A COMPARATIVE STUDY OF THE CHALLENGES USING FAIR VALUE AND HISTORICAL COST IN THE VALUATION OF THE BIOLOGICAL ASSETS

By

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A RESEARCH PROJECT SUBMITTED TO THE STRATHMORE UNIVERSITY BUSINESS SCHOOL, IN PARTIAL COMPLETION OF THE REQUIREMENTS FOR THE AWARD OF A DEGREE IN BACHELOR OF COMMERCE/ACCOUNTING FIELD

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DECLARATION

I thus declare that this research project is my original work, and that it has not been previously published or submitted for a degree elsewhere. I further declare that this does not contain any material produced or published by others, except where credit is given, and the author is properly acknowledged.

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As the university supervisor, I have given my approval to this management study project.
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Signature ……. Date: ……

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ABSTRACT

This research project presents a comparative study of the challenges that arise from the use of two valuation methods for biological assets, fair value and historical cost method of valuation, in the agricultural sector in Kenya. By conducting an experiment with some accountants operating in the agricultural sector, the researcher uncovers which one between the two valuation model, fair value and historical cost, presents more difficulties in implementing. The experiment consisted of two accounting exercises on Fair value and Historical cost valuation model. The exercises involved completing a few simple accounting figures and calculations. It contained data related to the accounting facts of a cow farm expenses such as sales, physical data on growth and procreation, etc. It contained elementary accounting records and incomplete financial statements. Participants were asked to indicate the values of biological assets and calculate farm income.

Hereafter, self-complete questionnaires were delivered to the sample group to supplement the data received from the two accounting questions.

Considering the complexities of cost calculation when it comes to the valuation of the biological assets and the predominance of small family business, the study concludes that the valuation and reporting of the biological assets can be more easily understood and done under the Fair value model than Historical Cost model. The historical cost model conveys more difficulties in cost calculation and a less accurate grasp in the real situation of the farm. However, more research is needed with a wider sample range and also with other types of biological assets.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

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CHAPTER ONE

INTRODUCTION

1.1 Background study

The agricultural sector is considered to be one of the most significant sector in the economy of Kenya because of its contribution to Gross Domestic Product (GDP), foreign exchange income and employment. Agriculture is key to Kenya's economy, contributing up to 21% in 2018 and 26% of the Gross Domestic Product (GDP) in 2020 and another 27% of GDP indirectly through linkages with other sectors. The sector employs more than 40 per cent of the total population and more than 70 per cent of Kenya's rural people (FAO, 2018).

1.1.1 Accounting for Biological assets

Despite the relative importance of agriculture as a primary economic activity, there were no "industry specific" international accounting standards until 2001. IAS 41 Agriculture (IASB, 2009) was issued in February 2001. It was projected to include periods beginning from January 1, 2003 in prescribing accounting standards for agricultural activities and the management of the biological transformation of biological assets (living plants and animals) into agricultural produce. In IAS 41 Agriculture, a key reform introduced is the requirement of the fair valuation of biological assets "from initial recognition up to the point of harvest" (IASB, 2009).

In the United States of America, the only industry specific guidance for agricultural issues is the Statement of Position (SOP) 85-3, Accounting by Agricultural Producers and Agricultural Cooperatives, which was issued by the American Institute of Certified Public Accountants (AICPA) in April, 1985 (Jarnagin, 2008). This statement prescribes the accounting treatment for inventories, development costs of land, perennial crops, and breeding livestock, and, in the main, advocates historical cost as an appropriate asset measurement basis except in rare circumstances in which realisable value may be considered as an alternative.

The aim of IAS 41 is to set the standard for the recording of biological assets in the financial statements and the reporting on these biological assets (IASB, 2011). As accounting for biological assets are fairly new, the preparers of financial statements as well as regulators of IFRS in Kenya are likely to experience implementation challenges.

1.1.2 Fair value Accounting

IAS 41, *Agriculture* (IASB, 2009) was issued in February 2001. It was intended to encompass periods commencing on 1st January 2003 in prescribing accounting standards for agricultural activity and the management of the biological transformation of biological assets (living plants and animals) into agricultural produce. In IAS 41, *Agriculture*, a key reform introduced is the requirement of the fair valuation of biological assets, "... from initial recognition ... up to the point of harvest" (IASB, 2009)

In November 2006, the IASB issued the following discussion paper, Statement of Financial Accounting Standards No. 157 *Fair Value Measurements* (SFAS 157). The objective of SFAS 157 was to establish a single definition of fair value together with a framework for the measuring of fair value (IASB, 2006). The discussion paper, SFAS 157, elicited differing opinions, and, in May 2009, the IASB issued an exposure draft (ED/2009/5) that invited comments on the use of "exit value" as the dominant basis of the determination of fair value (IASB, 2009). The fair value based on exit value is either asset or liability specific and, in accordance with the exposure draft on fair value measurement, it considers the characteristics of the relevant asset or liability (e.g., the condition and location of the asset and restrictions, if any, on its sale or use) if market participants should consider these characteristics when determining the price for the asset or liability at the measurement date (IASB, 2009). The IASB (2009) explains that an exit price is not a liquidation value which may be a forced transaction, but rather, the price in an arm's length transaction which has been concluded in the normal course of business between knowledgeable, willing parties.

1.2 Problem statement

The main problem to be investigated in this study is to compare the difficulties in the accounting preparation in agriculture using Fair value and Historical cost methods of valuation for the biological assets in Kenya.

The trend toward the use of Fair Value (FV) accounting as raised many controversial issues throughout the years. The Academic critical of FV argue that its usefulness has not been demonstrated, it is subject to more manipulation, leads to less efficient investment decisions, is not reliable, may include greater volatility, and so on. (Watts, 2003 and 2006).

On the other hand, proponents argue that FV is an important improvement of Historical Cost (HC) accounting in that it entails lower volatility, contributes to improving firm efficiency,

provides stronger signals of financial distress, provides more relevant information and fosters transparency (Bleck, 2007). Some great researchers such as Barth and Landsman (1997), concluded that in perfect and complete markets, a FV accounting based balance sheet reflects all value-relevant information.

IAS 41 introduced the FV accounting for all the biological assets in agriculture, and most authors were critical of using the FV accounting for all the assets under *IAS 41, Agriculture*.

Pentittinen et al. (2004), claim that fair valuation would cause unrealistic fluctuations in the net profit of forest enterprises. Pricewaterhouse-Coopers (2009) reports 18 forest companies applying FV through discounted cash flows and 4 through market value, while 7 apply HC in a sample of 19 farms (some of which apply multiple methods) from different countries. Additionally, Elad (2004) argues that FV ignores social and environmental production relations that underlie market exchanges, legitimating unjust socioeconomic relations. He said that where there is no active market for biological assets simplicity is not a merit of FV.

The contribution of this paper will then be to make a comparison of the difficulties faced by farmers and accountants when making use of the two valuation technics, FV and HC, and compare the reliability of the two valuation methods in helping in the decision-making.

The difficulties will be investigated with reference to IAS 41, *Agriculture*.

1.3 Research objectives

The objective of this study is to make a comparison of the challenges faced by accountants in understanding and using the two valuation methods for biological assets, which are Fair Value and Historical Cost. The study also compares the reliability of the two valuation methods in decision-making. The study also recommends an appropriate valuation technique in the absence of any active markets, and it not being possible to determine the cost of biological assets readily.

1.4 Specific objectives

1. To compare the reliability of the two valuation methods in decision-making
2. To recommend an appropriate valuation technique in the absence of any active markets, and it not being possible to determine the cost of biological assets readily.

1.5 Research questions

This study sets out to answer the following research questions in respect of IAS 41, *Agriculture,* in Kenya:

(i) What difficulties do preparers of financial statements face in the implementation of Fair value and Historical cost methods of valuation in the agricultural sector in Kenya?

(ii) In which manner have the Fair value and Historical cost implementation difficulties affected the quality of accounting preparation and hence financial reporting and which one of the two is recommendable?

1.6 Scope of the study

This study focuses on cow firms specifically, in the determination of the difficulties faced by the accountants operating in the agricultural sector when preparing the financial statements in a one year accounting period, using Fair value model and Historical cost model for the valuation of their biological assets in Kenya. The simple size is composed of both listed and unlisted firm operating in the agricultural sector with a total number of 26 firms.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature from past studies. It presents the various theories and studies done on the selected research topic as well as the empirical review of the study. Although several researchers have endeavored to investigate the valuation of the biological assets and what it entails, very have gone further in assessing what is the difference between the Historical Cost method (HC) and Fair value method (FV) of valuing their biological assets. This chapter identifies and discusses the challenges faced in accounting preparation for the biological assets, and the gaps that would permit future studies. Section 2.2, Theoretical review discusses the theories that guided the research and section 2.3 discusses the empirical review.

2.2 Theoretical review

2.2.1 Agency theory

Agency theory defines the incentive problems in firms motivated by the ownership and control separation or else, the principal (owner of the firm) and the agent (manager) problem (Jensen&Meckling, 1976). In this sense and where disclosure practices are concerned, managers are strongly motivated to disclose complete information in order to achieve their compensation. For example, bearing in mind larger firms, they are expected to have higher agency costs; therefore, these firms are also influenced to improve the information level to stakeholders and financial analysts for them to be able to maximize their compensation.

IFRS 13, *Fair value measurement*, was issued in May 2011 and defines fair value, establishes a framework for measuring fair value and requires significant disclosures relating to fair value measurement (IFRS, 2011).

Before the adoption of the accounting standard number 41, most countries were valuing their biological assets using the historical cost method or the formation cost method. Now that the standard has been developed and adopted by the IASB, the agricultural products and biological

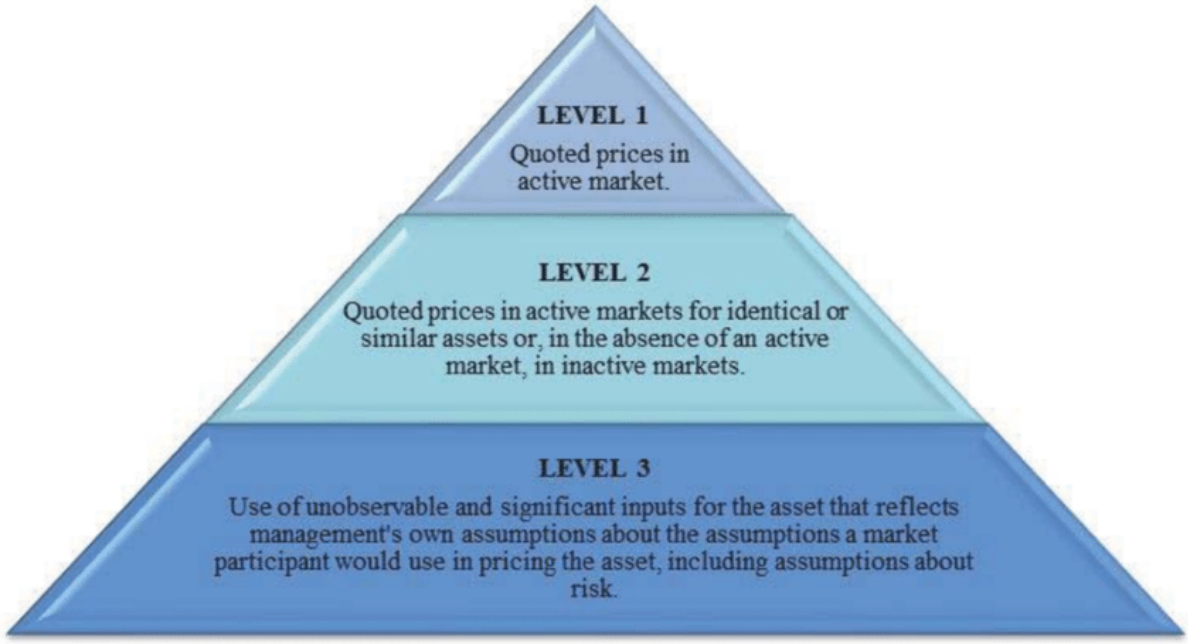
assets are being measured using the Historical cost model or the Fair value model depending on the standard used in the country. The most relevant agricultural products of the local are the targeted for valuation (Elad&Herbohn, 2011).

According to Nobes (1998), fair value represents the amount that buyers and sellers are willing to deal their assets in a business transaction. According to Nobes (1998), fair value represents the amount that buyers and sellers are willing to deal their assets in a business transaction.

Fair value basically represents the price at which the buyers and sellers to deal their assets in a business transaction. Lipe (2002) agrees that a Fair value estimated at normal market conditions is a well-defined measure of value, so there are no significant questions as to its relevance and credibility.

Martins, Machado and Callado (2014), evidenced that the capital market perceives a Fair value-based valuation with a bit of conservatism, but without interfering in the quality of the information. The three authors then concluded that the Fair value-based valuation is reliable and relevant, and it also gives important information for the market. Some studies have presented the disadvantages of adoption of the IFRS for the rural entities for both the Historical cost method and Fair value method. Biological assets and agricultural products are affected by their cost of reproduction and growth that makes the allocation of costs more complex and difficult for the farmers. The Fair value allows the valuation and preparation avoiding the complexities in the attainment of the cost allocation.

In order to improve the consistency and comparability in the fair value valuations, IFRS 13 Fair value Measurement establishes a Fair value hierarchy that classifies the inputs applied to the valuation techniques into three levels. The figure below based on the IFRS 13 details the levels of the Fair value hierarchy:



Fair value hierarchy Source: Prepared by authors based on IFRS 13.

At level 1, the information represents the most reliable evidence on fair value and may be used without adaptations for its valuation since it represents a benchmark for all the groups of products. At the level 2, information is looked at either directly or indirectly and in level 3, the inputs include that risk underlying a specific valuation technique used to gauge fair value and the risk inherent in information used in the valuation technique. At this level, the asset valuation requires a certain degree of judgement by the appraiser, and this could deeply influence the reliability and the relevance.

2.2.2 Accounting choice theory

The Accounting choice theory defines the firm manager's choice of one accounting method over another (Watts, 1992). This corresponds in this study, to choose between fair value and historical cost as valuation method. Given market imperfections such as transaction costs and externalities, Fields et al. (2001) state that accounting choices are used by managers to disseminate their private information and to influence the beliefs of rational investors. Moreover, accounting choice could detect the economic determinants that move managers towards certain directions (Zmijewski and Hagerman, 1981) and could explain how these determinants could be changed. This would be particularly helpful for accounting regulators to anticipate, for example, how firms would answer to a change in accounting rules.

IAS 41 is the only accounting standard that commands fair value measurement for operational assets, as opposed to revaluation options, which are self-selected into. Our knowledge about the value relevance of fair value measurement for operational assets, the usefulness of such and whether fair value information is actually used, is more limited. The rationale for fair value reporting is also less obvious (Penman, 2007). Argilés, Garcia-Blandon and Monllau (2011) looked at the differences in short term cash predictive capacity between fair value and historical cost accounting in Spanish agriculture. And the outcome of the study showed that there are not many differences between historical cost and fair value measurement in the case of the cash flow prediction. Argilés-Bosch, Miarons, Garcia-Blandon, Benavente and Ravenda (2018) studied the usefulness of fair value measurement for cash flow prediction by comparing companies that use either historic cost or fair value measurement in a broader context and found that it becomes increasingly difficult to predict cash flows when the portion of biological assets to total assets goes up, but the studies demonstrated that this effect is mitigated, but not necessarily offset, by the use of fair value measurement. Botosan and Huffman (2015) in their study stated that fair value is more decision useful for assets expected to be realised in exchange while historic cost is more decision useful for in use assets and cash flow prediction. Their work based the results based on the accounting theory as well as valuation theory and practice.

2.3 Empirical review

2.3.1 Measurement of accounting elements

The measurement of the accounting elements is very critical since they are reflecting in the financial statements and the investors will be looking at those figures to guide their investment decision. Hence, it is important to do an economic analysis on the background of the Fair value, its strengths and weaknesses.

In a study, Prochazka (2011) concluded that fair value is a measurement way which can represent the true and fair view on elements and from the economic point of view, current market-based pricing is relevant for decision making. Additionally, fair value measurement is conceptually superior to the other techniques but in practically fair value definition and principles of its usage are critical in arriving true and fair view on financial statements.

Elfaki and Hammad (2015) found that fair value assist to provide useful information to users and there is a positive relationship between application of fair value and relevance and reliability of information for decision making. It is an agreeable point which fair value provides accurate valuation on asset and liability though it is difficult to get active market prices for valuation.

Regarding the fair value measurement of biological assets, a recent study (Clavano, 2014) found that both auditors and accountants believe that it is a challengeable to use fair valuation for biological assets. Though it is challengeable coconut and banana plantations have proved fair valuation method is already widely applied in some region while piggery, poultry and other livestock companies still willing to use historical cost model. The study shows that number of companies use combination of fair value and historical cost.

A study carried out by Ghani and Muhammad (2014) shows that many companies in Malaysia still using the traditional accounting methods which introduced by Ministry of Public Finance to value the biological assets. In Malaysia most of the companies identified biological assets in current and non-current basis. As far as considering the non-current biological assets, many companies value those using historical cost method and, depreciation, revaluation are also done in same way as other property plant and equipment. Newly born animals which used in production process and to breeding purposes, products of animals which fall in to current asset category are considering as inventories. Crops which are growing consider as working progress items. So many countries used historical cost method (initially recognized at purchase cost and recognized in balance sheet as minimum of cost or value in use/sale) to value biological assets instead of fair value minus selling cost which represent IAS 41.

Aliberch, Blandon and Bosch (2012) stated that most of the accountants use fair value method rather than historical cost method when measuring value of the biological assets. As to them less accuracy of historical cost method and high probability of miscalculation are the main reasons for that. Unavailability of active markets will lead to miscalculation of fair value techniques and this is the main disadvantage of using fair value technique in measuring value of biological assets (Elad&Herbohn, 2011).

2.3.2 IFRS implementation

Deloitte Touche Tohmatsu Limited and PricewaterhouseCoopers (2012) state that most African countries fail to prepare financial statements on the basis of IFRS. Their study concluded that countries in Africa that have adopted IFRS as a guide to prepare financial statements face some challenges. The study highlighted implementation challenges facing countries in Africa like South Africa, Kenya and Nigeria. Notably, in spite of such challenges, some countries have taken the risk and have effectively implemented IFRS. According to a report of Deloitte Touche Tohmatsu Limited (2012), 18 out of 53 countries in Africa, representing 34%, have successfully adopted IFRS. The following countries were listed: Ghana, Lesotho, Botswana, Kenya, Libya, Mauritius, Mozambique, Namibia, Nigeria, Sierra Leone, South Africa, Swaziland, Tanzania, Uganda, Zambia, Morocco, Zimbabwe and Malawi.

2.3.3 Institutional challenges

At the conference organised by the UN on Trade and Development (UNCTAD, 2008), the UN recognised challenges that cropped up with regard to the introduction of IFRS as an element of the governance of firms in any jurisdiction, where laws and regulations already exist. These challenges were palpable in the case studies of Kenya and South Africa, where the IFRS adoption is likely to result in divergence amid IFRS requirements for financial reporting and existing laws. It was stated in the UN study that IFRS is proposed to draft general-purpose financial statements. On the other hand, financial statements prepared on the basis of IFRS could also be necessary to be prepared as a result of legal requirement. Nevertheless, whereas increasing IFRS usage for such purposes could result in less cost, it may generate misapprehension among regulators and reporting entities, mostly in circumstances where the local standard for financial reporting is at variance with the IFRS.

2.4 Summary of the literature and research gaps

Heidhues and Patel (2008) mentioned that the move to new reporting standards results in numerous difficulties for diverse interest groups such as auditors, preparers, users and regulators. Especially, the challenge for regulators is to discover to what extent national and local reporting standards are comparable to IFRS. This requires that the practitioners should

build up an exhaustive analysis in order to put into practice the changes in hardware, software and reporting processes (AICPA, 2011). Additionally, the perception of the general public, with regard to the changes in financial statements of firms that have implemented IFRS, is challenging (PWC, 2011).

FV implementation is conditioned on the existence of active markets for assets and the subsequent availability of market-determined prices, a condition that is not fulfilled for certain assets. However, a range of alternative measurements may be applied in these cases (IAS41, paragraph 18-24). One of the main arguments against FV is volatility. However, it is generally accepted that the HC model fails to accurately reflect the recent past or the situation of the firm at the time of preparing the financial statements, and that the FV model gives rise to more relevant information for the users of financial statements (Herranz&Osma, 2009).

Hence, the researcher formulates the two following theories:

1. Given the characteristics and circumstances of agriculture and agents operating in the sector, and assuming the availability of Fair value measurements, the preparation of accounts entails more difficulties under Historical cost than under Fair value with respect to problems specific to biological transformation.
2. Given the characteristics and circumstances of agriculture and agents operating in the sector, and assuming the availability of Fair value measurements, Fair value accounting provides better judgement than Historical cost for users and preparers of accounting information.

2.4.1 Summary of the literature reviewed

Author	**Country**	**Theories**	**Research methodology**	**Findings**
Aria Farahmita	Indonesia	-Earnings management theory -Agency theory	Data used in this study is secondary data from Indonesia Capital Market Directory (ICMD) or	There is no significant difference in the value and volatility of assets, incomes, earnings, ROA and Income Smoothing Index (ISI) between two sample groups of companies using the fair

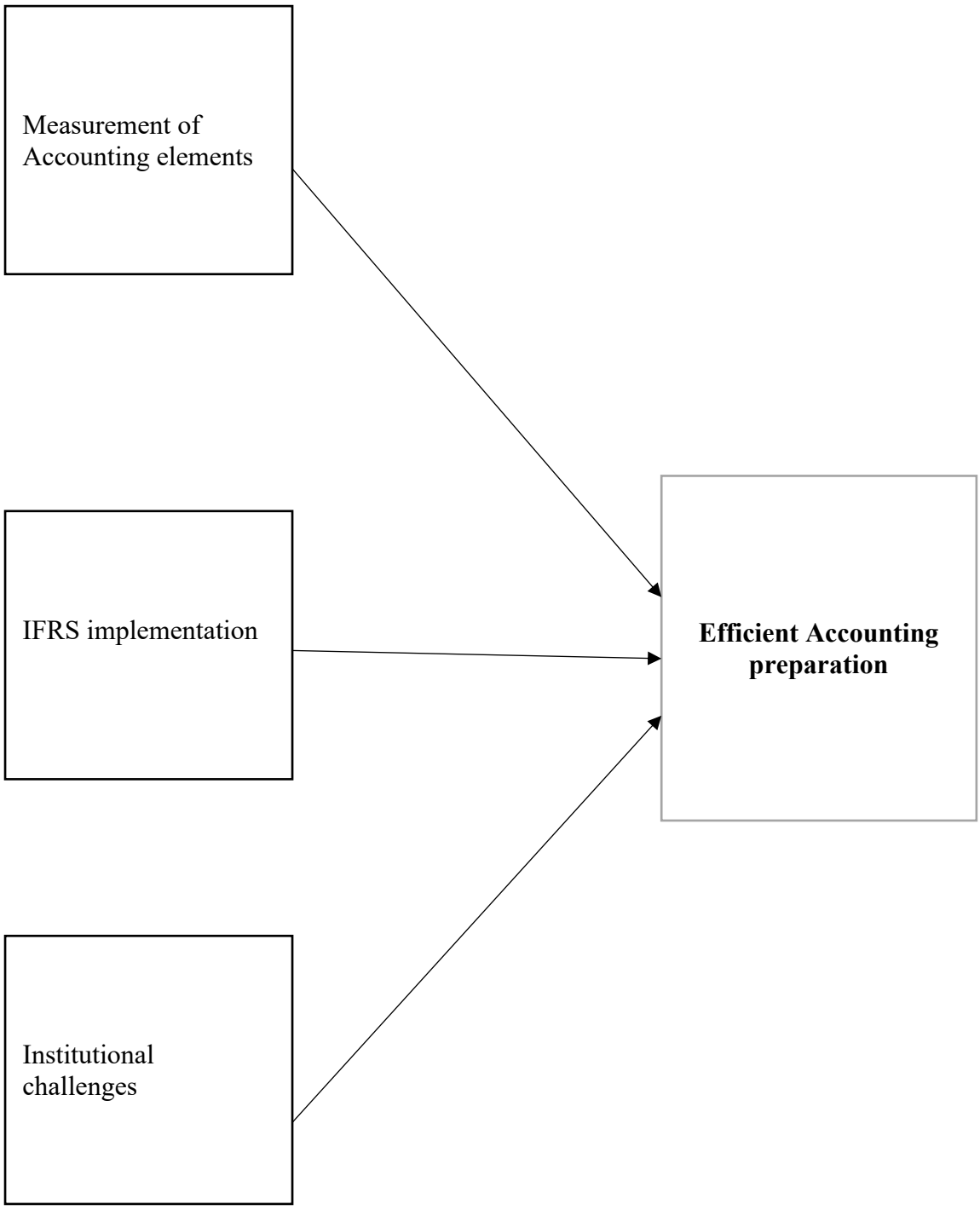
			Indonesia Stock Exchange (IDX). The variables used in this study consist of the variables for descriptive analysis and regression tests. The analysis of data received was done using the test of variance or analysis of variance (ANOVA) test	value and the historical cost approaches
Joseph M. Argilés Bosch	Spain	Agency theory	The method that was used into collecting data was primary data consisting of interviews and surveys that ended into descriptive analysis and index calculation	Farm cash flows are not less predictable with fair valuation than with HC. Consequently, there is no difference in the relevance of accounting information. On the contrary, most tests reveal a higher predictive power of future earnings under FV

Kamaruzzaman Muhammad	Malaysia	Agency theory	The method that was used into collecting data was primary data consisting of interviews and then content analyses was performed on the data received from the various respondents.	The FV disclosure of the bearer biological assets can be done through the development of a fair value model that is more appropriate in establishing the fair value of biological assets. The development of this model would promote comparability and consistency in the determination of fair value of the bearer biological assets among plantation companies. It will aslo help the financial statements preparer to use a model in determining the fair value of bearer biological assets without which they may have to engage a professional valuer to assist them in valuing their bearer biological assets

Chairina	Indonesia	Accounting choice theory	This research was a qualitative descriptive research by giving a description of the Accounting treatment of biological assets engaged in oil palm plantation. Data collection techniques used questionnaires sent to the company with 10 samples of oil palm companies. The data were analyzed by using descriptive analysis and index calculation of implementation conformity to the standard.	The companies have applied the Accounting treatment of biological assets on more or less 90.8% based on research indicators. In terms of classification the companies have classified 100% of its biological assets well. Recognition, measurement and assessment of biological assets, the companies applied research indicators in the range of 84% to 97%, this condition was caused more because the basis of valuation with the fair value of biological assets was not readily available in the active market thus affecting the recognition, measurement and valuation of those assets

2.5 Conceptual framework

INDEPENDENT VARIABLES **DEPENDENT VARIBALE**



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The methodologies that were employed to perform the study are described in this chapter. It explains and gives justification for the research design, sampling and sample size, data collection and procedures. An experiment has been designed and conducted to test the variables brought in in the previous section. Dearman and Shields (2001) and Briers et al. (1997) conducted similar studies to test hypotheses on judgement and data fixation. Section 3.2 describes the research design while section 3.3 gives an explanation on the population and the sampling. Section 3.4 explains how the data will be analyzed.

3.2 Research Design

According to Maxwell (2012), a research design is a methodical approach that a researcher uses to perform a scientific study, and the results obtained are legitimate and accurate (Maxwell, 2012). The research has been carried out using experimental design.

Experimental design is the process of carrying out research in an objective and controlled fashion so that precision is maximized, and specific conclusions can be drawn regarding a hypothesis statement (Bell, 2009).

3.3 Population and sampling

3.3.1 Population

A population is a collection of items that can be people or objects, that have a common trait, determined by the researcher's sampling criteria. The target population is the study universe, the population to which the researcher would like to generalize results based on analysis of a sample (Allen, 2017). The sample is selected from a target population.

The agriculture sector employs more than 40 percent of the total Kenyan population and 70 percent of the rural population (USAID, 2021). The total population of Kenya in 2020 has been evaluated to around 53,771,300 people (DataBank, 2020). This population brings to an approximative population of 21,508,520 farmers in the country.

The experiment targeted subjects operating in the valuation and reporting of the biological assets, and the preparation of the financial statements, in other words, the accountants. The study focused on both listed and unlisted firm operating in the agricultural sector with a total number of 26 firms.

3.3.2 Sampling technique

This study was conducted using the purposive sampling which is a sampling technique in which elements are chosen based on the study goals or purpose and criteria (Bloor, 2016). The main objective of a purposive sample is to produce a sample that can be logically assumed to be representative of the population. A purposive sample, also referred to as a judgmental or expert sample, is a type of nonprobability sample. This is frequently accomplished by using expert knowledge about the population to select a sample of elements that represents a cross-section of the population in a nonrandom manner (Etikan, 2017). This sampling technique was chosen since it is reasonably simple to use. The respondents are also readily approachable, which makes the study easier to conduct (Etikan, 2017). The study generally focused on getting data from accountants preparing financial statements for agricultural companies.

Considering a total number of 26 companies, employing at least one accountant each, Yamane's formula has been used to get the sample size as follows:

$$N = \frac{n}{1+N(e)^2}$$

$$N = \frac{26}{1 + 26(0.05)^2} \quad N = 24$$

The study then focuses on 24 companies.

3.4 Data Collection

The experimental design consisted of performing written exercises on the accounting of biological assets with both valuation methods, fair value and historical cost.

Two different exercises were designed and given to participants. Exercise 1 focused on accounting preparation using fair value, while exercise 2 used Historical cost.

The exercises involved completing a few simple accounting figures and calculations. It contained data related to the accounting facts of a cow farm expenses such as sales, physical data on growth and procreation, etc. It contained elementary accounting records and incomplete financial statements (balance sheet and profit and loss statement), as well as sheets for

responses. In order to avoid complexities of cost allocation, it did not contain different types of products, it only focused on one specific type of biological asset, cows. Participants were asked to indicate the values of biological assets and calculate farm income.
Hereafter, self-complete questionnaires were delivered to the sample group and collected after a few days to supplement the data received from the two accounting questions. The questionnaires focused on questions seeking answers relating to the independent variables i.e., measurement of accounting elements, IFRS implementation and institutional challenges. Questionnaires were selected for the purpose of this study because they are more efficient at gathering vital data from the study population. It also has several other advantages, such as standardized responses and ease of data processing (Abel, 2003).

3.5 Data Analysis

Data analysis is defined as the process of reviewing data obtained in a survey or experiment and deducing and inferring underlying structures, extracting variables, discovering anomalies, and putting any underlying assumptions to the test (Melissa, 2009).

Written responses to historical and fair value versions were analyzed and compared. First, the researcher established a criterion for grading the exercises. Then, to control for criterion bias, the researcher asked a lecturer in accounting to grade it applying his own criterion. Hereafter, the researcher referred to these grades and graders as “external” and “author”. Grades were provided for the whole exercises, marks given out of ten, as well as for the two main items in the exercise (marks out of five). They are the following: valuation of biological assets and income calculation and judgement.

To control for potential errors, any response to the exercises with differences equal to or greater than two points between any pair of graders was reviewed. Final grades after this review were considered for statistical comparisons. Comparisons between responses to historical cost and fair value versions of the exercises were performed through T-tests for dependent samples and reinforced with non-parametric Wilcoxon signed-rank tests. The kappa measure was used for testing agreement between responses to historical cost and fair value. It is a well-established measure of inter-rater agreement that corrects for the fact that a certain amount of agreement could occur due to chance alone (Banerjee, 1999). Statistical analyses were complemented with

some questionnaires on accounting practices, difficulties and needs, which will be distributed to the participants.

3.6 Operationalization of variables

Variable	Measurement	Source
Measurement of accounting elements	Experimental tests have been carried out in order to check the interrelation between variables	JM Ball, a theory of fine microstructure and the two-well problem (1992)
IFRS implementation	Experimental tests have been carried out in order to check the interrelation between variables	A Bassi, Models of wave-function collapse, underlying theories, and experimental tests (2013)
Institutional challenges	Experimental tests have been carried out in order to check the interrelation between variables	JM Ball, a theory of fine microstructure and the two-well problem (1992)
Efficient Accounting preparation	Experimental tests have been carried out in order to check the interrelation between variables	Li Schiff, the general theory of relativity (1960)

3.7 Validity

Validity refers to the extent to which we are measuring what we hope to measure and what we think we are measuring. A valid study provides scientifically sound responses to research questions. Internal, external, and construct validity are three areas where a study validity can be jeopardized. Face and content validity refers to the researcher's subjective belief that the concept being measured has been covered. (Kothari, 2004).

3.8 Reliability

Reliability refers to a condition where a measurement process yields consistent scores (given an unchanged measured phenomenon) over repeat measurements. This study used retest reliability, which is a measure of stability, and administered the same test/measure at two

different times to the same group of participants. The same tests were administered twice to the same set of persons. The pre-testing respondents were given a pilot test to help tweak and refine the instrument before the second test is given.

3.9 Ethical considerations

This section highlights the ethical problems that the researcher addressed when conducting the study and gathering data. Respondents were asked to participate in the study voluntarily and without pressure by the researcher asking for their permission. The researcher secured the privacy of participants by providing them antiquated identifier codes that protected their identity and responses. The conclusions of the study have been generalized; thus, no information was linked to any of the respondents.

CHAPTER FOUR

PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

The goal of the study was to assess and find the challenges and accounting errors that are facing the accounts in the valuation and reporting of the biological assets. The analysis, findings and discussions with reference to the objective are presented in this chapter. Section 4.2 presents the sample group with its organization, section 4.3 up to 4.6 presents the finding of the study.

4.2 Sample presentation

There were 24 respondents sampled for this study and a response rate of 100% was obtained as 24 valid responses were obtained.

4.2.1 Gender respondents

This question aimed at establishing the gender distribution of the respondents. Majority of the respondents were male who were 54.2% of the population while female respondents constituted 41.7% of the population. Figure 4.1 below illustrates the distribution.

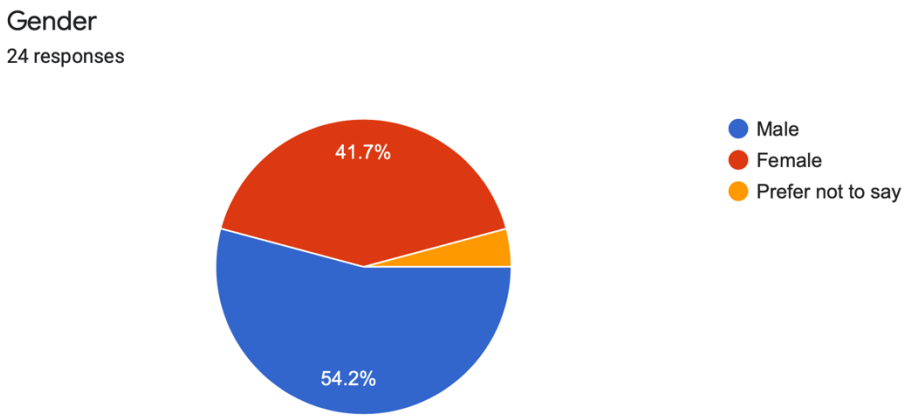


Figure 1 Gender distribution

Figure 4.1 Gender of the respondents

4.2.2 Company population

This question aimed at establishing the size of the company were the respondent work. The findings have been represented in Figure 4.2.

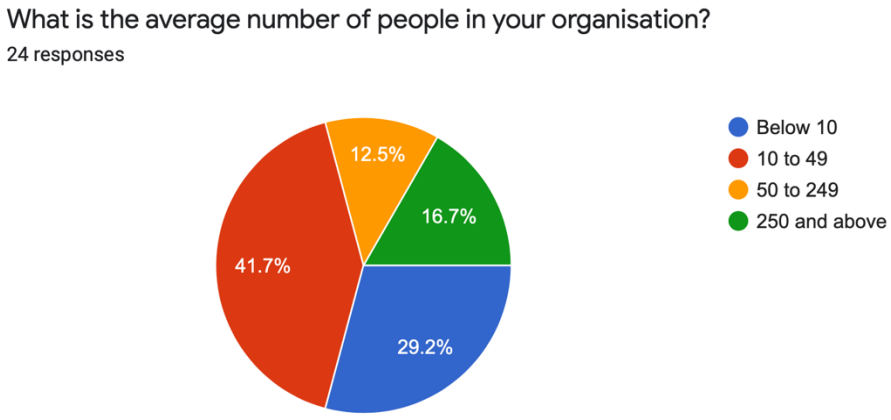


Figure 2 Company population

4.2.3 Age group

This question aimed at establishing the age group of the respondents. The findings have been represented in Figure 4.3.

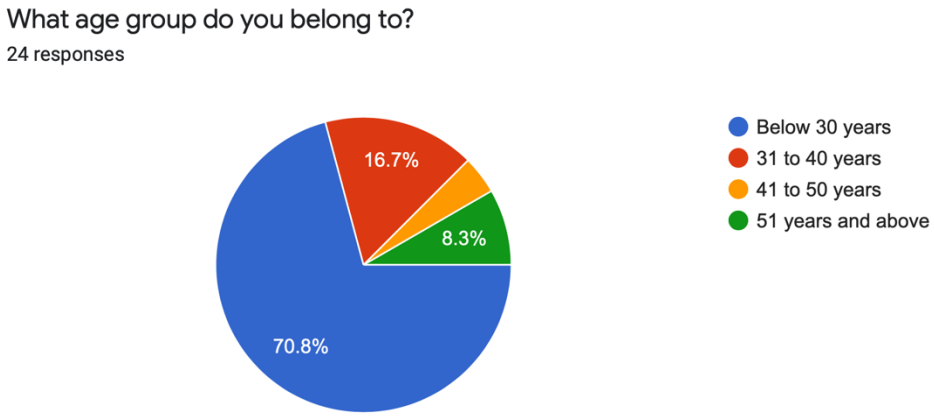


Figure 3 Age group

4.3 Grades for the two exercises by grader and detailed grades by item

	Fair value Version			**Historical cost version**		
	Respondants	**Mean**	**Std. deviation**	**Respondants**	**Mean**	**Std. deviation**
Grades for the two exersices:						
Author	24	5.29	3.55	24	2.56	2.25
External grader	24	5.91	3.61	24	3.49	2.69
Valuation of biological assets:						
Author	24	3.01	2.11	24	1.22	1.44
External grader	24	3.2	2.98	24	1.91	1.56
Income calculation:						
Author	24	2.57	2.11	24	1.31	1.62
External grader	24	2.65	2.11	24	2.01	1.79

Significance levels: $p<0.1$, $p<0.05$ and $p<0.01$ (Wilcoxon tests for dependent samples)

Table 1 Grades for the two exercises by grader and detailed grades by item

This table displays results for the two different items making up the whole two exercises. The results show that the respondents found more important issues into performing the Historical cost accounting question. The grades for the Historical cost question are substantially under the cut-off point of 5, with the minimum mean grade 2.56 by the author and 3.49 by the external grader. However, participants on an average passed the above cut-off point for the fair value version, with a minimum mean grade of 5.29 by the author and 5.91 for external grader. All parametric and non-parametric tests find significant differences, with $p<0.01$, between historical cost and Fair value versions for any of the two graders. In spite of the fact that there are significant differences between grades from the author and the external grader, as a consequence of the different criteria used, all grade the Fair value version significantly higher than the historical cost, confirming that given the characteristics and circumstances of agriculture and agents operating in the sector, and assuming the availability of Fair value measurements, the preparation of accounts entails more difficulties under historical cost than under Fair value with respect to problems specific to biological transformation.

4.4 Grades for the two exercises by order with grader

	Fair value Version			**Historical cost version**		
	Respondants	**Mean**	**Std. deviation**	**Respondants**	**Mean**	**Std. deviation**
Section 1: 1st Historcal cost 2nd Fair value						
Author	24	4.98	3.99	24	1.8	1.44
External grader	24	5.89	4.02	24	2.01	1.91
Section 2: 1st Fair value 2nd Historical cost						
Author	24	6.31	3.22	24	4.31	2.1
External grader	24	6.29	3.51	24	4.89	3.33

Significance levels: p<0.1, p<0.05 and p<0.01 (Wilcoxon tests for dependent samples)

Table 2 Grades for the two exercises by order with grader

This table displays results by order of historical cost and fair value versions, or else, the two exercises. All grades for the whole sample for the fair value version are significantly higher, with p<0.01, than those for the historical cost version, irrespective of the order followed in performing the experiment. This confirms the hypothesis that there are more difficulties in preparing the accounts using the historical cost mode of valuation as compared to fair value.

4.5 Criteria used in solving the two exercises with the number of respondents

	Historical cost	**Fair value**	**Total**	**Overall exercises**	**Only exercises applying Historical cost or Fair value**

1st: Valuation of biological asset					
Historical cost version	14 (58.3%)	10 (41.6%)	24 (100%)		
Fair value version	3 (12.5%)	21 (87.5%)	24 (100%)	3.73	4.22
2nd: Income calculation					
Historical cost version	11 (45.83%)	13 (54.27%)	24 (100%)		
Fair value version	1 (4.16%)	23 (95.83%)	24 (100%)	5.22	5.49

Significance levels: p<0.1, p<0.05 and p<0.01 (Wilcoxon tests for dependent samples)

Table 3 Criteria used in solving the two exercises with the number of respondents

This table displays information on the criteria used in solving the 1st and 2nd items of the exercises. The results accurately outline that Fair value or more precisely market values are key points of reference for the respondents. A significant part of them, 41.6% for the valuation item and 54.27% for the income calculation item used fair value criteria despite the requirement to proceed with the historical cost version, while the reverse effect is negligible. Most participants required to use fair value did so or else 87.5% and 95.83% in valuation and income calculation items, respectivel. A minority applied the required historical cost in the historical cost version. The z-test for the difference between proportions yielded a z value of 3.73 for 1st item and 5.22 for the 2nd when all criteria are considered, and 4.22 and 5.49 for both items respectively considering only exercises that used Fair value and historical cost criteria. All these values are higher then the critical value 2.57 for the test statistic at the significance level of 0.01, which means that there are significant differences with $p<0.01$ between proportions of historical cost and fair value criteria used in solving the exercises for each valuation version. A significant greater proportion of participants used the fair value criterion in solving the fair value version, than participants using the historical cost criterion in solving the historical cost version. In the same vein, no significant differences were found in using the historical cost versus fair value criterions when participants where asked to solve the historical cost version. These results suggest that in the agricultural sector, Fair value is a friendly reference that subjects find easy and meaningful to use, while they have trouble using historical cost.

4.6 Responses to questionnaires sent on challenges applying various valuation criteria and reporting of biological assets

	1 In almost all the biological assets	**2 In most of the biological assets**	**3 In approximately half of the biological assets**	**4 In few biological assets**	**5 In almost no biological assets**
To what extent do you face challenges in applying various valuation criteria for biological asset?	3 (12.5%)	8 (33.3%)	5 (20.8 %)	8 (33.3%)	0 (0.0%)
To what extent has the cost of production or purchase of the asset affected the valuation and reporting?	2 (8.3%)	8 (33.3%)	6 (25%)	6 (25%)	2 (8.3%)
Is the market price fair enough?	1 (4.2%)	6 (25%)	10 (41.7%)	6 (25%)	1 (4.2%)

Think of a given biological asset, is the market price for the direct substitute fair enough?	1 (4.2%)	10 (41.7%)	8 (33.3%)	4 (16.7%)	1 (4.2%)

	1 Strongly disagree	**2 Disagree**	**3 Neutral**	**4 Agree**	**5 Strongly agree**
Is the cost of maintenance of those biological asset affordable?	0 (0.0%)	6 (25%)	10 (41.7%)	8 (33.3%)	0 (0.0%)
Is the feed cost for those biological assets affordable?	1 (4.2%)	3 (12.5%)	10 (41.7%)	10 (41.7%)	0 (0.0%)

Table 4 Responses to questionnaires sent on challenges applying various valuation criteria and reporting of biological assets

Results displayed in this table reveal that cost of production is perceived as difficult to calculate for most biological assets, together with expected net cash flows and the market price of combined assets. Acquisition cost, market prices for similar assets and sector benchmarks are perceived as the easiest valuation criteria. Most respondents do not find difficulties in applying market price and most recent market transaction prices for most of their biological assets. The kappa coefficient between HC production and market price is low and non-significant with

$p<0.1$, indicating that there is no agreement between perception of difficulties for the two valuation criteria.

4.7 Summary of the chapter

This chapter shows that more of the mistakes made in the cost calculation are typically in valuation at the net profit, allocation of all the costs to the cows, etc. However, speaking in an accounting perspective, more mistakes were expected using the fair value rather than historical cost. The questionnaire has also confirmed the results got by the study, assessing that the accountants find more difficulties in using the historical costs rather than fair value valuation model.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter summarizes the study's findings, as well as the conclusions and recommendations reached, as well as the contribution to the knowledge base. It also makes recommendations for future research. Section 5.2 discusses the findings of the study, section 5.3 summarizes the findings of the study, section 5.4 Concludes the study and section 5.5 presents the limitations and recommendations of the study.

5.2 Discussion of findings

This study carries out a comparison of the challenges faced by accountants operating in the agricultural sector when preparing and reporting accounts using Fair value and historical cost valuation of biological assets. By conducting an experiment with some accountants operating in the agricultural sector, the researcher found that Fair value is actually friendlier than historical cost for accounting preparation, and it encourages better judgement among subjects operating in the sector. The users encounter more challenges and make more miscalculations when preparing accounts making use of historical cost than with Fair value. They persistently carry out flawed valuations of biological assets and less accurate income calculations with data based on historical cost valuation method. In contrast, they attain acceptably accurate valuations and income calculations when they apply Fair value or market values.

This research also uncovers rough practices in cost calculation. Agriculture is usually characterized by the predominance of small family business units in most of the African countries, while product diversity, growth, procreation, joint-cost situations, etc. entail considerable complexities in cost calculation. Most farms can neither afford the cost of full-time experienced accountants nor pay for advanced consulting and accounting services. In this situation historical cost cannot be expected to be as reliable and relevant as fair value. Considering these characteristics, fair value can be viewed as a simpler, friendlier, more useful tool than historical cost for the spread of accounting throughout the sector. The results lend credence to this preference shown by subjects operating in the sector. fair value can be more easily applied, produces fewer mistakes and is more understandable. Given the characteristics

of subjects operating in the sector, historical cost conveys a less accurate grasp of the real situation and provides no efficient cues to overcome data fixation. This comparatively entails greater risk of sub-optimal decision-making.

5.3 Summary of findings

Many farms that attempt to apply or disclose historical cost valuation ultimately rely on market values. The main disadvantage of Fair value is that it can be hard to apply when there are no active markets for some biological assets. Elad and Herbohn (2011) state that some accountants have voiced concern over the applicability of the Fair value model, particularly to some biological assets in developing countries with inactive markets. Moreover, the IASB (2007) recognized the difficulties of applying fair value in inactive markets and developing countries, and admitted the use of historical cost for small and medium-sized entities. However, when market values are available, it is worth making use of their advantages. It would also be useful to implement simple rules of thumb to apply market values when they are not clearly known. For example, a time-based calculation can be easily applied in the case of certain non-matured biological assets for which active markets only exist in the case of matured assets, as is often the case for livestock or in the forest industry. of our findings are generalizable to other products with active markets. However, more research is needed with other types of agricultural production and wider samples.

5.4 Conclusions

With regards to the objectives of the study, the researcher concluded that fair value is friendlier that Historical cost in the valuation and reporting of the biological assets as it provides more confidence and tools to the users. In management Accounting, there is a phenomenon of data fixation that is the extent to which decisions become fixated on the output of accounting systems. This entails that decision makers display an inability to look behind the labels attached to accounting numbers in order to judge the appropriateness of the information for a given decision. With respect to Historical cost, Fair value gives a more understandable grasp of the situation of the sector in general and of the farm and it provides more efficient cues to overcome data fixation.

5.5 Suggestion for further studies

This research was focused on one specific type of biological assets, cows, and it does not reflect the situation of the other types of biological assets. More research is to be done with other types of biological assets and with a wider sample.

5.6 Limitation

The study was conducted only in the Kenyan environment, which does not give a clear indication of findings since the biological assets sector touches various other players in every county. Also, the first slot of responses received needed to be keenly analyzed in order to restructure the questionnaires and questions for better responses which was quite a difficult task for the researcher.

REFERENCES

American Institute of Certified Public Accountants (AICPA, 2011). *CPA horizons 20205 report.*

Ames, D. (2013). IFRS adoption and accounting quality: The case of South Africa. *Journal of Applied Economics and Business Research*, *3*(3), 154-165.

Argilés-Bosch, J. M., Miarons, M., Garcia-Blandon, J., Benavente, C., & Ravenda, D. (2018). Usefulness of fair valuation of biological assets for cash flow prediction. *Spanish Journal of Finance and Accounting/Revista Española de Financiación y Contabilidad*, *47*(2), 157-180.

Argilés, J. M., Garcia-Blandon, J., & Monllau, T. (2011). Fair value versus historical cost-based valuation for biological assets: predictability of financial information. *Revista de Contabilidad*, *14*(2), 87-113.

Bassi, A., Lochan, K., Satin, S., Singh, T. P., & Ulbricht, H. (2013). Models of wave-function collapse, underlying theories, and experimental tests. *Reviews of Modern Physics*, *85*(2), 471.

Ball, J. M., & James, R. D. (1992). Proposed experimental tests of a theory of fine microstructure and the two-well problem. *Philosophical Transactions of the Royal Society of London. Series A: Physical and Engineering Sciences*, *338*(1650), 389-450.

Banerjee, M., Capozzoli, M., McSweeney, L., & Sinha, D. (1999). Beyond kappa: A review of interrater agreement measures. *Canadian journal of statistics*, *27*(1), 3-23.

Bell, J. M., & Iskander, M. F. (2009). Experimental analysis of an ultrawideband hybrid EBG/ferrite ground plane. *IEEE Transactions on Instrumentation and Measurement*, *58*(8), 2899-2905.

Bleck, A., & Liu, X. (2007). Market transparency and the accounting regime. *Journal of Accounting Research*, *45*(2), 229-256.

Bloor, M., & Wood, F. (2016). Purposive sampling. *Keywords in Qualitative Methods*.

Botosan, C. A., & Huffman, A. A. (2015). Decision-useful asset measurement from a business valuation perspective. *Accounting Horizons*, *29*(4), 757-776.

Brier, B., & Wade, R. S. (1997). The use of natron in human mummification: a modern experiment. *Zeitschrift für ägyptische Sprache und Altertumskunde*, *124*(2), 89-100.

Briers, M., Luckett, P., & Chow, C. (1997). Data Fixation and the Use of Traditional Versus Activity-Based Costing Systems. *Abacus*, *33*(1), 49-68.

Burgstahler, D. C., & Dichev, I. D. (1997). Earnings, adaptation and equity value. *Accounting review*, 187-215.

Clavano, M. J. (2014, May). Factors That Influence the Valuation of Biological Assets and Compliance with IAS 41/PAS 41 Mandatory Disclosures by Selected Agricultural Companies in Davao Region. In *Proceedings of Global and Finance Research Conference* (pp. 5-6).

Dearman, D. T., & Shields, M. D. (2001). Cost knowledge and cost-based judgment performance. *Journal of management accounting research*, *13*(1), 1-18.

Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *Academy of management review*, *14*(1), 57-74.

Elad, C, Herbohn, K (2011) Implementing Fair Value Accounting in the Agricultural Sector. The Institute of Chartered Accountants of Scotland. Available at: https://www.icas.com/__data/assets/pdf_file/0019/10549/10-Implementing-Fair-Value-Accounting-In-The-Agricultural-Sector-ICAS.

Elfaki, A. A. A., & Hammad, S. M. E. (2015). The impact of the application of Fair Value Accounting on the quality of accounting information. An empirical study on a group of companies listed on the Khartoum stock exchange. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, *5*(1), 148-160.

Etikan, I., & Bala, K. (2017). Sampling and sampling methods. *Biometrics & Biostatistics International Journal*, *5*(6), 00149.

Gemmill-Herren, B. (2020). Closing the circle: an agroecological response to covid-19. *Agriculture and human values*, 1.

Heidhues, E., & Patel, C. (2008). The role of accounting information in decision-making processes in a German dairy cooperative. In *International Conference on Accounting and Business (10th: 2008)*. East China University of Science & Technology.

Huffman, A. (2018). Asset use and the relevance of fair value measurement: evidence from IAS 41. *Review of Accounting Studies*, *23*(4), 1274-1314.

IFRS 2011. Africa embraces IFRS

Kaplan, B., & Maxwell, J. A. (2005). Qualitative research methods for evaluating computer information systems. In *Evaluating the organizational impact of healthcare information systems* (pp. 30-55). Springer, New York, NY.

Lipe, R. C. (2002). Fair valuing debt turns deteriorating credit quality into positive signals for Boston Chicken. *Accounting Horizons*, *16*(2), 169-181.

Maxwell, J. A. (2005). A model for qualitative research design. *Qualitative research design: An interactive approach*, 214-253.

McCarthy, J. (2006). Rural geography: alternative rural economies-the search for alterity in forests, fisheries, food, and fair trade. *Progress in Human Geography*, *30*(6), 803-811.

Mohamed, N. N. (2015). *The perception of Malaysian palm plantation companies towards the adoption of a proposed standard of agriculture (IAS 41) in Malaysia* (Master's thesis, Kuala Lumpur: International Islamic University Malaysia, 2015).

Muhammad, K., & Ghani, E. K. (2014). A fair value model for bearer biological assets in promoting corporate governance: A proposal. *Journal of Agricultural Studies*, *2*(1), 16-26.

Nobes, C. (2019). On theoretical engorgement and the myth of fair value accounting in China. *Accounting, Auditing & Accountability Journal*.

Penman, S. H. (2007). Financial reporting quality: is fair value a plus or a minus?. *Accounting and business research*, *37*(sup1), 33-44.

Procházka, D. (2011). The role of fair value measurement in the recent financial crunch. *Economics, Management, and Financial Markets*, *6*(1), 989-1001.

PWC. 2011. IFRS and CPCs – The new Brazilian accounting environment.

Richards, G. J., & Briers, J. D. (1997, May). Capillary-blood-flow monitoring using laser speckle contrast analysis (LASCA): improving the dynamic range. In *Coherence Domain Optical Methods in Biomedical Science and Clinical Applications* (Vol. 2981, pp. 160-171). International Society for Optics and Photonics.

Schiff, L. I. (1960). On experimental tests of the general theory of relativity. *American Journal of Physics*, *28*(4), 340-343.

Shima, K. M., & Yang, D. C. (2012). Factors affecting the adoption of IFRS. *International journal of business*, *17*(3), 276.

UNCTAD, (2008). Practical Implementation of International Financial Reporting Standards: Lessons From Europe. Retrieved from http://.auditcommission.gov.uk/health/audit/financialmgmt/ifrs/pages/ifrsbriefingpaper.aspx on 2 October, 2011.

van Biljon, M., & Wingard, C. (2020). An agricultural sector assessment of biological asset valuation challenges with inputs considered from valuers. *International Journal of Financial, Accounting, and Management*, *2*(3), 243-258.

World Bank. (2020). World development indicators 2020. The World Bank.

World Databank. 2010. Development Data.

APPENDIX

Appendix 1: Exercises for both Fair value and Historical cost valuation method

Appendix 1.1 Exercise 1 Fair value valuation method

Please read the following exercise and indicate your answers to the required questions on the attached answer sheets:

Martin creates his company for his farming operations on 1/1/2021. His assets are made of machinery, 26 young cows constituting the biological assets and cash, with their respective values shown in the table below:

ASSETS (Ksh)		**LIABILITIES (Ksh)**	
Machinery	300,000	Capital	480,000
Cows	400,000		
Cash	80,000		
	480,000		**480,000**

Additional information:

- Ksh20,000 paid in full during the period for insurance of the head of operations
- Depreciation for machinery: ksh30,000.
- Other operating expenses include veterinary fees, feed, medicines and utilities amounting to ksh76,000.
- 7 of the cows gave birth to 7 calves at the end of May, which were sold towards the end of November for ksh294,000 cash. The calves weighed together 245kg and the sale price was ksh1,200 per kg.
- At the end of the October, 2 other cows gave birth to 2 calves.
- On 31/12/2021, the market price for the two-month calves is ks1,200/kg and their total weight is 70kg.
- The 26 cows at the year-end have a total market value of 310,000

Using the **fair-value method** of valuation, determine:

i) The unit and total value of inventories as at 31/12/2021

ii) The total value of the cows at as 31/12/2021

iii) Income for the operations during the period

Appendix 1.2 Exercise 2 Historical cost valuation method

Please read the following exercise and indicate your answers to the required questions on the attached answer sheets:

Martin creates his company for his farming operations on 1/1/2021. His assets are made of machinery, 26 young cows constituting the biological assets and cash, with their respective values shown in the table below:

ASSETS (Ksh)		**LIABILITIES (Ksh)**	
Machinery	300,000	Capital	480,000
Cows	400,000		
Cash	80,000		
	480,000		**480,000**

Additional information:

- Ksh20,000 paid in full during the period for insurance of the head of operations
- Depreciation for machinery ksh30,000 and for the cows ksh90,000
- Other operating expenses include veterinary fees, feed, medicines and utilities amounting to ksh76,000.
- 7 of the cows gave birth to 7 calves at the end of May, which were sold towards the end of November for ksh294,000 cash. The calves weighed together 245kg and the sale price was ksh1,200 per kg.
- At the end of the October, 2 other cows gave birth to 2 calves.
- On 31/12/2021, the market price for the two-month calves is ks1,200/kg and their total weight is 70kg.
- The 26 cows at the year-end have a total market value of 310,000

Using the **historical cost method** of valuation, determine:

i) The units and total value of inventories as at 31/12/12021 on a historical cost basis or market cost, if lower, according to the accounting rules.

ii) The total value of the cows at as 31/12/2021

iii) Income for the operations during the period

Appendix 2: Answer sheets to exercise 1

Appendix 2.1 Answer sheet to exercise 1 on Fair value method of valuation

Kindly tick the box that refers to you:

1. Gender:

Male ()

Female ()

2. What is the average number of people in your organization?

Below 10 ()

10 to 49 ()

50 to 249 ()

250 and above ()

3. What age group do you belong to?

Below 30 years ()

31 to 40 years ()

41 to 50 years ()

51 years and above ()

Write answers to the following required questions:

PART I:

Value of each calf at the year-end: _____

Total value for all calves at the year-end: _____

PART II

Total value of the 26 cows to put in the balance sheet at the year-end: _____

PART III

Income from operation at the end of the period: _____

(The Profit and Loss statement and Statement of Financial position worksheet below may be useful to you. Alternatively, you may make any calculations that you find helpful)

INCOME STATEMENT:

ITEM	AMOUNT(Ksh)
Revenues from sale of calves	294,000
Variation of biological assets caused by calves	
Variation of biological assets caused by cows	
Depreciation of machinery	30,000
Other operating expenses	96,000
NET INCOME	

STATEMENT OF FINANCIAL POSTION:

ASSETS		LIABILITIES	
ITEM	**AMOUNT**	**ITEM**	**AMOUNT**
Cows		Capital Stock	480,000
Machinery Accumulated Depreciation	300,000 -30,000	 Net income	
Inventories (calves)			
Cash	278,000		
TOTAL ASSETS		**TOTAL LIABILITIES**	

Appendix 2.2 Answer sheet to exercise 2 on Historical cost method of valuation

Kindly tick the box that refers to you:

1. Gender:

Male ()

Female ()

2. What is the average number of people in your organization?

Below 10 ()

10 to 49 ()

50 to 249 ()

250 and above ()

3. What age group do you belong to?

Below 30 years ()

31 to 40 years ()

41 to 50 years ()

51 years and above ()

Write answers to the following required questions:

PART I:

Value of each calf at the year-end: _____

Total value for all calves at the year-end: _____

PART II

Total value of the 26 cows to put in the balance sheet at the year-end: _____

PART III

Income from operation at the end of the period: _____

(The Profit and Loss statement and Statement of Financial position worksheet below may be useful to you. Alternatively, you may make any calculations that you find helpful)

INCOME STATEMENT

ITEM	**AMOUNT(Ksh)**
Revenues from sale of calves	294,000
Variation of biological assets caused by calves	
Depreciation of machinery	30,000
Depreciation of cows	90,000
Other operating expenses	96,000
NET INCOME	

STATEMENT OF FINANCIAL POSTION:

ASSETS		**LIABILITIES**	
ITEM	**AMOUNT**	**ITEM**	**AMOUNT**
Machinery Accumulated Depreciation on cows	400,000 -90,000	Capital Stock	480,000
Machinery Accumulated Depreciation	300,000 -30,000	Net income	
Inventories (calves)			
Cash	278,000		
TOTAL ASSETS		**TOTAL LIABILITIES**	

Appendix 3: Questionnaire

Kindly tick the box that corresponds to your current situation:

SECTION A: Demographic profile

Kindly tick the box that refers to you:

1. Gender:

Male ()

Female ()

2. What is the average number of people in your organization?

Below 10 ()

10 to 49 ()

50 to 249 ()

250 and above ()

3. What age group do you belong to?

Below 30 years ()

31 to 40 years ()

41 to 50 years ()

51 years and above ()

SECTION B: Perceived difficulties in applying Fair value and historical cost

	1 **In almost all the biological assets**	**2** **In most of the biological assets**	**3** **In approximately half of the biological assets**	**4** **In few biological assets**	**5** **In almost no biological assets**
To what extent do you face challenges in applying various valuation criteria for					

biological asset?					
To what extent has the cost of production or purchase of the asset affected the valuation and reporting?					
Is the market price fair enough?					
Think of a given biological asset, is the market price for the direct substitute fair enough?					

	1 Strongly disagree	**2 Disagree**	**3 Neutral**	**4 Agree**	**5 Strongly agree**
Is the cost of maintenance of those biological asset affordable?					

Appendix 4: Letter of introduction from the University

Ole Sangale Rd, Madaraka Estate
P. O Box 59857 - 00200, Nairobi, Kenya.
Cell: +254 703 034 414/6/7, Twitter: @SBSKenya
Facebook/Linkedin: Strathmore Business School

Email: **info@sbs.ac.ke** or visit **www.sbs.strathmore.edu**

Strathmore UNIVERSITY BUSINESS SCHOOL

April 19, 2022

To Whom may concern

Academic Reference for Bagenda, Olame Patient– Student Number 113687

Strathmore University offers the Bachelor of Commerce (BCom) degree program. In their 4th year of study, each degree student is required to work on a Management Research Project. The project involves reading literature that relates to the research topic; data collection and analysis and finally preparing a written document of the research findings and recommendations.

Olame is requesting to gather information to be used in her research. She is accountable for all information extracted from you and ensures that it will be used for research purposes only and will be kept confidential.

The research is entitled **" A comparative study of the challenges using fair value and historical cost in the valuation of the biological assets".**

We are looking forward to your cooperation and assistance to the above-named student.

Yours faithfully,

Mary Weremba
Manager, Undergraduate Programmes
Strathmore Business School
Email:mweremba@strathmore.edu

Appendix 5: Similarity Report

Document Information

Analyzed document Bagenda Project .docx (D138047776)
Submitted 2022-05 25T20:25:00.0000000
Submitted by
Submitter email Olame.Bagenda@strathmore.edu
Similarity 11%
Analysis address library.strath@analysis.urkund.com

Sources included in the report

W	URL: https://accounting.feb.ui.ac.id/apjaf/pub/pub2/4%20-%20Paper%202_Maruli%20and%20farahmita.pdf Fetched: 2020-08-06T15:54:06.4170000	6
W	URL: https://www.richtmann.org/journal/index.php/mjss/article/view/9937/9570 Fetched: 2021-09-23T20:01:14.2470000	13
W	URL: http://revista.cafr.ro/temp/Article_9481.pdf Fetched: 2022-05-25T20:26:24.0030000	1
W	URL: https://www.iasplus.com/en/standards/ias/ias41 Fetched: 2019 11-13T22:54:59.9770000	2
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