Financial information is useful when it is relevant and represents faithfully what it purports to represent. The usefulness of financial information is enhanced if it is comparable, verifiable, timely, and understandable (IASB, 2018: 2.4). Qualitative characteristics are those features that give utility and value to the information presented in the financial statements and connect the objectives of the financial

reporting and the requirements from accounting standards, by separating the useful information from the unnecessary ones (Gâdău, L. (2012). These characteristics can simplify users' decision-making problems since the focal point of the conceptual framework is the comparative advantage of accounting (Christensen, 2010). Another study discussed the role of quality information in the decisions made by managers (Puig-Junoy & Argiles, 2002). The study related modern information as accounting information and how it is assumed to affect planning, implementation, and control that could shape the organization's decisions, practices, and performance despite the observed low use of accounting information in the agricultural sector. Tomaszewski et al. (2000), as quoted in Puig-Junoy and Argiles's (2002) study, performed a regression analysis on the impact of management information systems in improving profit and performance in sow-herd and dairy farms. Researchers have not yet conducted a conclusive study to directly measure the impact of management information systems on sugarcane farm performance.

Faithful Representation

The fundamental qualitative characteristics of useful financial information are relevance and faithful representation (IASB, 2018). Faithful representation means a representation of the substance of an economic phenomenon instead of a representation of its legal form only, and it seeks to maximize the underlying characteristics of completeness, neutrality, and freedom from error. (IASB, 2018: 2.12-13). In the study conducted by Man and Gadau (2012), a rearrangement of the hierarchical importance of the qualitative and enhancing characteristics was made based on how the authors perceived the impact of these characteristics on information usefulness. The authors argue that comparability and intelligibility should not be relegated to secondary characteristics, as the relevance of information is directly tied to its comparability. The reliability of financial information has been replaced by faithful representation. It carries completeness, neutrality, and freedom from error (IASB, 2018:2.13). The accounting system results from a delicate balance of the possibilities embedded in the accounting system and the demands of the users (Christensen, 2010). Al-Dmour, Abbod, and Al-Qadi (2017) did a study on the impact of the quality of financial reporting on non-financial business performance. The authors went beyond the traditional financial performance indicators to determine other non-financial factors that also play a crucial role in business management. These non-financial factors are value drivers like customer and employee satisfaction, innovation, and quality. Selvarajan et al. (2007) as quoted in Al-Dmour, Abbod, and Al-Qadi (2017), stated that non-financial measures of performance could provide data on developing plans concerning customer needs, competitors, and other non-financial targets.

Like the traditional financial indicators, these other factors rely on the financial statements. Thus, financial reporting quality is essential. Lambert et al. (2007), as quoted in Al-Dmour, Abbod, and Al-Qadi (2017), highlighted the benefits of high-quality financial information as it guarantees the reduction of information risk and liquidity. Al-Dmour, Abbod, and Al-Qadi (2017) established four significant factors that determine the quality of financial reporting in their study. These are (1) Understandability, (2) Relevance, (3) Comparability, and (4) Faithful Representation. The results indicate a significant relationship between the quality of financial reporting and non-financial business performance; thus, the higher the quality of financial reporting, the higher the non-financial performance indicators. The study indicated the impact of quality financial reporting that causes 62% of the company's non-financial performance variance.

Importance of Accounting Information in Agriculture

The paper entitled *New Opportunities for Farm Accounting* by Josep Maria Argiles and Eric John Slof (March 2001) postulated that since farmers only sometimes prepare financial statements, they consider the benefits of accounting reports outweigh the cost and effort of preparing them. Unless accounting information is already available to them by the Farm Accounting Data Network (FADN) in the European Union, farmers will not be able to use the information. The authors implied that accounting can improve farm management, leading to better performance. Vazakids Athanasios, Athianos Stergios, and Ekaerini Laskaridou (2010) also concluded in their study on the importance of accounting information in the agricultural sector in Europe that accounting information provided by financial

statements would enable farmers to make decisions and allow the optimal allocation of resources. Argiles and Slof (2001) further observed that the farms used different accounting practices regarding revenue recognition, expenses, and treatment of subsidies. The farms interviewed expressed willingness to follow Generally Accepted Accounting Principles (GAAP) but need help applying these to actual practice.

Farm Productivity and Profitability

Since the introduction of block farming in 2012 by the Sugar Regulatory Administration in collaboration with the Department of Agriculture and Department of Agrarian Reform, all pilot block farms showed an increase in productivity that ranged from 7.47 % to 100%. Pilot sugar block farms in Negros Island posted an average increase of 29% in farm productivity (or an increase from 50.78 tons per hectare to 65.29 TC/Ha) for the crop year 2013-2014 (Mena Report, August 18, 2017). DAR and the SRA provide capacity-building, technical assistance, farm planning, and farm management support, which contributes to the increase in productivity.

Profitability

In Hassan's (2002) study, researchers analyzed the performance of different farming systems in Bangladesh using gross margin. The residual income represents the net farm income after deducting fixed inputs. Hassan (2002) further presented other measurements like Operator's labor and management income as being the difference between the value of net farm income and the opportunity cost of operating capital, as well as Returns or labor per hour measured as the difference between the gross output and cost of all other inputs except labor cost, divided by the total labor hours. Evaluation of cost items was necessary to compute the relative profitability of crops. Some unpaid inputs like family labor, home-supplied animal power, and manures were measured using opportunity cost (Hassan, 2002). The study on the sustainability of small-holder sugarcane-based production systems in Sri Lanka by Keerthipala (1997) analyzed the critical technical, managerial, and economic factors of the long-run sustainability of the small-holder sugarcane-based production systems at the three main sugar mill areas in Sri Lanka. The results indicated that the productivity of sugarcane farming and sugar processing is mainly affected by technical/management factors and profitability by both technical/management and economic factors.

Productivity

Measures of crop yield most often assess the productivity of crop agriculture. These measurements are expressed as product per unit of land, labor, fertilizer, seed, insecticide, tillage, and irrigation (Reza et al., 2016). The elasticity of an input indicates the percentage increase/decrease of the quantity of that input with a specified level of other inputs (Reza et al., 2016). The study concluded that an increase in inputs negatively impacts total crop production. This result is corroborated by another study that shows that efficient management of inputs like human labor, machines, fertilizers, insecticides, and plots' size improves sugarcane productivity in India (Upreti & Singh, 2017). A separate study in the same region shows that technical efficiency has indicated that sugarcane yield could be improved by up to 20 and 23 % through better crop management practices. Technical efficiency of sugarcane farms is likely to be increased when constraints such as non-availability of farm laborers, high wage rate, water scarcity, high price cost of fertilizers, and low cane price are overcome (Murali & Prathap, 2017).

A study published by the International Society for Southeast Asian Agricultural Sciences (ISSAAS), titled Farm Size and Its Effect on the Productive Efficiency of Sugarcane Farms in Central Negros (cited in Padin, 2014), showed that average optimum land size should be around 41 hectares. Modernization of farm practices can improve productive efficiency, while consolidation of small farms into larger areas through block farming can improve productivity (Padin, 2014).

Theoretical Framework

The distribution of land to small farmers brought about by the government's Agrarian Reform Program changed the structure of agricultural land ownership and production capacity. Small farmers

operated at the level their physical and economic capacity allowed, likened to that of a subsistence farmer introduced in Boserup's theory. Following Boserup's theory, agricultural productivity did not follow the increase in the number of small farmers, probably due to the behavior of subsistence farmers that react only to household needs in determining the technology to use in their agricultural practices (Boserup, 1981, as cited in Fischer-Kowalski, 2014). Land distribution to farmers without the corresponding government assistance created labor and land use inefficiencies.

The downtrend in agricultural production due to inefficient land use has triggered external intervention, particularly from the government. The function of technology to drive production became the starting point in designing support for small farmers, confirming the 1981 model of Boserup. The latest agricultural technology is offered and packaged to small farmers, improving land use efficiency. Moving the subsistence farming mentality to commercial farming can be considered the height of agricultural innovation. Agricultural innovations may take the form of better farm management practices, mechanization, improved crop varieties, landesque capitalization, and the application of agricultural economics.

The challenge of the current agricultural development lies in the individualistic perspective of small farmers endowed with farmlands through land reform. Organizing farmers into associations and cooperatives is a significant step for improved and assisted agricultural practices that can eventually spur sustained agricultural productivity. This study applied Boserup's models to determine if technological improvements can still drive productivity (and to what extent) to sustain farmers in the current agricultural condition and to what extent.

Conceptual Framework

The block farms organized by SRA are the subject of the study. They are characterized by demographic profile: location, number of years organized as a cooperative and block farm, number of members, total land area, land area planted with sugarcane, and farmland characteristics and topography. The researchers correlated the demographic profile of block farms with farm performance, using revenue, cost, profit, and productivity. However, the study evaluated revenue, cost, and profit measurements based on the completeness of data presented in the financial reports. In this study, faithful representation was measured through the level at which assets, liabilities, equity, revenue, and expenses were recognized in the financial statements; the completeness of the recording of all business transactions; documents supporting recorded transactions; absence or low level of error in the recording of financial events; and consistency of recording of financial events. The level of faithful representation was indexed using a total compliance index (TCI) developed by Muhammad Jahangir Ali in 2004 as a model.

As to productivity, farms were measured as to increments in tonnage per hectare and Fifty Kilogram Bag per ton cane from pre-block farm operation to latest block farm data. Using land, machinery, or equipment is simply the productive use of available land, where idle lands are measured against the total land area. A correlation study was done to establish any relationship between profitability and productivity as well as cost of production and profitability. Figure 1 illustrates the schematic diagram of the conceptual framework of this study.

METHODS

Research Design

The descriptive-relational design approach was used to answer the general objective of this study, which is to determine how the business transactions of block farms are faithfully represented in the financial statements to measure their profitability and productivity. This method analyzed the gathered data to provide an overall understanding of the variables and conditions under study. The quantitative method presents data as measured values used in analyzing relationships between variables.

Data Source and Variables

The cooperatives or associations of small sugarcane farmers organized into block farms by the Sugar Regulatory Administration (SRA) around Negros Island, who are beneficiaries of the 2016 and 2017 SIDA fund, were participants in this study. There were 59 block farms enrolled in 2016 and 2017, and all of them were included in the study. The researchers reviewed block farms' financial statements, documents, and records to determine the faithfulness with which financial information is represented in their financial statements. Completeness, neutrality, and free from material errors were the qualities examined in the review of the documents. The descriptive research design was deemed appropriate for this purpose. The participation of the Sugar Regulatory Administration (SRA) was in the form of providing information on industry data, the current status of the program, and a summarized report on the performance of the block farm both financially and operationally.

Statistical Treatment of Data

The data gathered were processed and presented following the sequence of the objectives in this study. The data was run using the SPSS program. The data were then subjected to statistical treatments depending on the requirements of the objectives. The descriptive aspect of the study was processed using descriptive statistics of central tendencies and frequencies. In measuring the extent of the application of faithful representation of business transactions of block farms in the financial statements, a compliance index was used using the Total Compliance Index (TCI) developed by Muhammad Jahangir Ali (2004) model. Indicators for measurement were identified with scores of 0 and 1, zero being non-compliant and one (1) being complied. The total compliance index (TCI) was then calculated as the ratio of the total score (sum of each requirement score) to the expected number of items required for faithful representation. Therefore, a TCI with a percentage of compliance to faithful representation has a minimum score of zero, indicating noncompliance, and a maximum of 100 percent as full compliance with all relevant indicators of faithful representation.

$$TCI = \frac{\sum IS}{PS}$$

where: TCI = Total compliance index
IS = Individual scores per indicator
PS= Perfect score (as applicable)

The TCI score was interpreted as Full Compliance (score of 1), High Compliance (0.70 – 0.99), Moderate Compliance (0.40 – 0.69), Low Compliance (0.10 – 0.39), and No Compliance (0.00 – 0.09). The indicators included in the index instruments were grouped according to the requirements of faithful representation in the 2010 Conceptual Framework: Completeness, Neutrality, and Free from Error, with maximum scores for these elements of 10, 6, and 6, respectively. Individual scores under each criterion were measured based on relative materiality. The effect of inappropriate exclusion, inclusion, or erroneous computations should not exceed 5% of the account's total balance being measured; otherwise, a zero point was given.

A relational study was made to establish a relationship between variables. The revenue, cost of production, and productivity among block farms were correlated against their demographic profile to determine significant relationships. The relationship between revenue and the farm's demographic profile was statistically measured to establish whether revenue is affected by the number of years the organization was established, the number of members, the number of years as a block farm, land area, and land physical characteristics. The researcher conducted the same relational study for the cost of production and productivity, as well as profitability and productivity. In both cases, it was assumed that farm efficiency affects both variables. The Pearson Product Moment Correlation Coefficient (Pearson's r) and Eta Correlation were used to test linear relationships. Test for significant differences in productivity of farms prior to SRA intervention and after was done using t-test.

RESULTS AND DISCUSSIONS

Profile of Block Farms in Negros Island

The farms were initially organized either as a cooperative or an association. Most block farms participating in the study were organized into cooperatives or associations between 2011-2015 and 2016-2017 at 53% and 20% of the total participants. Out of the 59 block farms in Negros Island, 66% consisted of Agrarian Reform Beneficiaries (ARB), while small non-ARB farmers operated the remaining farms. A total of 1,966.60 hectares of sugarcane lands were enrolled in the SRA Block farms in 2016 and 2017. These block farms have an average of 33.3322 hectares. Of the total block farmland area, only an average of 26.8182 hectares were planted in the crop year 2018-2019, translating to a sum of 1,528.6385 hectares. On the average block farm area of 33.3322 hectares, farmers cultivated approximately 10.6912 hectares with new plants and 18.7060 hectares through ratoon cropping.

Faithful Representation

A block farm is an organized entity that derives its strength from the combined efforts of its members, along with the assistance and support of external parties. Faithful representation is a qualitative characteristic that makes financial information valuable for decision-making. Biddle, Hilary, and Verdi (2009) concluded in their study that the quality of financial reporting affects how the investors behave, and in this case, the Sugar Regulatory Administration (SRA) as the implementer of the block farm project as well as other stakeholders of the sugar industry. The study revealed that block farms in Negros Island have an average Compliance Index (TCI) faithful representation of 0.26, which is interpreted as having low compliance (see Table 1). Scores ranged from 0 to 0.65, the highest and interpreted as having moderate compliance. The TCI derives from three elements of faithful representation: completeness, neutrality, and free from error. Breakdown of the TCI on a per-element basis consistently shows low compliance.

Completeness

The researcher derived scores for completeness by examining how block farms report their assets, liabilities, and equity in financial statements. It was observed that most farms needed to prepare financial statements, especially those organized as cooperatives or associations in 2017. For those who presented financial statements, probing the existence of other assets, liabilities, income, and expense accounts was verified if reported, as well as the completeness of the reported amounts. Seldom did block farms report government grants, and some who recognized the grants incorrectly classified them as liabilities. Individual farmlands comprising the block farms were not presented as assets of the block farm contrary to the recognition criteria of substance over form. Some farms have loans under the Agrarian Production Credit Program (APCP) of the Department of Agriculture and the Department of Agrarian Reform through the Land Bank of the Philippines. Since the program is to provide funds for individual ARBs as loans through their cooperative or association, the loans mainly needed to be recognized in the books. The cooperative or association treats the loan as a financing activity, where the entity earns commission or interest on the amount granted to the members. Block farms reported revenues partially. The company received commodities in exchange for services, which constitute non-cash revenue activities. The books only reflected the values of these commodities if they were sold for cash. However, the corresponding cost of sales should have been reported. The index score for completeness is at an average of 0.15, meaning low farm compliance.

Neutrality

Verifying reported transactions and conducting independent audits were used to assess neutrality. Documents supporting the reported accounts taken have objective proof of neutrality. Conduct of independent audits by external parties (CPA or non-CPA) is also a test of neutrality. The farms scored low compliance under this category at a mean of 0.38. The farms required more organized record filing; most receipts could not be traced, and vouchers needed to be prepared. External audits were infrequent,

and for block farms with financial statements, no actual independent audit by an independent accountant occurred.

Free From Error

Measuring “free from error” was based on the absence of discrepancies in the assets between the amount reported and the unreported. The study focused on assets, operating under the premise that when assets are reported accurately, the other elements of financial statements will also be reported. The function of internal review and its frequency were taken as important factors to minimize errors. These criteria, therefore, are included. The farms achieved a mean score of 0.36, indicating low compliance. The summary of the compliance index appears in Table 1.

**TABLE 1
COMPLIANCE INDEX FOR FAITHFUL REPRESENTATION**

	Completeness	Neutrality	Free from Error	Compliance Index (TCI)	Interpretation
N	59	59	59	59	
Mean	0.15	0.38	0.36	0.26	Low compliance
Minimum Score	0	0	0	0	No compliance
Maximum Score	1	1	0.83	0.65	Moderate compliance

Accounting Errors

Frequent internal review reinforces the completeness and correctness of recorded transactions. Data shows that 42% of the farms do not conduct internal reviews of transactions, while 25% conduct monthly reviews. Frequent and consistent reviews can arrest erroneous transactions before they become forgotten and bear subsequent errors. Farms had auditors in their line of officers, but they required functionality. The need for more training for auditors to apply their functions properly accounts for this situation. Auditors were not included in bookkeeping training in some farms. The auditor must know the accounting process for accounting review to be done appropriately. Equipping the auditors with knowledge of the farm accounting system will be beneficial in mitigating recording errors as soon as possible.

Reasons for Not Complying With Faithful Representation

The block farm encountered many challenges with bookkeeping. Table 2 summarizes the problems raised by the farms. Generally, the problems lie in the need for more training for farms to understand and operate an appropriate record system. On top of the list is the expressed need to establish a recording system without specifying a structured accounting system that the farms do not quite comprehend. Customizing an accounting system for block farms and patterning the bookkeeping training around this system may enable the farms to adopt bookkeeping processes more efficiently and appreciate and understand the system.

The commission of various accounting errors by block farms can be attributed to a lack of training and comprehension of accounting. The non-recognition of significant transactions in their books, or that recognition needed to comply with generally accepted accounting practices, affects the quality of reports the farms produce. These reports are vital in assessing the performance and condition of the farm from the point of view of the members and stakeholders (like the SRA). Depreciation of assets is often not recorded and is related to the non-recognition of assets in the books. Table 1 shows low compliance in one element of faithful representation, which is completeness, corroborating this observation. Inappropriate recording of loans, grants, expenses, and revenues requires accounting instructions. The farms needed to fully comprehend the appropriate use of supporting documents like vouchers and receipts and the procedures for issuing, approving, recording, and filing these supporting documents.

TABLE 2
CONTRIBUTORY FACTORS FOR NOT COMPLYING WITH
FAITHFUL REPRESENTATION

Issues	<i>f</i>
Accounting system:	
Need for the establishment of a system of recording	11
Order of recording transaction not followed	5
Inconsistency in the use of receipts and vouchers	2
The accounting system should be suited for farmers' use	1
Recording process:	
Need to understand the bookkeeping process	4
Do not know how to use accounting books	4
Do not know what accounting title to use	2
Incomplete records and data	3
Accounting literacy:	
Additional bookkeeping training	10
No training for the preparation of financial statements	2
Internal control:	
No system of audit	1
Dependency on the treasurer's record	1
Business management:	
Need training for cash management and financial literacy	2
Total Responses	48

Revenue Performance of Block Farms

Revenues From Sugarcane

Studying the revenue performance of block farms in Negros Island was based on the latest data for crop year 2018-2019. The study differentiated the revenue performance of farms with new plants and with ratoon, both under SRA's technical advice. The gross revenue presented in this study includes the revenues from sugar (all classes), sales from molasses, and other allowances received by the farms. Table 3 shows the average sales revenue of block farms, differentiated between new plant and ratoon. Since not all block farms could cultivate using new planting materials and ratoon, averages were computed with only the particular farms under each category. The data shows an average of 10.6912 was planted under the new plant, while 18.7060 were under ratoon. The new plant's average net revenue is 50.50% of gross sales, while ratoon posted a 62.20% net revenue, or a difference of 11.7%. Statistically, the net revenue of the new plant and ratoon show a significant difference at a t-value of 4.397, $p < .05$, at a 5% significance level.

Cost of Production

Net revenue was dragged down by the average cost of production, which is expected to be higher in the new plant (49.5%) than in the ratoon (37.8%). Statistically, there is no significant difference in cost of production between the new plant and the ratoon at a t-value of 0.720, $p = 0.475$, at the 5% level of significance. This can be attributed to the uniform application of farming techniques and controlled budget under the block farm program.

TABLE 3
AVERAGE REVENUE DATA OF BLOCK FARMS FOR CY 2018-2019

	New Plant		Ratoon		Aggregate	
Gross Sales	₱ 1,768,834	100.0%	₱ 2,622,881	100.0%	₱ 3,973,313	100.0%
Cost of Production	876,282	49.5%	991,119	37.8%	1,665,533	41.9%
Income from Sugarcane	₱ 892,552	50.5%	₱ 1,631,761	62.2%	₱ 2,307,780	58.1%
Land Area (Hectares)	10.6912		18.7060		26.8183	

Block Farm Productivity

Productivity per Hectare and Sugar Yield

A slight increase in the average ton of cane per hectare is observed in farms with SRA intervention at a rate of 8.67% (Table 4). Statistically, the values of ton cane per hectare prior to and after the SRA intervention were tested for significant differences. The analysis resulted in a t-value of 3.634 and $p=0.001$ at a 5% significance level, signifying a significant difference between TC/Ha before and after SRA intervention. Comparing the TC/Ha of the block farms at 49.8437 with the industry average of 58 Tons of Cane/hectare (USDA, 2019) for crop year 2018-2019, the performance of the block farms with intervention is low. Another indicator of land productivity is the Lkg/Ha or the 50-kilogram bags of sugar each hectare produces. In Table 4, Lkg/Ha increased by 16.36% when comparing farms during periods without SRA intervention and with intervention. The mean Lkg/Ha of farms without intervention was 80.76, while 93.96 of those with SRA intervention. Lkg/TC indicates the volume-by-volume conversion of harvested canes into sugar. Table 4 shows that Lkg/TC increased from 1.7814 to 1.8858, or 5.86%.

TABLE 4
PRODUCTIVITY OF BLOCK FARMS (MEAN VALUES)

Categories	Before SRA Intervention	After SRA Intervention	Percent Change
Tons Cane/Hectare (TC/Ha)	45.8658	49.8437	8.67%
Lkg/Ton Cane (Lkg/TC)	1.7814	1.8858	5.86%
Lkg/Hectare (Lkg/Ha)	80.7570	93.9656	16.36%
Hectares Harvested	34.1682	27.6148	-19.18%

N=57

Correlational Analysis

Cost of Production and Productivity

Correlating production cost with different measures of productivity of block farms revealed significant relationships for TC/Ha and Lkg/Ha at p -value $a \leq 0$. The results show a positive moderate correlation between the cost of production and TC/Ha and Lkg/Ha at .679 and .615, respectively. The average production cost of the block farms was P1,663,148 for the crop year 2018-2019, or an average per hectare cost of P61,995.43. The SRA's intervention through guidance and coaching may have impacted the farms' crop management, resulting in efficient cost management that significantly impacts crop and sugar yield.

Revenue From Sugar and Productivity

Revenue generated from sugarcane production results from effective and efficient farm management and the efficiency of sugar mills for sugar recovery. A study conducted in Sri Lanka (Keerthipala, 1997) concluded that technical and management practices and economic factors affect profitability. Productivity, however, is due to technical and management factors. The average net revenue from sugar block farms in the crop year 2018-2019 is P82,458.71/hectare. The revenue and cane yield per hectare (TC/Ha) show a strong positive correlation at $\rho=0.774$, while sugar yield per hectare (Lkg/Ha) shows a moderately high correlation at $\rho=0.638$. The relationship between revenue from sugar and productivity is significant at $p \leq 0$ for TC/Ha and Lkg/Ha.

Faithful Representation and Profitability

Studies by Argiles and Slof (2001), as well as Athanasios, Stergios, and Laskaridou (2010), underlined the use of accounting information for decision-making and impacting farm performance (Argiles & Slof, 2001). Accounting information's usefulness is enhanced when it faithfully represents what truly happened and is complete, neutral, and error-free (IASB, 2018). The results on the compliance of block farms for faithful representation were low at a TCI of 0.26 (Table 1). When testing the relationship between compliance and profit, the results showed a significant relationship at a p-value of 0.045 and that compliance negatively affects income from sugar at $\rho= -0.267$.

Faithful Representation and Productivity

The study of Al-Dmour, Abbod, and Al-Qadi (2017) recognized the importance of measuring non-financial indicators in assessing a company's performance. These non-financial indicators were said to be significantly affected by the quality of financial reporting, attributing 62% of the variance in non-financial performance. Applying the same premise in this study by attributing productivity as a non-financial indicator, the results show no significant relationship at a p-value of 0.396. In this study, block farms are relatively young and have low compliance with faithful representation. The data in Table 2 considered the lack of an appropriate farm accounting system and the need for bookkeeping training as the most prevalent reasons for not complying with faithful representation. The farms need accounting literacy to appreciate the utilization of accounting information for farm management.

CONCLUSIONS AND RECOMMENDATIONS

Faithful representation of financial information is a qualitative characteristic that makes financial information valuable for decision-making. Compliance by farms was low at a TCI score of 0.26. Farms scored 0.15 for the completeness of records, indicating that they lacked an organized recording system and did not recognize the books' assets, liabilities, revenue, and expenses. Neutrality and free from error scored 0.38 and 0.36, respectively, as low compliance. Accounting functions were rarely separated, and external audits of reports needed to be more frequent. Internal auditors did not function in properly reviewing transactions, partly due to a lack of training and knowledge of the accounting process. Faithful representation and profitability show a significant relationship at a p-value of 0.045, meaning the higher the compliance, the lower the profit. In the accounting context, the recognition of depreciation, amortization, and accrual of revenue and expenses mainly needed to be followed to prevent misstatements in financial reports. However, there was no significant relationship between faithful representation and productivity.

Block farm productivity was presented as ton cane yield per hectare (TC/Ha), sugar yield as 50-kilogram bag per ton cane (Lkg/TC), and sugar yield per hectare (Lkg/Ha). A comparison between the year prior to the SRA intervention and the current intervention was made, and TC/Ha increased by 8.67% (from 45.8658 to 49.8437 TC/Ha). Correspondingly, sugar yield per ton of cane harvested posted a 5.86% (1.7814 to 1.8858 Lkg/TC) increase per hectare sugar yield at 16.36% (80.7570 to 93.9656 Lkg/Ha). A productivity improvement was noted despite the decrease in land area planted and harvested of 19.18%

(34.1682 to 27.6148 hectares). After conducting the t-test analysis, SRA intervention was attributed to the change, resulting in a significant difference with a p-value of 0.001.

Revenue and productivity are intertwined, disproving the null hypothesis that no significant relationship exists between profitability and productivity. The revenue from sugar exhibited a significant correlation with the tonnage of cane harvested per hectare and the sugar yield per hectare. Therefore, any increase in yield will result in a corresponding increase in profit. Ton cane harvested per hectare is the total of factors like cane variety, farm practices, maturity of cane, manner of harvesting, loading and transporting of canes to sugar mills, and the efficiency of sugar mills for sugar recovery.

However, production cost is more sensitive to internal farm management practices and how farms manage resources and inputs for optimum productivity (Upreti & Singh, 2017). A study conducted by Reza et al. (2016) concluded an inverse relationship between the increase in inputs and the total production of crops. The result of the study, however, revealed a moderately high positive correlation between productivity and cost of production at a p-value of 0.679 for TC/Ha and 0.615 for Lkg/Ha. The relationship between production cost and these two productivity measures is significant. An increase in the cost of production (including farm inputs, labor, fertilizer, and machinery) positively affects productivity.

Recommendations

One must consider the marked deficiency in proper accounting and reporting practices among block farms to improve the program. Concepts of management and appreciation of its elements should be introduced in order to mold the mindsets of the farmers in embracing the potential of the farm as a business enterprise. Appropriate and generally acceptable accounting practices should be adopted so farms can faithfully present the results of their operations. This will enhance the quality of accounting information used for decision-making, policy formulation, and planning by various stakeholders. Specifically, the following recommendations in enhancing faithful representation through bookkeeping practices:

Design an accounting system specially adapted for sugarcane farming. The accounting system should be simple, practical, and easily manipulated by any assigned block farm member. SRA should conduct intensive practical training in small targeted groups that simulate farm transactions. At the minimum, farms should ensure the participation of the treasurer, bookkeeper, and auditor. Block farm assigned technical personnel of SRA should also undergo the training as part of their role as support, trainer, and monitor. The organization should optimize the role of auditors.

SRA should prepare a uniform start-up bookkeeping kit for enrolled block farms. This kit contains a simplified instruction manual, chart of accounts, books of records, vouchers, receipts, and recommended personnel to be assigned in the accounting system. Monitoring and follow-through should be incorporated into the tasks of the assigned technical personnel for the block farm. Create a data network to be managed by the Sugar Regulatory Administration, where accounting information on block farms will be available for the use of the farmers, policymakers, academe, researchers, and other stakeholders. The data network can help prepare strategic plans, predict future outcomes, and serve as a baseline for evaluating performance.

Create short agricultural courses that will develop valuable farm expertise. Farmers should be able to take farm management, farm accounting, cost management, labor management, machinery operation, organic farming, safety and wellness, and other skills training courses. Encourage more research to further improve farm management, productivity, and cultural development that can impact sugarcane farming. Substantial budget allocation for research will make it attractive to government and private individuals to pursue essential studies and investigations.

Expand the existing research over several crop years to establish farm performance comparisons over time. Future research that evaluates block farms that graduated from the 2-crop year SRA intervention will measure the program's long-term efficacy.

REFERENCES

- Ad-Dmour, A., Abbod, M., & Al-Qadi, N.S. (2017). the impact of the quality of financial reporting on non-financial business performance and the role of organizations demographic attributes (type, size and experience). *Academy of Accounting and Financial Studies Journal*, 22. Retrieved from <https://www.abacademies.org/articles/the-impact-of-the-quality-of-financial-reporting-on-nonfinancial-business-performance-and-the-role-of-organizations-demographic-at-6981.html>
- Argilés, J.M., & Slob, E.J. (2001, March). *New opportunities for farm accounting*. Barcelona, Spain: University Pompeu Fabra. Retrieved from http://www.asepuc.org/banco/fair_value_and_historic_cost_accounting_of_biological_assets.pdf
- Athanasios, V., Athianos, S., & Laskaridou, E. (2010). The importance of information through accounting practice in the agricultural sector - European data network. *Journal of Social Sciences*, 6(2), 221–228. ISSN: 1549-3652.
- Biddle, G.C., Hilary, G., & Verdi, R.S. (2009). How does financial reporting quality relate to investment efficiency? *Journal of Accounting and Economics*, 48(2–3), 112–131. Elsevier.
- Christensen, J. (2010). Conceptual frameworks of accounting from an information perspective. *Accounting and Business Research*, 40(3), 287–299. Abingdon. Retrieved from <https://search.proquest.com/docview/726401450/abstract/6C14D653F44E47C6PQ/>
- Fischer-Kowalski, M. (2014). *Ester Boserup's Legacy on Sustainability. Orientations for Contemporary Research*. Dordrecht, Heidelberg, New York, London: Springer.
- Hassan, S. (2002). *Evaluation of alternative farming systems concerning income and gender in selected areas of Bangladesh* [Master's thesis, University of Western Sydney (Australia), Australia]. Retrieved from <https://search.proquest.com/docview/1918123233/>
- IASB. (2018). *Conceptual Framework for Financial Reporting 2018* [Standard]. Retrieved October 26, 2018, from <https://www.iasplus.com/en/standards/other/framework>
- Keerthipala, A.P. (1997). *Sustainability of small-holder sugarcane-based production systems in Sri Lanka* [Doctoral dissertation, University of Aberdeen (United Kingdom), Scotland]. Retrieved from <https://search.proquest.com/docview/301513129/>
- Man, M., & Gadau, L. (2012). The quality increasing of information in the financial statements. A rearrangement of the qualitative characteristics. *Valahian Journal of Economic Studies*, 3(2), 21–28. Targoviste. Retrieved from <https://search.proquest.com/docview/1399685052/>
- Murali, P., & Prathap, D.P. (2017). Technical efficiency of sugarcane farms: An econometric analysis. *Sugar Tech*, 19(2), 109–116. Heidelberg. <http://dx.doi.org/10.1007/s12355-016-0456-8>
- Padin, M.G. (2015, October 14). The Philippines needs block farms, and fewer farmers experts. *Business Mirror*. Makati City. Retrieved from <https://search.proquest.com/docview/1722159560/>
- Puig-Junoy, J., & Argilés, J.M. (2002). *The influence of accounting information use on slight farm inefficiency*. Spain: Department of Economics and Business, Pompeu Fabra University. Retrieved from <http://www.econ.upf.edu/~puig/publicacions/>
- Republic Act No. 10659. (n.d.). Retrieved November 4, 2018, from https://www.lawphil.net/statutes/repacts/ra2015/ra_10659_2015.html
- Reza, S.M., Riaz, M., & Khan, M.H. (2016). Productivity and profitability of sugarcane production in northern Bangladesh. *Indian Journal of Commerce & Management Studies*, 7(1). Retrieved from <https://search.proquest.com/docview/1830724273/79F1C56CDE7647EDPQ/>
- Serafica, H.R. (2017). *The Philippine sugarcane industry: Challenges and opportunities*. Retrieved from <https://www.sra.gov.ph/the-philippine-sugarcane-industry-challenges-and-opportunities/>
- Sugar Regulatory Administration. (2013, February). *Briefer: The block farm project*. Retrieved from <http://www.sra.gov.ph/wp-content/uploads/2013/02/Block-Farm-Briefer-update.-Feb-2013.pdf>
- Sugar Regulatory Administration. (2018, January). *Pre-final crop estimates Luzon, Visayas & Mindanao (Crop year 2017-2018)*. Retrieved from <http://www.sra.gov.ph/wp-content/uploads/2018/01/2017-2018-PRE-FINAL-CROP-ESTIMATES-as-Jan-19-2018.pdf>

- Sugar Regulatory Administration. (2018, September). *Overview of the sugar industry*. Retrieved from <https://www.sra.gov.ph>
- Tomaszewski, M.A., van Asseldonk, M.A.P.M., Dijkhuizen, A.A., & Huirne, R.B.M. (2000). Determining farm effects attributable to the introduction and use of a dairy management information system in The Netherlands. *Agricultural Economics*, 23, 79–86. The Netherlands.
- Upreti, P., & Singh, A. (2017). An economic analysis of sugarcane cultivation and productivity in major sugar producing states of Uttar Pradesh and Maharashtra. *Economic Affairs*, 62(4), 711–718. New Delhi. <https://doi.org/10.5958/0976-4666.2017.00087.0>
- USDA Foreign Agricultural Service. (2017). *Philippines Sugar Annual Situation and Outlook (GAIN Report Number RO1705)*. Retrieved from https://apps.fas.usda.gov/newgainapi/api/report/downloadreportbyfilename?filename=Sugar%20Annual_Manila_Philippines_4-6-2017.pdf
- USDA Foreign Agricultural Service. (2019). *Philippines sugar annual situation and outlook (GAIN Report Number RO1908)*. Retrieved from <http://www.agiexchange.apeda.gov.in>