

**KIGALI INDEPENDENT UNIVERSITY ULK**

**SCHOOL OF POST GRADUATE**

**P.O Box: 2280 KIGALI**

**PUBLIC SECTOR ACCOUNTING STANDARDS AND QUALITY OF FINANCIAL  
REPORTING IN LOCAL ADMINISTRATIVE ENTITIES.**

**CASE STUDY: KAMONYI DISTRICT**

**PERIOD OF THE STUDY: 2021-2023**

**THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE ACADEMIC  
REQUIREMENTS FOR THE AWARD OF MASTER'S DEGREE IN ACCOUNTING**

**BY**

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**September, 2024**

**DECLARATION**

I hereby declare that this research work “**Public Sector Accounting Standards and Quality of Financial Reporting in local Administrative Entities, Case study: Kamonyi District, Period of the study: 2021-2023**” is my original work and has not been presented for a degree or any other academic award in any University or in any institution of higher learning.

**NAME: MUTAKO Clementine**

**Date...../...../2024**

**Signature:.....**

**APPROVAL**

This is to certify that the present research work “**Public Sector Accounting Standards and Quality of Financial Reporting in local Administrative Entities, Case study: Kamonyi District, Period of the study: 2021-2023**” was a research study conducted by **MUTAKO Clementine** under my guidance and supervision and thereby requests it for acceptance by Kigali Independent University ULK.

**SUPERVISOR: Pro. Dr. NOSIKE Austin**

**Date...../...../2024**

**Signature of supervisor .....**

**DEDICATION**

To my Lovely Husband;

To my family,

To my sisters and brothers;

To all my friends and classmates

## ACKNOWLEDGMENTS

First and foremost I profound thanks go to Almighty God, to whom I owe my living, wisdom and good health during the time; I have been working on this peculiar work. Glory is to him.

My special thanks go to the Honorable **Prof. Dr. RWIGAMBA Balinda Founder** and president of Kigali Independent University ULK for the work of his hands which gave me opportunity of pursuing our university studies.

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A very big note of thanks goes to my colleagues at Kigali Independent University ULK, and everyone who has helped me to conduct this research, support and courage you gave me during the hard times of courses. Your special contributions could always be remembered.

Thank you all, May God bless you!

**MUTAKO Clementine**

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## **ABSTRACT**

This study investigated adoption of international public sector accounting standards and quality of financial reporting in Rwanda for the period of 2013-2023. Primary data were extracted from respondents of public institutions in Kamonyi district of Rwanda. The data was coded and quantified. The study adopted a cross sectional correlation and survey designs and employed both quantitative and qualitative approaches, a census sampling technique and robust regression model. The population size was 106 and a sample size of 106. The study adopted four independent variables as revenue recognition adoption, depreciation measurement adoption, Lease classification and asset classification. The study revealed that Revenue recognition has negative and statistically not significant; Depreciation measurement adoption has positive and statistically not significant; Asset classification standard estimate has negative and statistically not significant; and Lease classification adoption has positive and statistically significant impact on quality of financial report in Kamonyi district of Rwanda. Based on the findings, the study concluded that the adoption impacted quality of IPSAS but not significantly. Accordingly, this study recommends that revenue recognition standard adoption of IPSAS should be hyped in order for more operators to adopt and embraces it. The sponsored Depreciation measurement method by IPSAS should be sustained. Persistent education on Asset classification standard should be sustained if its adoption significantly affected quality financial report; and the lease classification in the IPSAS should be maintained. This study recommends that further studies could be undertaken to cover other districts within Rwanda. This provide a more elaborate generalization of research outcomes in relation to issues under discourse which this is unable to capture.

## **CHAPTER ONE: GENERAL INTRODUCTION**

### **1.0. Introduction**

This study comprised basically of how Public sector Accounting standards affect Quality of financial reporting in local administrative entities particularly in Kamonyi district of Rwanda. It generally consist of chapter one, composed of Introduction, Background, Statement of problem, General Objective, specific objectives, research questions, Scope such as content scope, geographical scope and time scope, Significance of the study, and Organization of study. Also, chapter two with related literature review, chapter three , methodology, chapter four with the data presentation and analysis and summary , conclusion and recommendation.

### **1.1. Background of the study**

Imperatively, there was need for continuous improvement in business reporting in every nation. Consequently, the Seas Getters Group adopted IAS/IFRS accounting standards from 1<sup>st</sup> January 2018 as European Commission Regulation no. 1606/2002, came into force. The new standards were adopted in adopted according to IAS "Interim Financial Reporting". These standards were adopted in preparing the comparative financial position statement sheets, income statements and cash flow statements, with the exception of the measurement and recognition of financial instruments, particularly with regard to exchange risk hedges and the recognition of bank account segments. The institution in fact exercised the option specified in IFRS to define the date of transition. For a description of the effects arising from the transition to International Financial Reporting Standards (IAS/IFRS), containing a reconciliation between stakeholders' equity and net income for the period according to Accounting standards and according to International Financial Reporting Standards (IAS/IFRS), both with reference to the previous comparable interim period (ended June 30, 2018), the reporting date for the last financial statements prepared in accordance with the accounting standards previously utilized.

The concern of this research project is to take inventory on accounting standards & financial reporting. Rwanda is a country that is in the process of enhancing the local government to make the accounts in compliance with international financial reporting standards and generally accepted accounting standards to ensure the comparability not only of the financial statements of an entity from one period to another but also the financial statements of different entities. Accounting plays a major role by providing information in making decision in management by recording data about institution until needed and proceeded to be useful; hence it has to be

guided by general accepted accounting standards (GAAP). Today, more people than ever before recognize the importance of accounting information and the profound effect that unethical and misleading financial reports can have on a public and prevents institutions, its owners, its employees, its lenders. The importance of transactions analysis and proper recording of transactions has clearly been demonstrated in some of the recent business or institutions failures that have been reported in the press. If the financial statements of a public or private institutions are to properly represent the results of operations and the financial condition of the institutions, the transactions must be analyzed and recorded in the accounts following generally accepted accounting standards Financial Report (Joseph, 2020)

Financial reporting is the process of identifying, measuring and communicating economic information to others, so that they may make decisions on the basis of that information and assess the stewardship of the entity's management. Financial reporting involves the different field like recording transactions undertaken by a business entity, grouping similar transactions together which are appropriate to the business, presenting periodic result and reporting financial transaction of public institutions. Financial reporting can also identify on accounting standards in public institutions and private institutions, it however depends on types of principle of accounting. ([www.fasb.org/st](http://www.fasb.org/st) available on September 15, 2017)

According to International Accounting Standard Board (IASB, 2019), financial reporting is to provide information about the financial position of an entity that is useful to various users in making economic decisions. Therefore, the need for the development of unified accounting standards has been the primary driver of international public sector Accounting Standards for public sector financial reporting (Olola, 2019; Nzewi & Faith, 2020). Due to that, International Public Sector Accounting Standards Board (IPSASB) issued a set of accounting standards called International Public Sector Accounting Standards (IPSAS) to regulate government accounting in response to calls for greater government financial reporting quality in term of relevance, faithful representation, understandability, verifiability, timeliness, comparability. Gebreyesus (2021) maintained that IPSAS adoption was to improve the quality of general purpose financial reporting by public sector entities, leading to better informed assessments of the resource allocation decisions, thereby increasing transparency and accountability of governments to their citizens and their elected representatives. Ademola et al (2017) noted that IPSAS adoption ensures excellent financial operations by increasing the level of accountability and transparency.

Also, it was revealed that financial misappropriations within the public sector however big such institution is. This is possible because IPSAS provides a self regulated internal control system. Studies conducted by AhmadImam et al (2020), Edwin et al (2020), Amahalu and Chinyere (2020), Gebreyesus (2021), Egolum and Ndum (2021), Beredugo (2021), Obineme et al (2021) and ThankGod et al (2021)), revealed that, the adoption of IPSAS by developing countries improve both the quality and comparability of financial information reported by their government entities for external users. In recent times, even after the implementation of IPSAS adoption by some district Governments in Rwanda, there still exists contention on the reliability of their financial reports. This could be as a result of the infrastructural gap regarding the need for skilled staff that could effectively translate the standards and should report on some specific areas, particularly in the narrative notes accompanying the financial statements to provide detail explanation of the financial data to the users (Beredugo et al, 2021). Another gap could be the need for a paradigm shift in finance culture and mindset to exploit the opportunities presented to drive value. Reports from some districts in Rwanda shows audit qualifications on government's assets; income and receivables; uncommon and extravagant expenditure; and investment property. Technical accounting issues and challenges include valuation, poor asset classification, depreciation, impairments and fair value of investment property, while the existing technology in some States does not equally support full IPSAS implementation (Izueke et al, 2020). Due to this development, there is now emphasis on the need for increased transparency, uniformity and comparability in the set of accounting standards guiding the preparation of financial statement for public entities. The essence of these accounting standards is to make public entities' financial statements more relevant, understandable, verifiable, and timeliness.

IPSAS adoption continues to suffer serious setback. Unfortunately, continuous delay in the adoption of IPSAS counteracts the actualization of the benefits associated with it such as economic leverage and good relationship with sovereign nations or states because the state cannot operate in isolation in the country. Due to that studies have been carried out in different areas within and outside Rwanda on adoption of IPSAS and financial reporting quality. The studies of (Brusca, et al, 2015; Tanjeh, 2016; Pena & Franco, 2017; Zhuquan and Javed, 2018; Ababneh et al, 2019; Zandi & Abdullah, 2019; Chytis et al, 2020; Bashir & Amir, 2020) were conducted in foreign countries like Indian, Asia, Kenya, Nepal, Bangladesh, Pakistan and Sri Lanka and found that adoption of IPSAS has moderate effect on the quality of financial reports

in public sector. While (Obara& Efeeloo, 2017; Okere et al, 2017; Abimbola et al, 2017; Ademola et al, 2017; Akinleye et al, 2018; Olola , 2019; Obineme et al, 2021; ThankGod et al, 2021) conducted their studies in various states and local government in Nigeria like; Ondo, Ekiti, Oyo, Anambra and some other States in Nigeria and found that adoption of IPSAS increases the level of financial reporting quality. But none of these studies has been conducted in Kamonyi District. Therefore this study investigates the relationship between Accounting Standards (IPSAS) adoption and financial reporting quality of selected public institutions in Kamonyi District.

## **1.2 Problem Statement**

According to the different problems in financial management, Rwanda setting the accounting program for resolving those problems and signed the agreement with GAAP and IFRS; however compares to other countries, Rwanda delays to adopt the International Financial Reporting Standards. There is a fact that Rwanda is making efforts to develop the legal local Government management system. One of the areas for reforms is the modernization of accounting which requires aligning the local accounting practices with internationally accepted standards and codes. The reports on observance of Standards and codes (ROSC) team recommended that there should be collaboration amongst the government, regulators, the accountancy professional, principles of accounting, and other stakeholder groups for developing and implementing a country strategy and a detailed country action plan and implementing a country strategy for preparing financial reporting , and a detailed country action plan that clearly sets out the key actions and allocates responsibilities for implementing the necessary reforms in financial management . Although, the adoption of International Financial Reporting Standards improves corporate governance, improves the users' adoptability of accounting standards and creates credibility of financial reports and improves trade trends in the country, the development and enactment of the new accounting policy has to consider the country's ability to carry out the new policy and new financial management systems .(IMF,2018; W. B., 2018)

After the adoption of international accounting standard and accounting standards in Rwanda, what improvements were done in Kamonyi District in preparation of quality of financial report after using accounting standards, what should be the effective process of adoption of international accounting standards according in preparation of financial reporting, and how this

should support the development for management of public institution in Rwanda? Thus, in order to find the answers to these questions based on empirical research, we have selected this subject as our choice of project research. The study therefore, seek to investigate the influence of standards of accounting on preparation of financial reporting in Kamonyi District, and which strategies Kamonyi District may use for preparation financial reporting in the process of prevent Audit quarries in accountabilities.

### **1.3 Objectives of Study**

The objectives of this study are categorized into two namely, general objectives and specific objectives.

#### **1.3.1 The general objective of the study**

The objective of this study is to analyse the effect of the adoption of international Public Sector Accounting Standards on quality of financial reports in public sector in Kamonyi district

#### **1.3.2 Specific objectives.**

The specific objectives are to;

- 1.Examine the effect of revenue recognition on quality of financial reports in public sector in Kamonyi district.
2. Determine the effect of Depreciation measurement on the quality of financial reporting in Kamonyi district.
3. Investigate the effect of asset classification on the quality of financial reporting in kamonyi district.
4. Find out the effect of lease classification on the quality of financial reporting in kamonyi district.

### **1.4 Research Questions**

1. How does revenue recognition of IPSAS impact the quality of financial reports in public sector in Kamonyi district?
2. What is the effect of Depreciation measurement of IPSAS on quality of financial reports in public sector in Kamonyi district?



3. In what ways does asset classification standard of IPSAS affect the quality of financial reporting in public sector of Kamonyi district?
4. How does lease classification of IPSAS affect the quality of financial reporting in Kamonyi District?

### **1.5 Research Hypothesis**

Ho1. Revenue recognition in IPSAS does not significantly impact the quality of financial reports in public sector in Kamonyi district.

Ho2. Depreciation measurement in IPSAS does not significantly impact the quality of financial reports in public sector in Kamonyi district.

Ho3. Asset classification standard in IPSAS does not significantly affect the quality of financial reporting in public sector of Kamonyi district.

Ho4. Lease classification in IPSAS does not significantly affect the quality of financial reporting in Kamonyi District.

### **1.6 Significance of the Study**

The study help in gaining research skills and experience on accounting standards , the level of compliance with generally accepted accounting standards s, and international financial reporting standards by local government operating in Rwanda and give the recommendations on compliance with accounting standards for good implementation of accounting policy and financial reporting by the implementation for the International Accounting Standards Board (IASB)

Thus this research study is significant to the researcher, the community and Academic and scientific interest as follows:

#### **1.6.1 to the researcher**

This study helps me to understand the Accounting procedure and system applied in Rwanda and the contribution of accounting standards to the financial reporting of the Country, especially in

accountability of Kamonyi District. In addition, contribute to the partial fulfilment for the award of Bachelor's degree in finance and knowledge gaining through, help thereafter my studies.

### **1.6.2 Stack holders of Kamonyi District**

The results of my study be of a great importance to Stack holders by understanding of principles of accounting applied in Rwanda, the procedure followed in financial reporting, especially the accounting standards to preparation of financial reporting in Kamonyi District.

### **1.6.3 Academic and scientific interest**

This study is useful for academicians. The results of this study be used as references for academic researchers be interested in the domain of accountabilities. This study be also help other researchers to understand and undertake various studies in analyzing the accounting standards and financial reporting.

### **1.6.4 Kamonyi District**

This study help employees of Kamonyi District in financial entity to improve their financial reports by considering principles of accounting

## **1.7 Scope of the Study**

A scientific research study has to be limited in both space and other resources like time. Due to financial and time constraints, it not be easy to carry out the study covering a very large area. The study make a great emphasis in "Kamonyi District". This research report is covered on the accounting Standards to proper quality of financial reporting in "Kamonyi District "for a period of three years from 2021 to 2023.

### **1.7.1 Content scope**

The study be made a great emphasis on analysis accounting standards and financial reporting in Kamonyi District. This report is made of all system using accounting standards in Kamonyi District. The study subject is into two variables: independent variable and dependent variable, in such a case the study oriented to ways the accounting Standards and quality of financial reporting.

### **1.6.2 The geographical scope**

The study be carried out on quality of financial reporting in a public sectors located in Southern Province, Kamonyi District. Here it means that the accounting standards and financial reporting within Kamonyi District be considered as target population, especially considering the main office of Kamonyi District.

### **1.6.3 The time scope**

The research be using data recorded from 2021 to 2023. It intends to assess the level of knowledge and practice of the accounting standards and financial reporting of the period.

## **1.7. Organization of Thesis.**

The study is divided into five chapters as follows:

**The first chapter** is made up of introduction, background of the study, problem statement, and objectives of the study, research questions and significance of the study, scope of the study and organization of the study. With the research topic be defined, the accent be put on the accounting standards and quality of financial reporting.

**Chapter two:** be a Presentation of literature review. In this chapter, the key concepts and construct definitions included. The study done or related literature from different books, journals and magazines have been in this chapter, and critical review.

**Chapter three:** Methodology be include population, sample, size sampling procedure, techniques, data collection, data analysis, limitations and Ethical considerations.

**Chapter four** be focused on research findings, analysis and interpretations of data collected, these findings interpreted

**Chapter five:** Contains the summary of findings, conclusion and recommendations of the different field for rerated of my research project.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.0. Introduction**

This chapter review the literature related to this study. It includes the ideas and findings of other researchers on what is known about the research problem and what still needs to be researched. Definitions of key concepts, literature related to the study, theories and content of the study, Empirical review, which done from a global point down to the local situation, critical review has identified the gap by citing those who be working on the concept, and summary highlighted the key issues raised, facts and reviewed issues.

### **2.1. Conceptual framework**

The conceptual framework interlinks Independent variable and dependent variable as depicted below.

#### **2.1.1. Revenue Recognition**

Revenue recognition is a key principle in accounting that determines the specific conditions under which income becomes recognized as revenue. The standard governing revenue recognition is critical for ensuring that financial statements provide a true and fair view of an entity's financial performance. The International Financial Reporting Standard (IFRS) 15, "Revenue from Contracts with Customers," is the global standard that outlines how and when revenue should be recognized.

The key Principles of IFRS 15 is to identify the Contract(s) with a Customer, Identify the Performance Obligations in the Contract, Performance obligations are promises in a contract to transfer goods or services to a customer. Also to determine the Transaction Price, Allocate the Transaction Price to the Performance Obligations in the Contract, by allocating price to each performance obligation based on the relative standalone selling prices of each distinct good or service. Ultimately, recognize Revenue When (or as) the Entity Satisfies a Performance Obligation. Revenue is recognized when control of the goods or services is transferred to the customer, either over time or at a point in time.

Quality financial reporting is essential for the transparency and reliability of financial statements, which in turn supports effective decision-making by stakeholders such as investors, creditors, and regulators. The adoption of IFRS standards, including IFRS 15 for revenue recognition, plays a significant role in enhancing the quality of financial reporting in Rwanda. Adopting IFRS

15 ensures that revenue is recognized consistently across entities and industries, making financial statements more comparable and reliable for stakeholders. The detailed disclosure requirements of IFRS 15 enhance transparency by providing stakeholders with comprehensive information about the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. Accurate revenue recognition ensures that the financial statements reflect the true economic substance of transactions, which enhances their reliability. Adopting IFRS, including IFRS 15, aligns Rwanda's financial reporting with global standards, facilitating cross-border investment and economic integration. High-quality financial reporting increases stakeholder confidence in the financial statements, which is crucial for attracting investment and promoting economic growth. Compliance with IFRS 15 helps entities meet regulatory requirements and avoid penalties associated with improper revenue recognition.

Rwanda has adopted IFRS standards for financial reporting, which includes IFRS 15. Entities in Rwanda are required to comply with these standards in preparing their financial statements.

It has however, had challenges such as Training and Expertise, System and Process Changes, Interpretation and Judgment and Disclosure Requirements.

Revenue recognition, governed by IFRS 15, is a fundamental aspect of financial reporting that significantly impacts the quality and reliability of financial statements. In Rwanda, the adoption of IFRS standards, including IFRS 15, enhances the transparency, comparability, and accuracy of financial reporting. Despite challenges in implementation, the benefits of adhering to these global standards support the overall economic development by fostering investor confidence and facilitating regulatory compliance.

IPSAS 47, issued by the International Public Sector Accounting Standards Board (IPSASB), outlines the principles for recognizing revenue from contracts with customers. It aims to provide more consistent and transparent financial reporting by public sector entities. The standard is based on IFRS 15 and follows a five-step model for revenue recognition. The major step may include to identify the Contract with a Customer by Establishing the criteria for what constitutes a contract; determination of the distinct goods or services promised in a contract. Also is establishment of the amount of consideration the entity expects to receive in exchange for fulfilling the performance obligations; and distribution of the transaction price to each performance obligation based on their relative standalone selling prices. Lastly, revenue is

recognized when control of the goods or services is transferred to the customer, either over time or at a point in time.

This action is not without certain challenges as complexity in Contract Identification, performance Obligations, transaction Price Determination, allocation of Transaction Price, Timing of Revenue Recognition, Transition and Implementation, as adopting IPSAS 47 may require significant changes to existing accounting systems and processes. Entities need to ensure that they have the necessary systems in place to capture the required information for revenue recognition under the new standard. The standard mandates extensive disclosures about contracts with customers, performance obligations, and judgments made in applying the standard. Preparing these disclosures requires comprehensive data collection and analysis (Disclosures) and Training and Education of staff.

Overall, while IPSAS 47 aims to bring more consistency and transparency to revenue recognition in the public sector, its implementation can be challenging due to the complexity of contracts, the need for significant judgment in various areas, and the extensive disclosure requirements.

#### 2.1.2. Depreciation measurement

Depreciable amount is the cost of an asset, or other amount substituted for cost, less its residual value. Depreciation is the systematic allocation of the depreciable amount of an asset over its useful life. The Standard requires an entity to determine the depreciation charge separately for each significant part of an item of property, plant and equipment (see paragraphs 59 to 63). Previously, IPSAS 17 did not make this clear. The Standard requires an entity to begin depreciating an item of property, plant and equipment when it is available for use and to continue depreciating it until it is derecognized, even if during that period the item is idle (see paragraph 71). Previously, IPSAS 17 did not specify when depreciation of an item began. It specified that an entity should cease depreciating an item when the item was retired from active use and was held for disposal. Accordingly, IFRS16 defines depreciation as over the shorter of the useful life of the asset and the lease term, unless the title to the asset transfers at the end of the lease term, in which case depreciation is over the useful life. Depreciation is the systematic allocation of the depreciable amount of an asset over its useful life (IPSAS 17.13, IPSAS 21.14).

Depreciation is a type of accounting method which is devised for allocating the cost of a tangible or physical asset over its useful life or its life expectancy. Depreciation indicates how much of an

asset's value has been used up in its life. The depreciation method should systematically allocate an asset's depreciable amount over its useful life, reflecting the pattern in which the asset's future economic benefits are expected to be consumed by the entity (IAS 16.60). The most commonly used depreciation method is Straight-line method. Depreciation is the systematic reduction of an asset's cost over its useful lifespan; various methods exist to calculate depreciation, including the straight-line basis, declining balance, double declining balance, units of production, and sum-of-the-years' digits methods. Similarly, IPSAS 17 is to prescribe the accounting treatment for property, plant and equipment so that users of financial statements can discern information about an entity's investment in its property, plant and equipment and any changes in such investment. Depreciation measurement as an accounting standard in Rwanda and its gains and challenges according to IPSAS.

Depreciation is the systematic allocation of the cost of a tangible fixed asset over its useful life. In Rwanda, the measurement and reporting of depreciation are governed by the International Public Sector Accounting Standards (IPSAS) for public sector entities and International Financial Reporting Standards (IFRS) for private sector entities. Here, we focus on the public sector and IPSAS.

IPSAS 17 - Property, Plant, and Equipment is the primary standard that outlines how public sector entities should measure, recognize, and depreciate their property, plant, and equipment (PPE).

In the area of recognition, Assets are recognized when it is probable that future economic benefits or service potential associated with the asset flow to the entity, and the cost or value of the asset can be measured reliably. Initially, PPE is measured at cost. After recognition, entities may choose either the cost model or the revaluation model for subsequent measurement.

Assets are carried at cost less accumulated depreciation and impairment losses for its Cost Model. Assets are carried at a revalued amount, being their fair value at the date of revaluation less subsequent depreciation and impairment losses as it concerns Revaluation Model. Depreciation is charged systematically over the asset's useful life. The method of depreciation (straight-line, diminishing balance, or units of production) should reflect the pattern in which the asset's future economic benefits or service potential are expected to be consumed.

Entities must disclose the depreciation methods used, the useful lives or depreciation rates, the gross carrying amount and the accumulated depreciation (aggregated with accumulated impairment losses) at the beginning and end of the period.

Adopting IPSAS improves the transparency of financial statements by providing a clear and consistent method for recognizing and depreciating assets. IPSAS enables comparability between different public sector entities within Rwanda and internationally, facilitating better benchmarking and performance assessment. Accurate depreciation measurement helps in assessing the true cost of services, leading to more informed decision-making and efficient resource allocation. Systematic depreciation encourages better management and maintenance of public assets, ensuring they are kept in good working condition throughout their useful life.

IPSAS adoption enhances the credibility of financial statements, promoting accountability and trust among stakeholders, including donors, lenders, and the general public. Implementing IPSAS requires significant training and capacity-building for accountants, auditors, and other finance personnel to ensure proper understanding and application of the standards. The public sector in Rwanda may face resource constraints in terms of funding, technology, and human resources needed to implement and maintain IPSAS compliance. Determining the fair value of assets for revaluation purposes can be challenging, especially for specialized or unique public assets. Adoption of IPSAS may require substantial changes to existing accounting systems and processes, which can be time-consuming and costly. Maintaining compliance with IPSAS involves continuous monitoring and updating of accounting policies and practices, which requires ongoing effort and commitment.

The adoption of IPSAS for depreciation measurement in Rwanda's public sector brings numerous benefits, including enhanced transparency, comparability, and improved decision-making. However, it also presents challenges such as the need for capacity building, resource constraints, and the complexity of asset valuation. Despite these challenges, the gains from implementing IPSAS, particularly in promoting accountability and better asset management, make it a valuable endeavour for the public sector in Rwanda

### 2.1.3. Asset Classification

An asset is a resource with economic value that an individual, corporation, or country owns or controls with the expectation that it provide a future benefit. Again, an asset is a resource



presently controlled by the entity as a result of past events. Assets are reported on a company's statement of financial position. They're classified as current, non-current, financial, and intangible. Public sector assets are those assets owned and/or controlled by governmental or quasi-governmental entities to provide goods or services to the general public. The principles that apply to the valuation of public sector assets are essentially the same as for any other assets. The valuation of public sector assets may be undertaken for a range of purposes including financial reporting, privatisation planning, loan origination, bond issuance, and cost-benefit or economic analyses performed by governments and quasi-government entities either to determine whether a public sector asset is being used and managed efficiently or to set pricing for monopoly services.

**IFRS 9 and Financial Asset Classification:** The implementation of IFRS 9 has brought significant changes to the classification of financial assets, impacting firm value. Recent studies, such as those by Ben Ltaief and Moalla (2023), indicate that the classification of financial assets, rather than the mere adoption of IFRS 9, significantly affects firm value. They found that assets classified as fair value through other comprehensive income positively affect firm value, while those classified as amortized cost or fair value through profit or loss negatively impact it (Emerald Insight, 2021).

Asset can be broadly classified as Public sector asset if the asset is owned and/or controlled by a governmental or quasi-governmental entity, for the provision of some public service or good. Public sector assets comprise different asset types, including conventional assets as well as heritage and conservation assets, infrastructure assets, public utility plants, recreational assets, and public buildings (e.g., military facilities), each category of which constitutes property, plant and equipment within the meaning of IPSASs and IFRSs.

Note that the overview definition and recognition reflect the IPSASB's Public Sector Conceptual Framework. The framework does not supersede individual IPSAS. The individual IPSAS may be reflective of the previous asset definition which in substance is not significantly different but does differ in the use of terminology. The IPSAS may be updated at some point in the future in order to be consistent with the framework.

Typically, Public Sector Assets can be classified as financial assets (monetary assets), Cash and cash equivalents; Revenues receivable; Loans and advances receivable; Investments and

derivatives; Non-financial assets; Physical assets (non-monetary assets) Inventories Property, plant and equipment; Intangible assets Computer software.

Furthermore, the implementation of the International Public Sector Accounting Standards (IPSAS) in Rwanda has been an ongoing process with notable achievements and challenges, particularly regarding asset classification and management. It has achieved improved transparency and accountability in financial reporting within Rwanda's public sector. By providing a standardized framework for reporting, IPSAS helps ensure that financial statements are clear, comparable, and reliable, thereby promoting greater accountability among public sector entities (Emerald). IPSAS implementation has encouraged more systematic asset management practices. This includes the accurate classification and valuation of assets, which is critical for effective public resource management. It helps in the proper tracking and maintenance of public assets, ensuring they are used efficiently and sustainably (ACCA Global 2020). Moreso, with IPSAS, Rwanda's financial statements are more comparable with those of other countries, facilitating better benchmarking and analysis. This is particularly beneficial for attracting foreign investment and aid, as donors and investors prefer transparent and standardized reporting (Emerald,2021).

One of the significant challenges in implementing IPSAS in Rwanda is the limited capacity in terms of trained personnel. There is a need for continuous training and professional development for accountants and auditors to ensure they are well-versed in IPSAS requirements (ACCA Global). The financial and technological resources required to implement and maintain IPSAS-compliant systems are considerable. Many public sector entities in Rwanda struggle with these constraints, which can slow down the implementation process and affect the quality of financial reporting (Emerald). Accurately valuing public sector assets, particularly specialized or heritage assets, poses a challenge. Determining fair value for these assets can be complex and may require specialized skills and knowledge that are currently in short supply (ACCA Global).

**Political and Economic Factors:**

The success of IPSAS adoption can be influenced by political and economic factors. Studies have highlighted that political and economic stability are crucial for the successful implementation of accounting reforms. In some cases, political interference can undermine the objectivity and effectiveness of IPSAS implementation.

Specifically, findings points to the fact that Rwanda is in a transitional phase, moving from a modified accrual-based accounting system towards full accrual accounting as per IPSAS requirements. This gradual transition helps in managing the complexities involved but also prolongs the full benefits of IPSAS adoption (Emerald).

The integration of IPSAS into existing financial management frameworks has been challenging. There is often resistance to change, especially when the new standards require significant deviations from traditional practices (Reform Integration).

In conclusion, the adoption of IPSAS in Rwanda has brought significant improvements in the transparency and accountability of public sector financial reporting. However, challenges such as capacity constraints, resource limitations, and complexities in asset valuation need to be addressed to fully realize the benefits of IPSAS. Continuous efforts in training, resource allocation, and political support are essential for the successful and sustained implementation of IPSAS in Rwanda.

#### 2.1.4. Lease classification

Public sector bodies commonly enter into lease agreements with lessors that convey a right to use an asset for an agreed period of time in return for a payment (or series of payments). Public sector bodies may also act as the lessor, conveying a right to use an asset to a third party for an agreed period of time in return for a receipt (or series of receipts).

A lease is a contract, or part of a contract, that conveys the right to use an asset (the underlying asset) for a period of time in exchange for consideration. The underlying asset is an asset that is the subject of a lease, for which the right to use that asset has been provided by a lessor to a lessee. Also, a right-of-use asset is an asset that represents a lessee's right to use an underlying asset for the lease term. Period of use is the total period of time that an asset is used to fulfill a contract with a customer (including any non-consecutive periods of time).

IPSAS 43 on Leases replaces the previous standard, IPSAS 13 on Leases for reporting periods beginning on or after January 1, 2025. Any government that is adopting accrual accounting is strongly recommended to move directly to IPSAS 43. IPSAS 43 has significantly different requirements for lessee accounting, and therefore entities that have adopted IPSAS 13 need to transition to IPSAS 43 very shortly.

IPSAS 43 is applied in accounting for all leases except:

Leases to explore for or use minerals, oil, natural gas, and similar non-regenerative

Resources; Leases of biological assets within the scope of IPSAS 27, Agriculture held by Lessees; Service concession arrangements within the scope of IPSAS 32, Service Concession Arrangements: Grantor; Licensing agreements for such items as motion picture films, video recordings, plays, manuscripts, patents, and copyrights; A lessee may, but is not required to, apply IPSAS 43 to leases of intangible assets other than licensing arrangements.

IPSAS 43 includes different accounting models for lessee accounting and lessor accounting. Lessees account for the right-of-use asset in the lease contract for all leases (except where IPSAS 43 permits exceptions for short-term and low value leases on cost-benefit grounds). Lessees account for leases using a risk and reward model that distinguishes between operating leases and finance leases. This model is similar to that previously used in IPSAS 13

Governments that are adopting IPSAS should note that this use of different models for lessee and lessor accounting have implications for the consolidated financial statements. Where one entity in an economic entity leases an asset to another entity in the same economic entity, there should be no transactions or change in the reporting of the asset in the consolidated financial statements. Consolidation adjustments therefore be required, as the two model require entities to report on different assets (the right of use asset for the lessee and the underlying asset for the lessor). This means that amounts cannot simply be eliminated, and additional record-keeping may be required.

### **2.1.5 Accounting Standards**

Public sector accounting standards are designed to improve the quality, consistency, and transparency of financial reporting by public sector entities. These standards are primarily issued by the International Public Sector Accounting Standards Board (IPSASB) and are known as International Public Sector Accounting Standards (IPSAS). The standards may not exhaustively include Presentation of Financial Statements (IPSAS 1) which its objective is to prescribe the basis for the presentation of general-purpose financial statements to ensure comparability.

It also defines the components of financial statements, including balance sheets, income statements, cash flow statements, and notes.

IPSAS 2: Cash Flow Statements, with the objective of the provision of information about the historical changes in cash and cash equivalents, requiring entities to classify cash flows from operating, investing, and financing activities. Accounting Policies, Changes in Accounting Estimates, and Errors is another standard which its aim is to provide guidance on the selection

and application of accounting policies, accounting for changes in estimates, and correction of errors; and emphasizes the use of consistent accounting policies and requires retrospective application of changes. IPSAS 6-8 deals with Group Accounting, which aims to cover the accounting for interests in other entities, including consolidation, associates, and joint ventures.

It defines how to prepare consolidated financial statements and account for investments in associates and joint ventures. IPSAS 9: Revenue from Exchange Transactions. This establishes the recognition criteria for revenue from exchange transactions in the Rwanda. It highlights how revenue should be measured at the fair value of the consideration received or receivable. While, IPSAS 12 deals with Inventories with sole aim of providing guidance on the accounting treatment for inventories as it maintains that inventories should be measured at the lower of cost and net realizable value.

Similarly, IPSAS 17 takes on Property, Plant, and Equipment prescribes the accounting treatment for property, plant, and equipment (PPE). Its depreciation and leases is also covered.

It stated that PPE should be initially measured at cost, and subsequently either at cost less accumulated depreciation or revalued amount. Just as IPSAS 23, sheds light on Revenue from Non-Exchange Transactions (Taxes and Transfers) in order to provide guidance on revenue recognition from non-exchange transactions, such as taxes and grants. It stresses that revenue should be recognized when the entity has control of the resources and the inflow of future economic benefits is probable. IPSAS 24 shows presentation of budget information in financial statements wherein it requires the comparison of budget and actual amounts in financial statements. This is to enhance accountability by providing information on budget compliance.

First-time Adoption of Accrual Basis IPSASs (IPSAS 33) provides guidance for entities transitioning from cash basis to accrual basis IPSAS. It outlines the process and requirements for first-time adopters of accrual-based IPSAS. The standard on Financial Instruments (IPSAS 41) provides guidance on the recognition, measurement, and disclosure of financial instruments. It aligns public sector accounting for financial instruments with IFRS 9.

IPSAS 42 provides rules on Social Benefits and prescribes the accounting treatment for social benefits. It maintains that social benefits should be recognized when a present obligation exists, and the criteria for recognition are met. These standards aim to enhance the quality and consistency of financial information reported by public sector entities, thereby improving decision-making, accountability and quality of financial reporting (CFA Institute2023).

The scope and definition of accounting change throughout time. In general, it is argued that accounting is concerned with the provision of information about the position and performance of an enterprise that is useful to a wide range of potential users in making decisions.(Nelson, 2011). According to American Institute of certified Public Accountants (AICPA) (1941), Accounting is the art of recording, classifying, and summarizing in a significant manner and in terms of money, transaction and events which are in part at least, of a financial character, and interpreting the result thereof. Historically, this information has been financial, but accounting is increasingly being used to address the ‘triple-bottom-line’ of social and environmental, as well as economic, concerns. In this unit we focus on financial uses of accounting but you can study social and environmental reporting later in unit, **Auditing**. Accounting can be described as a way to communicate the financial health of a business or an organization to any and all interested parties. It is a way of assessing the assets, liabilities and cash flow, or the future of an entity for all current and future investors. It is the lifeblood of a business and all types of business have basic information that is recorded to get that job done (<http://www.accounting.degree.org/what-is-accounting>).

Accounting originally served a stewardship function, as a result of the separation of ownership and control of resources. First wealthy landowners, and later company shareholders, hired managers or ‘stewards’ to run their properties and businesses. The landowners and shareholders owned the resources, but the stewards and managers controlled them. As the business owners could not always be on hand to watch their stewards or managers perform their duties, they required the stewards to make regular reports on their activities, using accounting to prepare the figures. This is what we call **financial reporting**. The separation of ownership and control has grown wider and wider throughout the last century, as companies increased in number, and became larger and more complicated. (Maria & Thomas, 1999).

### **2.1.6 Principles**

Principle is a fundamental truth or proposition that serves as the foundation for a system of belief or behavior or for a chain of reasoning. Fundamental norms, rules, or values that represent what is desirable and positive for a person group, organization, or community, and help in determining the rightfulness or wrongfulness of their actions. Principles are more basic than policy and objectives, and are meant to govern both. The objectivity principle states that accounting

measurements and accounting reports should use objective, factual, and verifiable data. In other words, accountants, accounting systems, and accounting reports should rely on subjectivity as little as possible. An accountant always wants to use objective data (even if it's bad) rather than subjective data (even if the subjective data is arguably better). (Nelson, 2011).

### **2.1.7 Principles of accounting**

Principles of Accounting often be the title of the introductory course in accounting. Principles of accounting can also refer to the basic or fundamental accounting standards: cost principles, matching principles, full disclosure principles, materiality principles, going concern principles, economic entity principles, and so on. In this context, principles of accounting refer to the broad underlying concepts which guide accountants when preparing financial statements. Principles of accounting can also mean generally accepted accounting standards (GAAP). When used in this context, principles of accounting be included both the underlying basic accounting standards and the official accounting pronouncements issued by the Financial Accounting Standards Board (FASB) and its predecessor organizations. The basic or fundamental principles in accounting are the cost principle, full disclosure principle, matching principle, revenue recognition principle, economic entity assumption, monetary unit assumption, time period assumption, going concern assumption, materiality, and conservatism. The last two are sometimes referred to as constraints. Rather than distinguishing between a principle or an assumption, I prefer to simply say that these ten items are the basic principles or the underlying guidelines of accounting. (My reason is that accounting standards also include the statements of financial accounting standards and the interpretations issued by the Financial Accounting Standards Board and its predecessors, as well as industry practices.) There are also "qualities" of accounting information such as reliability, relevance, consistency, comparability, and cost/benefit. These are discussed in the Statement of Financial Accounting Concepts No. 2, which can be found on the Financial Accounting Standards Board's website ([www.FASB.org/st](http://www.FASB.org/st), available on September 15, 2017).

**Cost principle:** Companies must account for and report the acquisition costs of assets and liabilities rather than their fair market value. This principle provides information that is reliable (removing opportunity to provide subjective and potentially biased market values), but not very

relevant. Thus there is a trend toward the use of fair values. Most debts and securities are now reported at market values.

**Matching principle:** Expenses have to be matched with revenues as long as it is reasonable to do so. Expenses are recognized not when the work is performed, or when a product is produced, but when the work or the product actually makes its contribution to revenue. Only if no connection with revenue can be established, cost may be charged as expenses to the current period (e.g. office salaries and other administrative expenses). This principle allows greater evaluation of actual profitability and performance (shows how much spent to earn revenue). Depreciation and Cost of Goods Sold are good examples of application of this principle.

**Full disclosure principle:** The amount and kinds of information disclosed should be decided based on trade-off analysis as a larger amount of information costs more to prepare and use. Information disclosed should be enough to make a judgment while keeping costs reasonable.

**The objectivity principle** states that accounting measurements and accounting reports should use objective, factual, and verifiable data. In other words, accountants, accounting systems, and accounting reports should rely on subjectivity as little as possible. An accountant always wants to use objective data (even if it's bad) rather than subjective data (even if the subjective data is arguably better). (Nelson, 2011)

**Objectivity principle:** the company financial statements provided by the accountants should be based on objective evidence.

**Materiality principle:** the significance of an item should be considered when it is reported. An item is considered significant when it would affect the decision of a reasonable individual.

**Consistency principle:** It means that the company uses the same accounting standards and methods from period to period.

**Conservatism principle:** when choosing between two solutions, the one which has the less favorable outcome is the solution which should be chosen (see convention of conservatism)

**Cost Constraint:** The benefits of reporting financial information should justify and be greater than the costs imposed on supplying it. Accounting as an information system. Functions of accounting. Users of accounting information and their requirements: investors and investment analysts, creditors and lenders, managers, customers, employees, government, competitors and public. Types of accounting. Major differences between accounting and financial accounting,



financial accounting versus management accounting.. Accounting entities. Major types of organizations: the sole proprietorship, the (Ireland, 2005).

### **2.1.8 Quality of Financial Reporting / transparency and disclosure quality**

“Financial reporting should provide information that is useful to present and potential investors and creditors and other users in making rational investment, credit and similar decisions. The information should be comprehensible to those who have a reasonable understanding of business and economic activities and are going to study the information with reasonable diligence.” (Norton, 2006)

The quality of financial reports can be measured using variety of variables. These surrogates help analysts, investors, and other stakeholders assess the reliability, transparency, and usefulness of financial information. They may include but not limited to earnings quality which suggests the degree to which reported income reflects true earnings. The surrogates can be persistence and predictability of earnings, low levels of earnings management, accruals quality, and the smoothness of earnings. Accruals Quality that means the extent to which accruals map into cash flows; can be proxied with smaller deviations between accrual-based earnings and cash-based earnings, suggesting lower manipulation. Audit Quality is the degree to which an audit is likely to detect and report inaccuracies in financial statements. Its surrogates include Big Four audit firms, auditor tenure, audit fees, and audit adjustments. Timeliness which means the speed with which financial information is reported and can be represented by short reporting lags between the fiscal year-end and the issuance of financial statements.

Other surrogates include transparency and disclosure quality which suggests the comprehensiveness and clarity of information provided in financial reports. Detailed footnotes, voluntary disclosures, clear management discussion and analysis (MD&A), and compliance with reporting standards may indicate this proxy. Restatements and Corrections is another proxy which is indicative of the frequency and magnitude of corrections to previously issued financial statements. Fewer restatements indicate higher quality reporting. Internal Controls links the robustness of processes to ensure accurate financial reporting. Its Surrogates includes reports on internal control effectiveness, fewer material weaknesses, and fewer significant deficiencies.

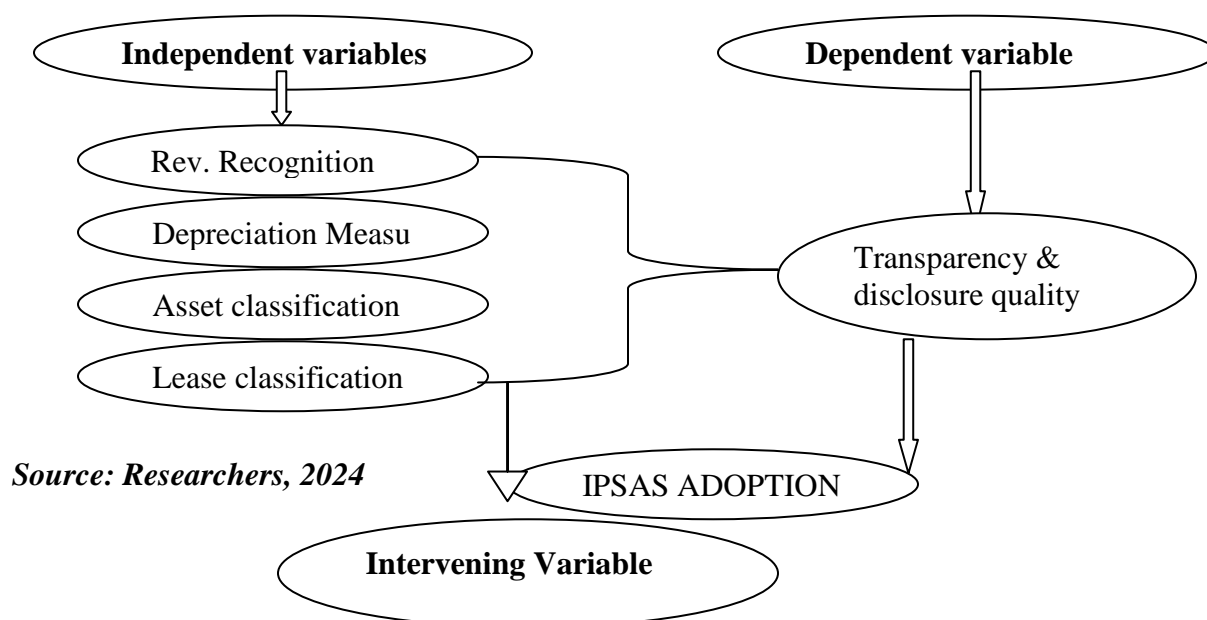
There could be Market-Based Measures which includes Stock price reactions to earnings announcements, bid-ask spreads, and analyst forecast accuracy. The indicators are derived from market data reflecting perceptions of financial report quality.

Also, is regulatory oversight and compliance which suggests the extent to which a company adheres to regulatory requirements. It can be inferred from fewer regulatory sanctions, compliance with Sarbanes-Oxley Act (SOX) requirements, and adherence to International Financial Reporting Standards (IFRS) or Generally Accepted Accounting Principles (GAAP).

The Stakeholder Feedback gotten from the opinions and reactions from investors, analysts, and other stakeholders, through analyst ratings, investor sentiment, and feedback from governance bodies. These proxies help in making a comprehensive assessment of the quality of financial reports, thereby aiding better decision-making.

In this study, the researcher carefully made use of transparency and disclosure quality as the surrogate for quality financial reporting quality. The financial reporting is considered quality if Detailed footnotes, voluntary disclosures, clear management discussion and analysis (MD&A), and compliance with reporting standards are contained therein. It is marked '1' if yes, otherwise '0'

**Figure 1: The conceptual framework of the study**



## **2.2 Related Literature Review**

### **Financial statements**

Financial statements, the output of a firm's accounting system, receive a great deal of attention, for two reasons. First, they assess how well management is doing now and second, they help predict the firm's prospects. However, accounting systems and financial statements do not arise in a vacuum. They are based on rules and standards that have been developed at the various national and, increasingly, international levels. In turn, these rules and standards are based, to a greater or lesser extent, on accounting theory. (Rutaremara, 2006)

### **Statement of responsibilities**

Article 66 of the Organic Law N° 12/2013/OL of 12/09/2013 on State Finances and Property requires budget agencies to submit annual reports which include all revenues collected or received and all expenditures made during the fiscal year, as well as a statement of all outstanding receipts and payments before the end of the fiscal year. Article 19 of the Organic Law N° 12/2013 further stipulates that the Chief Budget Manager is responsible for maintaining accounts and records of the budget agency, preparing reports on budget execution, managing the financial resources for the budget agency effectively, efficiently and transparently, ensuring sound internal control systems in the budget agency and safeguarding the public property held by the budget agency. The Chief Budget Manager accepts responsibility for the financial statements, which have been prepared using appropriate accounting standards applicable to Public Entities as defined by Article 99 of the Ministerial Order N°001/16/10/TC of 26/01/2016. These financial statements have been extracted from the accounting records of district and the information provided is accurate and complete in all material respects. The financial statements also form part of the consolidated financial statements of the Government of Rwanda.

In the opinion of the Chief Budget Manager, the financial statements give a true and fair view of the state of the financial affairs of district. The Chief Budget Manager further accepts responsibility for the maintenance of accounting records that may be relied upon in the preparation of financial statements, ensuring adequate systems of internal financial control and safeguarding the assets of the budget agency. (Rwanda G. o., Establishing the Institute certified Public accountants of Rwanda, 2008).

## **Accounting policies**

### **a) Basis of preparation**

The Financial Statements have been prepared in accordance with the following policies, which have been applied consistently in all material aspects, unless otherwise indicated. However, where appropriate and meaningful, additional information has been disclosed to enhance the usefulness of the Financial Statements and to comply with the requirements of Article 66 of the Organic Law on State Finances and Property: Law No. 12/2013 of 12 September 2013 and the Ministerial Order N°001/16/10/TC of 26/01/2016 relating to Accounting Standards applicable to Public Entity. The Financial Statements have been prepared based on generally Accepted accounting standards, except where stated otherwise. In the context of Ministerial Order N°001/16/10/TC of 26/01/2016 relating to Financial Regulations financial transactions are recognized in the books of account as follows:

1. Generally, transactions are recognized only at the time the associated cash flows take place;
2. The expenditure on acquisition of fixed assets is not capitalized. Thus fixed assets are written-off on acquisition and the wear and tear (depreciation) of those assets is not recorded in the books of account; and
3. Prepaid expenditure/advances is written-off during the period of disbursement.

The recognized “modification” is as follows:

1. Invoices for goods and services which are outstanding on the date of the closure of the fiscal year are recognized as liabilities for that specific fiscal year;
2. Loans and advances are recognized as assets/liabilities at the time of disbursement and related interest is recognized only when disbursed. Interest payable on public debt is accrued; and
3. Book balances denominated in foreign currencies are converted into the Rwanda Francs at rates of exchange ruling on that date issued by the National bank of Rwanda. The associated exchange losses are recorded as recurrent expenditure while the exchange gains are recorded as recurrent revenue (Rwanda R. o., 2013).

**b) Reporting entity**

The financial statements for district are Financial statements provide information on a municipality's financial position in terms of its assets and liabilities, its net financial assets (or net debt), its accumulated surplus (or deficit), and its tangible capital assets and other non-financial assets. For Consolidated Statement of Financial Position, there are The Consolidated Statement of Financial Position reports on a district's assets, liabilities and accumulated surplus. A review of this statement should be in the context of a long-term view of the municipality's financial health, and not focus solely on how much money is currently in the bank. A reader should consider whether the district has the necessary assets to provide future services, and whether there are sufficient future revenues to cover existing liabilities. A Net Financial Assets position means that the district has paid for most of assets from available funds. A Net Debt position does not necessarily means that a district is in difficulty as long as a robust debt management plan is in place. Financial assets are comprised of cash or items that be eventually be turned into cash. The District has a cash management program that actively seeks to minimize cash in the bank and invest to earn a better rate of return. Accounts receivable, land for resale and investments are examples of items that be eventually be turned into cash. Accounts payable and accrued liabilities and amounts due to other governments are generally payable within one year. Restricted and deferred revenues have conditions that must be met before they can be reported as revenue and are typically associated with a specific expense yet to be incurred. The District uses long-term debt as appropriate to acquire tangible capital assets. Long-term debt is recorded separately from other debts due to its materiality and unique statutory requirements. The amount recorded for tangible capital assets is the net historical book value, which is the total cost of all assets acquired over time (net of disposal and retirement) less the accumulated depreciation which represents their use. The replacement cost of these assets far exceeds the historical amount. The accumulated surplus is the primary indicator of the financial resources the District has available to provide future services. It consists of both cash and non-cash components and is comprised of reserves and equity (i.e. ownership): Held for operating purposes (working capital) and to mitigate potential risks such as property assessment and tax appeal losses, insurance, or emergency services. Held for specific purposes to support the replacement of existing or new assets. Certain reserves are statutory in nature and their use is restricted to specific purposes. Equity in tangible capital assets represents the value of tangible

capital remaining life owned by the District. The financial statements are reported in Rwanda Francs, being the currency of legal tender in Rwanda (planning, 2010).

### c) Revenue

- **Tax revenue:** These are tax revenue mainly collected by Rwanda Revenue Authority which is transferred to central treasury for a given period. Tax revenues also include decentralised taxes for local government entities.
- **Fees, fines, penalties and licenses :** Fees, fines, penalties and licences form a large part of the Non Tax revenue for the Government. These revenues should be recognized in the period in which the payment for the service is received and not necessarily when the service is rendered.
- **Transfers from Treasury:** Transfers from Treasury include budgetary allocations from Central Treasury and are disbursed directly to the bank account of the institution periodically (Direct Cash transfers) or indirectly to another Government reporting entity's bank accounts (Indirect Cash Transfers). Transfers from Treasury also include these payments directly made to beneficiaries by the Central Treasury on behalf of the institutions. Direct payments are recorded when the transfer is made to the supplier.
- **Transfers from other Government reporting agency:** These are funds received from another reporting agency (Ministry, Agency, Development Project or a subsidiary entity with status of submitting financial report for consolidation). These funds should be in form of budget support.
- **Grants from Development Partners:** These are funds received from partners including domestic grants and external grants. These funds are recognised as revenue when the institution receives the cash from the donors.
- **Capital receipts:** Capital receipts combine the sale of government tangible assets, sale of government equity investments and other domestic resources which include drawdown from Government Accounts.
- **Other income:** Other income includes voluntary transfers other than grants in form of foods, medical, supplies relief contributions and gifts of capital items. It also include miscellaneous income such as refunds, deductions, scholarship recovery, gain of currency exchange and transactions, proceeds from sale of small items and equipment and funds received from repayment of car loans as well as unidentified revenues.

- **Proceeds from borrowings:** Borrowings includes external and domestic loans received from development partners (Barry Elio H, 2000).

**d) Expenditure**

The main categories of expenditure includes compensation of employees, Use of Goods and Services, Capital expenditures, Transfers and subsidies, Loan and interest repayments, social benefits, Transfers to reporting entities and other expenses. A part from points of Modification which are mentioned clearly in the Ministerial Instructions, expenditure is recognized when payment is made (Brink P.J. & Wood, 2001)

**e) Bank and Cash**

Cash comprises cash on hand, demand deposits and cash equivalents. Demand deposits and cash equivalents comprise balances with banks and investments in short-term money market instruments (IMF W. b., 2008)

**f) Receivables and Advances**

Receivables mainly relate to loans and advances which are recognized at the time of disbursement. Receivables also include amounts due to the budget agency as at the end of the reporting period. (IMF W. b., 2008)

**g) Account payables**

These mainly relate to invoices for goods and services which were outstanding on the date of the closure of the fiscal year. These are recognized as liabilities for that specific fiscal year.

This also relate to loans and advances to the institution which are recognized as liabilities at the time of disbursement. (IMF W. b., 2008)

**h) Foreign currencies**

Transactions denominated in foreign currencies are translated to the Rwandan Franc at the rate of exchange issued by the National bank of Rwanda (BNR) applicable for the dates of the transaction. At the balance sheet date, book balances denominated in foreign currencies are converted into Rwandan Francs at the exchange ruling on that date as issued by BNR. The associated exchange losses/gains are recorded as expenditure/ income in the books (Rwanda G. o., Decree law , 2012).

**i) Accumulated Surplus or Deficit from previous years**

These include cash book reconciled bank balances, petty cash balances, and accounts receivables as well as accounts payable balances existing at the beginning of the year (Rwanda G. o., Decree law , 2012).

**j) Prior year Adjustments**

Prior Year adjustments consist of different adjustments made to consolidated report of prior year Adjustments explained above have been made in line with audit recommendations and other proposed adjustments and these have been approved by the CBM and approved journal vouchers supporting every adjusting transaction have been properly documented (Rwanda G. o., Decree law , 2012)

**4. Changes in Accounts Receivables and Accounts Payables**

These comprise of changes in account receivables and accounts payables from previous year to this year. Once the change in accounts receivable is positive, it represents the cash outflow while the negative change in accounts receivables implies cash inflows. As far as accounts payable are concerned, the positive change implies more cash inflows whereas the negative trend of accounts payable implies the cash flowing outside the entity. Below is the movement within accounts receivable and accounts payable (planning, 2010).

**Statement of investments:** The District's Investment Policy is designed to ensure the prudent management of public funds, the availability of operating and capital funds when needed, and an investment return competitive with comparable funds and financial market indices. This Investment Policy does not supersede applicable District laws and code. The accounting for the District's investment portfolio be consistent with guidelines for the Government Accounting Standards Board, as interpreted by the District's Office of Financial Operations and Systems. This Investment Policy governs the overall administration and investment management of those monies held in the District's investment portfolio. It be apply to such monies from the time of receipt until the time they leave the District's accounts. This Investment policy applies to all cash and financial investments of the various funds of the District of Columbia as identified in the District's Comprehensive Annual Financial Report, with the exception of those financial assets explicitly excluded from coverage for legal or operational purposes. These monies



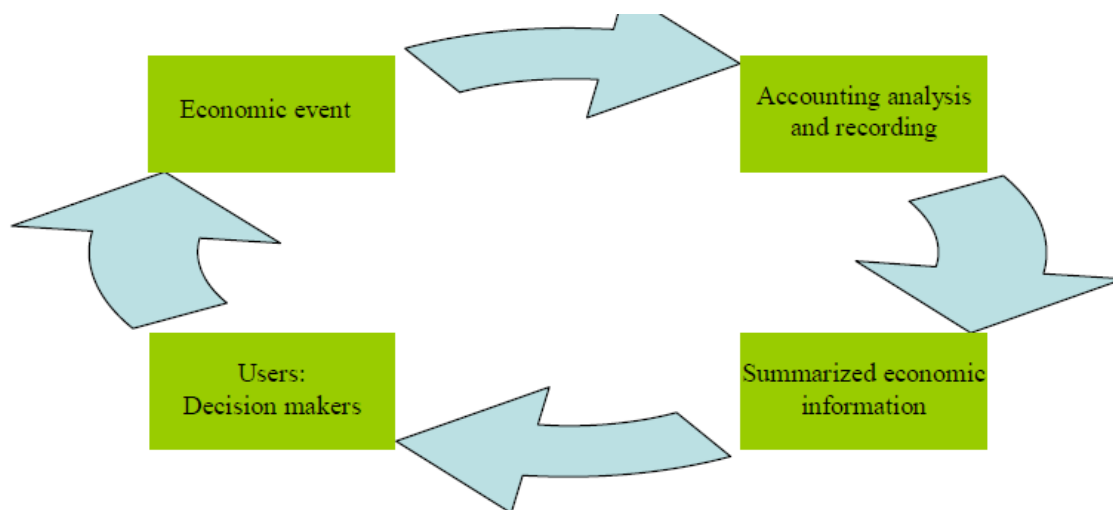
include, but are not limited to, operating funds, debt service funds, capital project funds, and grant funds. (Losana 2005).

## 5. Fundamentals of financial reporting

It is relevant to review the basics of accounting and financial accounting to delimitate the general scope of financial reporting. This help the researcher for presentation, in the next section, of the background of the financial reporting in Rwanda (Rwanda G. o., Decree law , 2012)

## 6. The importance of accounting

According to David Alexander and Ann Britton and Ann Jorissen (2009), “*the accounting is about the provision of figures to people about their resources*”. They found simple terms to describe the main four things that accounting tells to people : a) what the business has got, b) what it used to have, c) the change in what the business has got and d) what it may get in the future. In fact, accounting helps to maintain the following fundamental relationships in the decision making process:



**Figure 2: The importance of accounting**

Source: Adapted by researcher from the Frank wood (2008)’s definition

As it has been defined by many writers, the cycle above illustrates how accounting is a process of identifying, analyzing, recording, summarizing and reporting the economic information to decision makers in the form of financial statements.

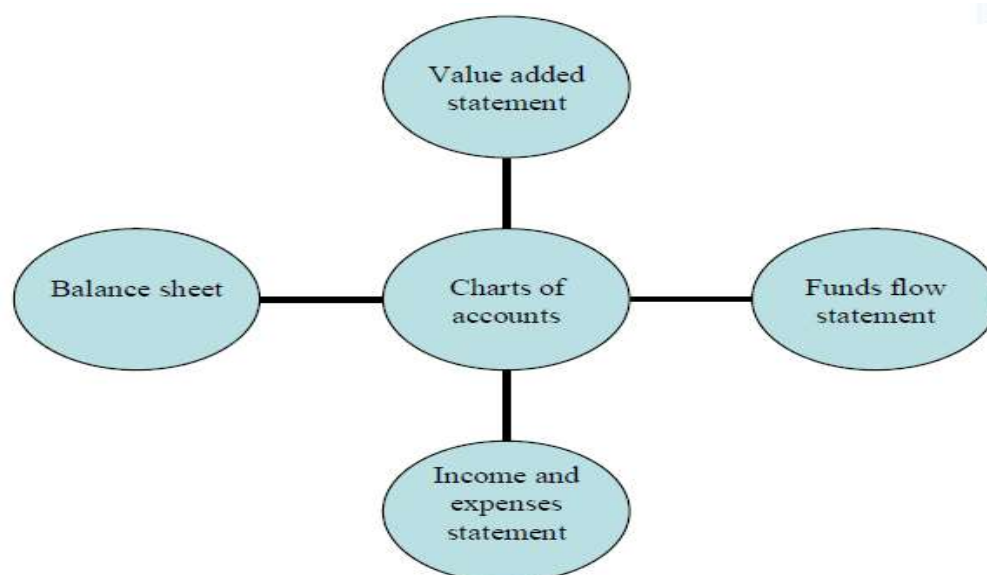
## 1. Users of financial reports in Rwanda

The national accounting plan of 1978 had been developed in context of dominance of banks, control of tax system and no exchange market with more state control for value-added requirements. This had consequences that firms in Rwanda are used to produce financial information for the sole use by government institutions (tax authorities) and banks and explain why the accounting evolved in the creditor-controlled stream.

To support the effort of attracting investment by creating the capital market, the accounting reforms should try to move from the state-controlled accounting to the market-controlled accounting. For some years, the country makes effort for liberalism and promotion of exchange market. The accounting has to adapt to the context of the market-controlled to support new investment policies (Nations, 2008).

## 2. Rwandan accounting institutional framework

The Rwandan accounting plan as the OCAM plan has three objectives: meaning and definition of accounts to satisfy users, accounting standardization for general analysis and adoption of accounting methods for data processing. The Rwandan accounting plan is less financially oriented and more statically oriented. It covers the large area including the accounting standards, list of accounts, charts of accounts (involving both financial accounts and managerial accounts) and financial sheets. (Nations, 2008).



**Figure 3: Rwandan national accounting plan elements relationship**

**Source:** Hakizimana, (2011)

### 2.3 Theoretical Review

This study is anchored on institutional theory. The institutional theory was propounded by DiMaggio and Powell (1983), considers organisations as operating within a social framework of norms, values and assumptions about what constitutes appropriate or acceptable economic behaviour (Oliver, 1997). DiMaggio and Powell (1983) identified three mechanisms through which institutional isomorphic change takes place viz: coercive isomorphism which stems from political influence and legitimacy problems; mimetic isomorphism which is standard response to uncertainty and normative isomorphism which is associated with professionalization. In the context of transition to IPSAS Accrual Accounting in the public sector, a form of coercive isomorphism is the pressure international lending agencies (IMF, the World Bank, and ADB) exert on the use of accrual accounting on developing countries as a required prerequisite to follow in order to access a loan (Adebisi et al, 2019). Similarly, the concept of mimetic isomorphism can be perceived in the case of developing countries following accounting practice used in developed countries where its application has been successful. Thus by following the accounting practice of developed countries, developing countries hoped that they can enhance the legitimacy and relevance of their accounting practices.

The basic assumptions about institutional theory include the adoption of structures and management practices that are considered legitimate by other organisations in their fields, regardless of their actual usefulness; organisations responding to pressures from their institutional environments and adopting structures/or procedures that are socially acceptable and appropriate organisational choice; and organisations conforming to predominant norms, traditions and social influences in their internal and external environments which promote governments that gain support and legitimacy by conforming to social pressures (Meyer & Rowan, 1977; DiMaggio & Powell, 1983; Scott, 1987; Olola, 2019; Uzochukwu & Onuora, 2021). Adegun and Adebisi (2016) noted that all the three factors of coercive, mimetic and normative isomorphism intermingled to influence the adoption and implementation of accrual basis IPSAS in Nigeria. Using the foregoing theoretical framework, it can be argued that the implementation of accrual basis IPSAS in Nigeria's public sector can be likened to a form of normative isomorphism which makes her financial reporting system conform with the other professional accounting bodies and international best practices around the world.

From the perspective of the public sector, legitimacy might be pursued from other national governments, international organisations and groups of interest (Baker & Morina, 2006). Three

mechanisms through which institutional isomorphic change takes place have been identified as coercive isomorphism which stems from external factors like international organisations dictating the use of certain style of management to governments; mimetic isomorphism which is standard response to uncertainty and following the actions of perceived more successful organisations; and normative isomorphism which is associated with professionalization and is concerned with cultural innovations to adopt new styles that are considered superior to the one being used (DiMaggio and Powell, 1983; Olola, 2019; Uzochukwu & Onuora, 2021). The importance of the institutional theory in this study is that changes in organisational structures or style (such as accounting rule choice) do not occur because of the benefits associated with the new style but such changes do occur as a result of the three mechanisms posited above, that is coercive, mimetic, and normative isomorphism influence the adoption and implementation of accrual basis IPSAS in Nigeria. Using the foregoing theoretical framework, it can be argued that the implementation of accrual basis IPSAS in Nigeria's public sector can be likened to a form of normative isomorphism which makes her financial reporting system conform with the other professional accounting bodies and international best practices around the world. Changes in management practice or culture of an institution to new ones (e.g. from the traditional cash accounting to accrual based IPSAS) do not occur primarily because of the efficiency or usefulness of the new style adopted but as a result of some institutional pressure.

#### **2.4. Empirical review**

The following studies show how the factors influence the relationship between principle of accounting and financial reporting with different Authors. Accounting standards is shaped by the environment in which it operates. As a result, accounting systems vary from country to country. Egolum and Ndum (2021) evaluated effect of international public sector accounting standards (IPSAS) on financial reporting quality of Anambra State public sector. The population of the study consisted of all the staff of Anambra State ministry of finance, Awka, Nigeria. The element of the population comprised of all the 127 staff of the ministry. Data collected for the study were analyzed by the researcher using frequency counts, mean score and standard deviation. The three hypotheses were tested using Chi square statistical tool with aid of SPSS version 20.0 at 5% level of significance. The study revealed that the adoption of International public sector accounting standards leads to accountability; enhance transparency and reduce corruption among public officers in the state. Based on the result of the study, the researcher recommended that the Nigerian government should provide the necessary requirements for full implementation and

sustenance of IPSASs in the public sector if it is actually sincere and serious about tackling corruption in the country.

Beredugo (2021) examined effect of International Public Sector Accounting Standards (IPSAS) Implementation and Financial Reporting: Issues and Challenges in South-East Nigeria. The survey research design was used using structured questionnaire was used and the population of the study consists of accountants, auditors and cash officers in government ministries, departments and agencies in Abia, Anambra, Enugu, Ebonyi and Imo States. The population was estimated at 8901 for the five States. The sample size of 387 was drawn using the stratified sampling technique. The Analysis of Variance (ANOVA) was used for the hypothesis test. The results showed that the challenges that impinge the full implementation of IPSAS in Nigeria include: governments un ingness in terms of political- towards full IPSAS implementation; statutory adjustment, inadequate funding and institutional commitment among others. It was therefore recommended that there should be adequate funding for the IPSAS implementation projects as most of the Public Sector Entities attributed inability to implement IPSAS Accrual to paucity of funds. Government should also show more political as well as commitment and support for the accrual basis IPSAS implementation at the Local Government level. Obineme et al (2021) evaluated challenges facing adoption of International Public Sector Accounting Standards (IPSAS) in valuation reporting in Nigeria. Questionnaire, key informant interviews, and content analysis were adopted. Nine hundred and thirty-four (934) Estate Surveyors and Valuers both in private and public sectors, in addition to twenty six (26) accountants in different ministries all-in Nigeria were sampled. Data obtained were analyzed with the use of the following statistical tools: Relative Importance Indices (RII), Mean, Frequency and Percentage Distribution. Findings indicate that political Challenges ranked first in both respondent's views' with (RII = 4.69) and (RII =5.00) respectively. And others variables followed which affects adoption of IPSAS. The study recommends that, for transparency, accountability and to be in line with international best practices that all the variables analyzed in this study should be fully considered and get right.

Gebreyesus (2021) assessed challenges and benefits of adopting international public sector accounting standards in developing countries the case of Ethiopia. The methods used for the study were document analysis and interview with concerned officials of accounting and auditing

board of Ethiopia for triangulation. The results show that the adoption of IPSAS enhances level of accountability and transparency of managements by providing timely and clear annual financial reports. Unavailability of adequate professionals' staffs in the areas of asset valuation and public sector accounting, lack of budget for training of staffs, difficulties in recognition, measurement and valuation of assets, lack of compiled data, and lack of management commitment are challenges in the implementation of IPSAS in public sectors. The government higher officials should be committed to implement IPSAS to enhance the quality and comparability of financial reports, the government should give emphasis to implement IPSAS to attract foreign direct investment, AABE should assist public sectors by providing training and consultancy in the adoption process, the ministry of education should revised the curriculum of the accounting courses by incorporate PSAS.

Saleh et al (2021) assessed issues and challenges in implementing international public sector accounting standards (IPSAS). Methodology adopted for the study was review of past studies and published information on the issues and challenges faced by various developing countries in adopting IPSAS. The study findings showed that the challenges faced by countries in adopting IPSAS can be classified into three categories: (1) Resources which include a lack of competent accounting and finance staff, and a lack of IT facilities and IT support; (2) Accounting and reporting issues related to difficulties in the recognition and measurement of assets, liabilities, revenue and expenses; and (3) Top management commitment in ensuring successful change management programmes. The study concluded that, the experiences in IPSAS implementation across developing countries have been very similar and can be categorised into the above challenges.

Thank God et al (2021) investigated International Public Sector Accounting Standard (IPSAS) Adoption in Nigeria: The journey so far. The paper adopted literature review of past studies method. According their literature review, the need for the development of unified accounting standards all over the globe and the quest to know the extent of IPSAS adoption and implementation in Nigeria necessitated this study. Commercial organizations all over the world are adopting International Financial Reporting Standards (IFRS), and governments are implementing International Public Sector Accounting Standards (IPSAS). With the exception of Government Business Enterprises, public sector accounting is governed by international Public

Sector Accounting Standards. In response to demands for greater government financial accountability and transparency, IPSAS is currently at the center of a global movement in government accounting. The Federal Executive Council of Nigeria authorized its adoption in July 2010 and it became fully adopted in January 2016, but each of Nigeria's 36 independent states was required to decide its own implementation date. As a result, the Federation Account Allocation Committee (FAAC) formed a sub-committee in June 2011 to develop a roadmap for IPSAS adoption in the three tiers of government. Conclusively, it was noted that the implementation is aimed at strengthening the Country's accounting and financial reporting framework in consonance with global standards. However, the study discovered that all attempts to completely introduce IPSAS in the Nigerian public sector failed due to a number of clear obstacles, which were addressed in the study. The study therefore, recommended that full implementation of IPSAS adoption in Nigeria. This have an effect on operating procedures and reporting practices, thus strengthening good governance and ties between the government and the governed.

Chytis et al (2020) assessed impact of Accounting Reform and IPSAS Adoption in Greece. A survey research design was realized by addressing a questionnaire to officers and employees of the finance department of 325 municipalities in Greece and to the elected representatives who are responsible for their financial management and reporting. Descriptive and inferential statistics were used to analyse the research data. The results from 58 municipalities that participated in the research show that even though the officers and employees of the finance department of municipalities are not familiar with IPSAS, there is a wide acceptance of the need to implement them. It was also concluded that municipalities in Greece are not prepared for the accounting change and the adoption of IPSAS. Overall, Greece appears to be at a premature stage with delays observed in the implementation of existing enacted reforms. The study recommended that all public organization should employ IPSAS implementation process for all the parties engaged in public administration reform such as regulators, standard setters, institutional organizations as well as to countries that are in process or planning to adopt IPSAS.

Abata and Lamidi (2020) examined effect of adoption of international public sector accounting standards on general purpose financial statements in the public sector using a case study of local governments/local council development areas in Lagos state. The study employed expose-facto

research design and secondary data were used and collected from 20 Local Governments and 37 Local Council Development Areas in Lagos State using a cross sectional data from 2016 to 2018. The data for each year was analyzed including the post estimation test of the model. The data for each year was tested in line with the first, second and third objectives of the study. The results of the findings for year 2016 shows that inventory and accounts receivable have relationship. Statutory transfers (allocations), Inventory, non-current assets and accounts payable have positive relationship. Among all the IPSAS Accrual indicators adopted for the study only non-current assets has a significant effect on financial position management for the year 2016. The outcomes of the analysis on 2017 data series reveal that statutory transfers (allocations), non-current assets and accounts payable have positive relationship. The last test conducted on 2018 data indicated that the statutory transfers (allocations) and non-current assets have positive relationship. Also, noncurrent asset has a strong and significant effect on financial position management. The study recommended that the Local Governments/Local Council Development Areas should continual adopting the international public sector accounting standards (IPSAS ACCRUAL) since some of its factors have strong, positive and significant impact on General Purpose Financial Statements (GPFSS).

Zivanai (2020) evaluated financial reporting conceptual objective of IPSAS 'fair presentation' in Africa. The study methodology adopted is mixed research methodology, through questionnaires and interviews on PAFA accountants in public sector practice across Africa. The findings revealed that the IPSAS financial reporting conceptual objective of 'fair presentation' is attainable with consistent application of professional judgments, taking into accounting the requisite accounting principles. Fair presentation is technically compounded for the average professional to apply, and requiring a lot of additional guidance over a prolonged period of time for the preparer of the financial reports to comply with all IPSASs in the process of complying with the conceptual qualitative characteristics of relevance and reliability.

Ambarchian and Ambarchian (2020) accessed quality of IPSAS-based financial reports of intergovernmental organizations, which have fully adopted the accrual basis of accounting. The research database encompasses 20 financial reports estimated by 190 disclosure requirements aggregated in 31 indicators. The score assessment of financial reports has provided the data to build a multiple linear regression model that depicts the relation between the quality and the



qualitative characteristics of the IPSAS-based financial reports. The F-testing and T-testing have proven the statistical significance of independent variables and  $\beta$ -parameters, respectively. The findings showed that qualitative characteristics of predictive value, completeness, neutrality, absence of material errors, timeliness, and verifiability have substantiated their significance, while the qualitative characteristics of confirmatory value, understandability, and comparability were identified as insignificant and, therefore, excluded from the model. The study suggested that firms should meet up-to-date demand for estimating the financial reports' quality in terms of the recent transition to IPSAS-based principles of accounting and reporting by governments and supranational organizations worldwide.

AhmadImam et al (2020) studied on international public sector accounting standard and implementation challenges in Yobe State, Nigeria. Data were gathered through primary sources. Primary data were collected through the use of structured questionnaires. Respondents were targeted from relevant Ministries, Department and Agencies (MDAs) that are saddled with the responsibility of ensuring the implementation of the standard (IPSAS). Purposive and snowball sampling were used for selecting the sample size. Inferential and descriptive statistics were employed to analyze the data collected through the use of Kendall's tau and multiple regression. The finding of the study shows a significant relationship between untimely implementation of accrual IPSAS and cost of implementation. The study concluded that if all mechanisms necessary for the smooth transition of accrual basis IPSAS is taken care of, then the standards can be implemented on time. The study recommends that government of Yobe state should include in her annual estimate so that enough fund can be made available to cater for all the facilities necessary for accrual IPSAS implementation.

Edwin et al (2020) examined implementation of International Public Sector Accounting Standards (IPSAS) on public sector transparency and accountability in Nigeria since its adoption in 2014. A qualitative survey of the agencies in the 5 states of south east Nigeria was carried out and analysis done using analytical discourse technique. We found out that the extent of the implementation of IPSAS in Nigeria has not achieved transparency and accountability in the public sector, in Nigeria. We find that political , use of accrual bases of accounting and internet facilities are the underlying factors for a full implementation of IPSAS and that they were all lacking in our study area. The framework of analysis was principal -agent theory, which

explained that the agents, the public sector officials pursue their interest first before those of their principals-the citizens. The lack of political stems from the agents not wanting to be transparent and held accountable for their actions. Regulatory agencies should penalize the officials lacking the political . Nzewi and Faith (2020) determined effect of international public sector accounting standards (IPSAS) on Delta State ministry of finance with emphasis on accountability and, transparency among public officers in Delta State. Survey research design was adopted. A sample of one hundred and eighty five (185) was drawn from a population of three hundred and forty three (343) staff from Delta State Ministries, Departments and Agencies (MDAs). Data was obtained from questionnaire administered on the sample population. Data obtained was analyzed using five point likert's scale and the formulated hypotheses were tested using regression analysis with aid of SPSS Version 20.0. From the analysis of the data the adoption of International public sector accounting standards leads to accountability and transparency among public officers in the ministry. The study recommended that Nigerian government should provide the necessary requirements for full implementation and sustenance of IPSASs in the public sector if it is actually sincere and serious about tackling corruption in the country.

Bashir and Amir (2020) evaluated international public sector accounting standards and quality of financial reporting in the public sector of Pakistan: Moderating role of accounting information system. The research methodology was based on a questionnaire sent to state owned entities. Regression Analysis was employed to determine the relationship among the variables. The results indicate that comparability, financial statement disclosure and transparency are all positively and significantly associated with the quality of financial reporting, providing evidence of the impact of explanatory variables on the quality of reporting in Pakistan. The moderation results indicate that AIS positively and significantly moderates the relationship among transparency and quality of reporting and comparability and quality of reporting. Notwithstanding, AIS was found to have an insignificant moderating effect on the relationship of financial statement disclosure and quality of reporting. The finding of the study implies that government of Pakistan needs to adopt a more robust approach to improve quality of financial reporting.

Wilson et al (2020) evaluated sustainability reporting and performance of listed upstream petroleum companies in Nigeria. The study adopted descriptive research design. Secondary data are obtained from the annual sustainability reports of the listed oil and gas companies on the NSE as at 2018 using a content analysis approach. The study found evidence of inadequate reporting of sustainable economic performance by the major oil and gas firms, especially the financial implications and other risks and opportunities due to climate change. The results also show that the oil and gas companies are less perturbed by environmental conservatism due to weak environmental law enforcement. The findings also indicate that there is sustainability implementation laxity or apathy in Nigeria.

Ashibogwu (2020) investigated on audit risk and financial statements quality of manufacturing companies in Nigeria. The study utilized the descriptive survey design. The sample size for the study consisted of fifty (50) members of staff of the selected manufacturing firms in Rivers State. The primary data for the study were collected from respondents using personal interviews and questionnaire instruments which were found to be reliable with Cronbach Alpha of above 0.7 coefficients. Data were analyzed using descriptive and Pearson correlation coefficient statistical tools with the aid of Statistical Package for Social Sciences (SPSS) version 21.0. The findings at 0.05 level of significance reveals that control risk has a moderate negative relationship with timeliness ( $r = 0.599^{**}$ ) and strong negative relationship with relevance ( $r = -0.889^{**}$ ) in the surveyed manufacturing firms in Rivers State. Based on the findings, the researchers concluded that audit risk negatively impacts on the financial statement quality in the selected manufacturing firms in Rivers State.

Amahalu and Chinyere (2020) examined effect of financial statement quality on investment decisions of quoted deposit money banks in Nigeria. The study employed ex-post facto research design while secondary data were collected from a sample of seven (7) DMBs. Inferential statistics using Pearson correlation and Ordinary Least Square (OLS) regression analysis were applied in order to achieve the study objectives. Results of the study found that Financial Statement Verifiability, Financial Statement Timeliness, and Financial Statement Understandability have a significant positive effect on Return on Equity of quoted Deposit Money Banks in Nigeria at a 5% level of significance respectively.

Olola (2019) examined effect of International Public Sector Accounting Standards on financial accountability in the Nigerian public sector. Specifically, the study investigated the effect of International public sector accounting standards on the efficient management of public fund in the Nigerian public sectors and assessed the extent to which international public sector accounting standards enhance effective budget implementation in the Nigeria public sector. The population of the study comprises of all the staff in internal audit department, accounting department and finance department of the 18 Local Governments in Ondo State. Questionnaire was used to gather information from the selected respondents in the departments. The questionnaire was ranked using five-point Likert scale. The study employed Multiple Regression Analysis and Pearson's Correlation Matrix to identify the effect of International Public Sector Accounting Standards on financial accountability in the Nigerian public sector. The study revealed that International Public Sector Accounting Standards has positive and significant effect on the efficient management of public funds in the Nigerian Public sector.

Adebisi et al (2019) assessed perception of stakeholders on the implementation of accrual basis IPSAS financial reporting in southwestern Nigeria. The survey method was adopted using questionnaire, interviews and focus group discussions. 150 respondents were purposively selected for the study. Both descriptive and inferential statistics were employed to analyze using Statistical Product for Scientific Solution (SPSS), version 22. The study found out that the level of implementation achieved was still below 40% and the following challenges were yet to be addressed: low level of awareness, inadequate training, high cost of training and re-training, poor record keeping, apathy on the part of implementers, low motivation of staff, inadequate supervision and high risk of irrelevance of current practitioners due to the fact that implementation of IPSAS is IT-based. The study concluded that implementation of IPSAS in South-western Nigeria was still below expectation in government Ministries, Departments, Agencies and Public Educational Institutions as far as preparation and presentation of was concerned. Substantial conscious efforts were therefore needed to spur the stakeholders into action to ensure that the objectives of Accrual basis IPSAS Financial Reporting achieved in south-western Nigeria.

Charles and Gabriel (2019) examined factors influencing implementation of accrual-based International Public Sector Accounting Standards (IPSAS) in the Tanzanian Local Government Authorities (LGAs). The study adopted a survey design. Based on extant literature, a structured questionnaire was developed. The sample size of the study consists of 150 responses and applied factor analysis to determine the factors followed by multiple regression analysis. According to factor analysis performed. The findings showed that staff experience, in-house training necessity, understanding and skills, involvement of professional accountants and publication of financial statements with standardized format; significantly influence implementation of accrual based IPSAS in the LGAs. Other factors like sanctions by regulatory authorities, pressure from development partners and adequate implementation policies were also reported to have significant impact. Since this research involved 7 LGAs out of 185 found in Tanzania Mainland, we recommend further studies to take into account the rest of the LGAs in Tanzania and abroad.

#### **2.4. Critical Review**

The International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) are conducting a joint conceptual framework project, which is a major undertaking aimed at developing an improved common conceptual framework for financial reporting. In July 2006, the IASB and the FASB published a discussion paper entitled Preliminary Views on an Improved Conceptual Framework for Financial Reporting: Objective of Financial Reporting and Qualitative Characteristics of Decision-Useful Financial Reporting Information. Accounting standards is shaped by the environment in which it operates. As a result, accounting systems vary from country to country. The most obvious differences concern financial reporting, as this is the area where there are most likely to be rules and regulations in place. One of the most important issues affecting the development of accounting today is the need for internationally comparable financial information and the drive for harmonization of accounting practices.

In general, many books written basing on the GAAP and IFRSB by the different case which are not based on the countries, and regulation of the international of Financial reporting standard board setting the law of financial report and regulation of accounting without consider the problems of under developed countries. There is any why the poorest countries meet many challenge in implementation of accounting for preparation of financial reporting.

According to the different studies and different authors in the empirical showed their statement approach, they didn't show particularly in poorest countries, and also didn't demonstrated in particularly in Rwanda different in other countries. So, I be show how principal of accounting used for preparation of financial reporting in Rwanda especially in Kamonyi district.

## **CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY**

### **3.1. Introduction**

In this chapter, the process and methods used to conduct the study are explained. The following covered: The research Design & methodology explain and justify why a survey; Target Population explains the total population from an authoritative source and who are the respondents in the study area; Sample Design shows the sample size and how it be determined considering the target population, also include the sampling procedure; Data Collection; Limitations of the study; Ethical consideration.

### **3.2 Research design**

Brink and Wood (1998) state that the purpose of a research design is to provide a plan for answering the research question and “is a blueprint for action”. It is the overall plan that spells out the strategies that the researcher uses to develop accurate, objective and interpretative information. According to Jill and Hussey, (1997), the analytical research design is continuation of the descriptive research. The researcher goes beyond merely describing the characteristics to analyzing and explaining why and how it is happening. The study based on a cross sectional correlation and survey designs and employed both quantitative and qualitative approaches. The study took a quantitative approach because it composed of variables measured with numbers and analyzed with statistical procedures in order to determine whether public accounting standards affect the financial report quality in management of public institution, especially in Kamonyi district.

### **3.2 Target population**

The target population is the entire aggregation of respondents that meet the designated set of criteria (Burns & Grove 1997). The target population in this study consist of all adult between 18 and 65 years with District management at Kamonyi district. For the Finance workers, the target population is all accountants, account technicians and book keepers working in the Kamonyi district territory and the related financial management offices in Kamonyi District, 88 for district level and 18 accountants at sectors level total 106.

### **3.3 Sampling design**

According to (Grinnell, 1990) defines sample as a small group of respondents drawn from a population about which a researcher is interested in getting the information so as to arrive at a

conclusion. He further asserts that sample as a collection of some parts of the population to be a true representative of the population

### **Sampling Techniques**

The sampling technique is a process by which a researcher chooses the sample from the whole studied population (Grinnel and iam, 1990). The study of effectiveness of principles of Accounting in Kamonyi District use universal sampling technique.

#### **Universal sampling**

Usually it is a not too difficult problem to select efficient sample from a population, which includes units with different size. Universal sampling method refers to the rules and procedures by which all elements of the population are included in the sample (Punch, 2006). In this study, researcher used universal sampling where researcher took 106 target populations as a sample size in order to respond the questionnaires giving researcher the quantitative data. Thus, universal sampling be done by giving all respondents equal chance and opportunities to participate in our research without anyone left behind the study.

#### **3.4 Data collection**

This study collected data from the field using hypothetical-deductive model of science which consists of combining both qualitative and quantitative research approach. The research techniques used include documentation, questionnaire, documentation and interview technique; while the research instruments are questionnaire and interview.

The **questionnaire** is a written set of questions which are answered by respondents in order to get the needed information. In this study, both open ended and closed ended questions have been used. The open ended questions are structured in sense that we left the blank spaces to be filled in by the respondents, to express their views with no limitation. The use of questionnaire allows the researcher to collect large amount of data in a relatively short time.

The **interview technique** involves face to face oral questions between the interviewer and the respondents. This technique is used with respondents especially for those who don't have enough time to respond to the questionnaire and for question required discussion.



### **3.5 Data analysis**

The data was analyzed and results presented under each specific objectives in order to effectively answer the research questions (Brink and Wood 2001). Coding was used to ensure accuracy during data analysis.

### **3.6. Validity and reliability**

#### **3.6.1 Reliability**

According to Drost (2011), reliability refers to random error in measurement. Reliability indicates the accuracy or precision of the measuring instrument. The researcher used the test-retest reliability technique where a pilot test of ten questionnaires was distributed to 106 respondents so as to examine the appropriateness of responses from respondents before applying the questionnaire to the entire population. This enabled the researcher to address errors or irregularities that would appear during the research exercise.

#### **3.6.2 Validity**

Mugenda (2010) defines validity of results as a degree to which results obtained from the analysis actually represent the variables of study. Thus, validity refers to whether the findings accurately reflect the situation and are supported by evidence. Validity is established by correlating the scores with a similar instrument. The researcher used pre-test technique to confirm the validity of the instrument by developing a pilot set of questions and asking them to a number of people, to verify whether the questions are clearly worded and easily understood and whether the respondents know the answers or not. The results of pilot questionnaire may identify a number of deficiencies such as wording and some missing elements crucial to provide an answer to the specific aspect of the research including the appreciation of public sector accounting standards and quality of financial.

### **3.7. Limitations of the study**

The survey, however, has its own limitations. According to Burns and Grove (1997) and Cohen et al (2000:173), the following are some of the limitations:

Problems of generalizability might occur if the sample is poorly chosen, resulting in the survey not correctly representing the population. This did not apply to this study because findings were only applicable to Kamonyi district. Despite the limitations, in the researcher view, the strengths outweighed the weaknesses and the survey be the appropriate design to adopt.

The persons who responded to a survey were aware of studies and their responsibilities for biased data. Sometimes the information collected tends to be relatively superficial because survey questionnaires rarely probe deeply into complexities such as contradictions of human behavior and feelings. The design also required the cooperation to the respondents, which might not be forthcoming. At these point view, I giving the confidentiality to the respondent for secured information.

Surveys can be costly, time consuming and tedious because they are very demanding of personnel. I found financially support to my family.

Sometimes the data collected are too much, making data recording and analysis difficult in the absence of a computer. At this point, I have planned as possible managing time and recovering all information.

### **3.8. Ethical considerations**

According to Pera and Van Tonder (1996) define ethics as “a code of behavior considered correct”. It is crucial that all researchers are aware of research ethics. Ethics relate to two groups of people; those conducting research, which should be aware of their obligations and responsibilities, and the “researched upon”, which have basic rights that should be protected. The study therefore had to be conducted with fairness and justice by eliminating all potential risks. The respondents must be aware of their rights. Ethical issues observed in a study may include “informed consent, right to anonymity and confidentiality, right to privacy, justice, beneficence and respect for persons” (Brink & Wood 1998). Ethical consideration is concerned when planning to carry out social research. Before starting the research field, the researcher makes sure that all procedures or processes in doing research properly followed

Before commencement of the study permission be obtained from Kigali independent university and Financial Managers of Kamonyi district.

#### **Protection of Human Subjects**

The participants be fully informed of the implications of the study and their rights to withdraw from the study explaining in an information sheet be attached to the questionnaire. The information sheet also gave details of the purposes of the study and expect benefits. The completion and return of the questionnaire by participants be part of the consent for inclusion in the study. In order to protect respondent`s identifications, their names were not indicated on the

questionnaires. Therefore, the researcher expected to have all relevant information related to the research as the study areas and the target populations are convenient to the researcher.

### **Respect for persons as autonomous individual**

Respect for persons is a basic human right. Respondents as autonomous individuals have the right to choose to either participate or not, in the research. Collins English Dictionary (1991:286) defines choice as “the act or an instance of choosing or selecting; the opportunity or power of choosing”. The decision is to be made without coercion. Respondents were allowed to act independently by giving their informed consent to participate in the study. In this study it ensured that respondents gave informed consent to participate in the study. Prior to the respondents’ giving consent, the purpose of the study be fully explained to them in the language they were well conversant with. Risks and benefits were highlighted. The respondents were informed that participation voluntary and they were free to withdraw should they so wish. The respondents were assured that neither participation, withdrawal nor refusal to participate would affect their entitlement to financial services. Prior to signing the consent, there period of question time to ensure that the participants fully understood the explanations. At the end of the explanations, the respondents were asked to sign a written consent.

### **Confidentiality and anonymity**

Confidentiality is “a basic ethical principle while anonymity is one way in which confidentiality is maintained. To ensure anonymity, steps are taken to protect the identity of the individual by neither giving their name when presenting research results, nor including identifying details which may reveal their identity such as work place, personal characteristics and occupation” (Rees 1997:71). In this study, anonymity achieved by not putting names on the questionnaire. The researcher at the end should not be able to link any information to any participant. The interview conducted in a private office where no third person could hear the conversation.

### **Avoiding harm**

Avoiding harm is another basic human right to be considered when conducting research on human beings. According to Burns and Grove (1997:206), risks that may be encountered in research include physical, psychological, emotional, social and financial ones. In this study, psychological harm through periods of long waiting and maintaining confidentiality and anonymity the probable risk the patients could have encountered. The researcher minimized the

time of interviewing the participants. Maintaining privacy, confidentiality and anonymity during the interview also prevented psychological harm.

**Justice**

Justice relates to “the fair treatment of those in the study” (Burns & Grove 1997:705). In this study, the participants were treated fairly by giving them information prior to 16 participation and by giving them the option to withdraw from the study if they wanted to without any negative consequences regarding entitlement to health services. Selection of the sample following the guidelines of the inclusion criteria also ensured that all those who met the criteria had a fair chance to be chosen to participate in the study.

## **CHAPTER 4: DATA ANALYSIS AND INTERPRETATION**

### **4.0. Introduction**

This chapter deals with the analysis and interpretation of the data, discussion of the major findings of the study and their interpretations, percentages and frequencies were used as means of analyzing and interpreting the data.

This chapter thus examines the empirical evidence and establishes the ground up on the research questions were answered before drawing conclusion. The analysis was made on the responses of 100 respondents from population of Kamonyi District especially in the employees related of financial management. The responses were analyzed and interpreted to draw conclusion. The data were therefore presented in the form of descriptive, statistical tables and percentages. This chapter is composed of two sections: the first section highlights the profile of financial reporting and principles of accounting in Kamonyi District while the second section attempts to analyze data collected, interprets it and presents the various findings from the research in form of answering research questionnaire in order to relate it with the study objectives and hypothesis.

### **4.1 Kamonyi District profile**

Kamonyi District is one of the eight Districts that make up the Southern Province. It is composed of 12 Sectors (Imirenge) Gacurabwenge, Karama, Kayenzi, Kayumbu, Mugina, Musambira, Ngamba, Nyamiyaga, Nyarubaka, Rugarika, Rukoma and Runda as illustrated in the figure 2; 59 Cells (Utugari) and 317 Villages (Imidugudu) with a population of 377,257 inhabitants and 85,285 households (Ubudehe data 2017) on a total surface area of 655.5 km<sup>2</sup>. Thus, its average density is 575.5 inhabitants/Km<sup>2</sup>. The District of Kamonyi shares its borders with Ruhango District in the South, Muhanga District in the West, Bugesera and Nyarugenge Districts in the East, Gakenke and Rulindo Districts in the Climate

The District of Kamonyi enjoys a moderate climate. The frequency of rainfall is rather sufficient. Humidity varies between 1.200 and 1.400 mm and the average temperature is 20°C. Its relief is made of low lying plateau, except in the western part which is more mountainous. Below is a map of Kamonyi District.<sup>3</sup>

#### **4.2.1 The District Vision**

Kamonyi District shall be, a District developed as par the Central Government Vision 2020 and in the Economic Development and Poverty Reduction Strategy as a result of urban economy,

prosperous rural zone, sustainable and integrated synergy, modern and appropriate infrastructures, professional agriculture responsive to market forces, innovative entrepreneurship, qualified and motivated human resources, scientific research, cultural and touristic sites, known regionally and internationally, efficient and effective administration, access to basic and professional education, dynamic and enterprising youth, excellence in all sporting disciplines, medical care for all the population, supporting vulnerable groups. Specifically, by 2020 the town shall be properly developed, enlarged, and slums eradicated »

Kamonyi District Vision is based on vision 2020 pillars and its cross-cutting domains and Economic Development and Poverty Reduction Strategy « EDPRS » integrated into the District priorities from consultations with the local communities at all levels. Vision 2020 pillars

1. Good governance and a capable government
2. Human resources development
3. Development of the private sector
4. Infrastructures development
5. Agricultural and agro-business industries
6. Regional and international economic integration

#### **4.2.2 Kamonyi District Mission**

Kamonyi District is an autonomous entity having legal status, financial and administrative autonomy. Like other administrative entities, the District is a framework for the promotion of democracy and base for development. It supports solidarity of the population to develop itself and develop the District. The District accomplishes the mission conferred to it by law and regulations in what relates to policy, administration, economy, social wellbeing and culture.

The District notably has the following attributions:

1. Implement Government policies;
2. Give services and assist Sectors to provide quality services;
3. Establish coordinate and implement development programmes;
4. Promote the solidarity and cooperation with other Districts.
5. The District must support initiatives in which the population is involved. It must take into account the aspirations of the population from time of planning of development activities and ensure coordination of all development activities in the District.

### **4.2.3 Development Objectives of Kamonyi DISTRICT**

#### **Overall objectives**

The overall objective of the District is to achieve economic growth and social development.

#### **Specific objectives**

Kamonyi District has the following specific objectives:

- Guarantee quality formal education and significantly reduce rate of illiteracy.
- Increase agricultural production (in quality and quantity).
- Invite the youth and other economically viable groups to orient their energies and Creativity towards poverty reduction in the District.
- Improve health condition of the population in the Kamonyi District.
- Guarantee access to quality health services for all.
- Promote reproductive health by putting particular emphasis on family planning.
- Integrate the fight against HIV/AIDS into Government and poverty reduction Programmes in all Sectors and at all levels.
- Fight against malaria and malnutrition among different groups of the population.
- Increase female representation in decision making positions at all levels of the District.
- Develop norms and values which encourage society to be sensitive to gender parity.
- Develop other employment opportunities other than those linked to agriculture and livestock.
- Build capacities of organs in charge of planning.
- Improve statistics, data collection and information to support planning and budgeting process. Involve the private sector in the District economic development and encourage their initiatives.
- Put in place coordination mechanisms for aid and partnerships.
- Build mobilization and management capacity for aid given.
- Guarantee transparency and responsibility in the utilization of the District budget and aid.
- Promote and support agglomerated housing models.
- Strengthen planned land use and environment management mechanisms.
- Promote and encourage the development and use of information and communication technologies in the District.

Guarantee effective monitoring and evaluation of Government and poverty reduction programmes.

ensure social inclusion of those who have been historically disadvantaged,

The handicapped, vulnerable children, the demobilized personnel, refugees, old people).

Build the capacities of local institutions.

Promote unity and reconciliation.

Put in place and build capacity of ITORERO,

Coordinate, rationalize and harmonize efforts and development activities of human resources in the District.

#### 4.1.1. Descriptive Analysis

In this section, the study examined the descriptive statistics for both the explanatory and dependent variables of interest. That is how the IPSAS in revenue cognition, asset classification, depreciation measurement and Lease classification explains quality financial report proxied by transparency and disclosure quality. Each variable was examined based on the count, sum, mean, median (p50), maximum and minimum. Table 1 below mirrors the result of descriptive statistics for the study.

**Table 1: Descriptive statistics**

| Stats | Tadq | Leac  | Assc  | Depm  | Revrec |
|-------|------|-------|-------|-------|--------|
| Mean  | 0.5  | 11.89 | 14.89 | 14.75 | 16.48  |
| Max   | 1    | 25    | 25    | 25    | 25     |
| Min   | 0.5  | 5     | 5     | 7     | 6      |
| P50   | 0.5  | 11    | 14.5  | 14    | 16     |
| N     | 100  | 100   | 100   | 00    | 100    |

*Authors computation 2024*

The above table shows that the mean of quality financial reporting among the sampled respondents was 0.5. The number of observation was 100. The median value of firm was 0.5 for



the sampled respondents. The maximum value for the transparency and disclosure was 1; while the minimum value stood at 0. This therefore means that standard with higher or equal to the median value of 0.5 expressed as  $p50 \geq 0.5$  has its standard improved quality of financial report, while variables with value  $p50 \leq 0.5$  had low support of the quality of financial reports. The average lease classification impact was 11.89 with a maximum lease classification impact latching around 25 and a minimum of 5 for the sampled respondents between 2021 to 2023. Other relevant indicators can be deciphered from the table.

#### 4.1.2. Normality Test

The study adopted normality (Shapiro-Wilk W) test to determine if the data set is well-modeled by a normal distribution and to compute how likely it is for a random variable underlying the data set to be normally distributed. The result shown in table 2 below of Shapiro-Wilk W test for normality shows that all the variables of interest are normally distributed as lease classification, asset classification, depreciation measurement and revenue recognition are not significant at 5% level of statistical significance except lease classification. However, the test is not sensitive to normality as the data is a non-manipulative dataset that accrued over the years for the firms.

**Table 2: Normality Test**

| Variable | Obs | Pr(Skewness) | Pr(Kurtosis) | adj chi2(2) | Prob>chi2 |
|----------|-----|--------------|--------------|-------------|-----------|
| Tadq     | 100 | 0.2364       | 0.5392       | 1.82        | 0.4019    |
| Leac     | 100 | 0.0029       | 0.8132       | 8.00        | 0.0183    |
| Assc     | 100 | 0.5070       | 0.1708       | 2.38        | 0.3047    |
| Depm     | 100 | 0.1705       | 0.6669       | 2.12        | 0.3470    |
| Revrec   | 100 | 0.8455       | 0.8178       | 0.09        | 0.9555    |

*Author's computation (2024)*

### 4.1.2 Correlation Analysis

In examining the association among the variables, the study employed the Pearson correlation coefficient (correlation matrix) and the results are presented in the table below to vividly show how the variables relate to each other.

**Table 3: Correlation Analysis**

|        | Tadq    | leac    | assc    | depm    | revrec |
|--------|---------|---------|---------|---------|--------|
| Tadq   | 1.0000  |         |         |         |        |
| leac   | 0.2207  | 1.0000  |         |         |        |
| assc   | 0.0668  | 0.2580  | 1.0000  |         |        |
| depm   | 0.1599  | 0.0381  | 0.3809  | 1.0000  |        |
| revrec | -0.1888 | -0.1690 | -0.2580 | -0.1136 | 1.0000 |

*Elaborated by researcher (2024)*

The results above succinctly showed that quality financial report (Tadq) was negatively and weakly associated with revrec. The quality financial report was however, positively and moderately associated with Leac, Assc, and Depm. The above relationship degree results also show that, there exist a negative and moderate association between Leac and Assc and Depm. In any case, it is commendable to note here that relationship amongst the variables is not perfect and does not also infer causation. There are two reasons for this: The primary is called the directionality issue. However, a cursory look at table above suggests that there is no need to worry for the consequences of perfect correlation since no association among the variables of interest correlated above 80% of which the presence of serial auto correlation become a subject of worry.

### 4.1.3. Variance Inflation Factor Test (VIF)

Furthermore, multi-collinearity among the independent variables is further tested with an advanced econometric technique of Variance Inflation Factor Test (VIF) which suggests that high correlation among predictors' means that you can predict one variable using second predictor variable known as the problem of multi-collinearity. This produces unstable parameter estimates which make it very difficult to assess the unique effect of the independent variables on

the dependent variable thereby making the standard error of such parameters to become very high.

**Table 4: Variance Inflation Factor Test**

| Variable | VIF  | 1/VIF    |
|----------|------|----------|
| Assc     | 1.31 | 0.763831 |
| Depm     | 1.18 | 0.850541 |
| Leac     | 1.09 | 0.917731 |
| revrec   | 1.09 | 0.92162  |
| Mean Vif | 1.16 |          |

Elaborated by researcher (2024)

Multi-collinearity occurs in multiple regression models and it applies to a situation where two or more independent variables are found to be collinear. Multi-collinearity occurs in a multiple regression analysis if some of the independent variables are highly inter-correlated. In a nut shell, if multi-collinearity is found among the independent variables of interest, it means that they are perfectly correlated. When this happens, the parameter coefficients be indeterminate and the standard error of the estimated coefficients becomes bloated. According to Gujarati (2003), there is no consequence if the mean VIF is less than 10 or 1/VIF is less than 0.10. The table above presents the mean variance inflation factor (VIF) of the explanatory variables. However, the result depicts the absence of multi-collinearity since the mean VIF is 1.16, latching within the region of 10 against which the presence of multi-collinearity may be predicated.

#### 4.2. Test of Hypotheses

To test the hypotheses of quality financial reporting, Wallace and Hausman estimator of component variances (a two-way random and fixed effects panel) was performed at a 0.05

level of significance. Over time, when this tool is applied, researchers are usually faced with the option of choosing between using the fixed-effect panel model or the random-effect panel model. As noted by Ajibolade and Sankay (2013), the fixed-effects model which is the main technique for analysis of panel data is used when it becomes important to control for omitted variables that differ between cases but are constant over time. It allows the use of the changes in the variables over time to estimate the effects of the predictor (independent) variables on the outcome (dependent) variable.

On the other hand, the random-effects model is used when there are reasons to believe that some omitted variables may be constant over time but vary between cases, and others may be fixed between cases but vary over time. Therefore, to justify the choice of model, the Hausman specification test is largely suggested by scholars (Gujarati, 2004). Actually, this test checks for a more efficient model against a less efficient but consistent model. It ensures that the more efficient model also gives consistent results. It tests the null hypothesis that the coefficients supplied by the efficient random-effects estimator are the same as the ones estimated by the consistent fixed-effects estimator. If the p-value  $> \chi^2$  is larger than .05, then it is of safety to adopt random effects, but if the p-value  $< \chi^2$  is less than 0.05, then the fixed-effects model should be adopted (Gujarati, 2004; Ajibolade & Sankay, 2013). The table below provides a summary result obtained from both fixed and random effect models for return on asset model.

**Table 5: International Public Sector Accounting Standards regression result**

| Tadq   | Coef.     | Std. Err. | t     | P>t   | [95%      | Conf. Interval] |
|--------|-----------|-----------|-------|-------|-----------|-----------------|
| leac   | .1580158  | .0759793  | 2.08  | 0.040 | .0071778  | .3088539        |
| assc   | -.066329  | .0795485  | -0.83 | 0.406 | -.2242529 | .0915948        |
| depm   | .1255849  | .0783794  | 1.60  | 0.112 | -.0300179 | .2811877        |
| revrec | -.1317163 | .084759   | -1.55 | 0.124 | -.2999842 | .0365517        |
| _cons  | 13.61714  | 2.292906  | 5.94  | 0.000 | 9.065144  | 18.16913        |

Number of obs = 100      F( 4, 28) = 46.43;      Prob > F = 0.0000  
R-squared = 0.9116;      Adj R-squared = 0.8920;      Root MSE = 2.4087

*Authors computation 2024*

From the results obtained above it is found that all the independent variables employed in this study were able to explain about 89% of the variation in the dependent variable of quality financial report of those who adopts IPSAS. This indicates that the independent variables of interest during the period under consideration were able to explain less of the variation in the dependent variable of firm value. That is to say that about 11% of intra-individual variability of the endogenous variable is explained by exogenous variables. Furthermore, the probability value of F\_statistics (0.0000) showed that the overall model is best fit and good for policy recommendation.

**Hypothesis 1:** Revenue recognition in IPSAS does not significantly impact the quality of financial reports in public sector in Kamonyi district.

The robust regression presented above showed the result of the variable of revenue recognition in IPSAS to quality financial reporting as follows: (Revrec (Coef. = -.1317163 , t = -1.55 and P value = 0.124 ). The result above shows that the effect of revenue recognition adoption on quality financial reporting in Kamonyi district is negative and statistically not significant. This finding supports apriori expectation such that the adoption of revenue recognition standard prescribed by IPSAS by a unit of the sampled operators not improve the quality of financial

reports represented by transparency and disclosure quality significantly. Based on the result, the study accepts the null hypothesis thereby rejects the alternative hypothesis. The study concludes that revenue recognition standard of IPSAS adoption has a statistical non-significant negative effect on quality financial reporting in Kamonyi district.

**Hypothesis 2:** Depreciation measurement of IPSAS does not significantly impact the quality of financial reports in public sector in Kamonyi district.

The robust regression presented above showed the variable of Depreciation measurement (DEPM) (Coef. = .1255849,  $t = 1.60$  and  $P \text{ value} = 0.112$ ). Following the results above, it is revealed that the effect of depreciation measurement standard of IPSAS on quality of financial reporting is positive and statistically not significant. This finding does not agree with a priori expectation since the study expects adoption of depreciation measurement standard in IPSAS not to improve quality of transparency and disclosure in financial reportage in Kamonyi district. Based on the result, the study accepts the null hypothesis and concludes that depreciation measurement standard of IPSAS has statistical non-significant effect on quality of financial reporting (transparency and disclosure) in Kamonyi district.

**Hypothesis 3:** Asset classification standard of IPSAS does not significantly affect the quality of financial reporting in public sector of Kamonyi district.

The robust regression presented above show the variable of asset classification (ASSC) (Coef. =  $-0.066329$ ,  $t = -0.83$  and  $P \text{ value} = 0.406$ ). Following the results above, it is evident that the effect of asset classification standard of IPSAS on quality of financial reporting is negative and statistically not significant. This result suggests that as the activity of Asset classification decreases, financial reporting quality not change significant position level. This result support a priori expectation hence the study accepts the null hypothesis and conclude that asset

classification adoption on IPSAS has a statistical non-significant negative effect on quality of financial reporting in Kamonyi district of Rwanda.

**Hypothesis 4:** Lease classification does not significantly affect the quality of financial reporting in Kamonyi District.

The robust regression presented above show that the Lease classification standard of IPSAS (LEAC) has (Coef. = .1580158,  $t = 2.08$  and  $P \text{ value} = 0.040$ ). Evidently, the results above revealed that the influence of Lease classification standard adoption on quality of financial reporting in Kamonyi district is negative and statistically significant. This result suggests that as the adoption of lease classification standard increases, quality of financial reporting increases at significant rate. In this regard, the study rejects the null hypothesis and concludes that lease classification adoption in the IPSAS has a statistical positive influence on quality of financial reporting in Kamonyi district of Rwanda.

## **CHAPTER 5: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

### **5.1. Summary of Findings**

This study investigated the impact of the adoption of international Public Sector Accounting Standards on quality of financial reports in public sector in Kamonyi district . The scope of this study covers three year period ranging from 2021 to 2023. The independent variables of interest which the study employed to test the impact of the adoption of international Public Sector Accounting Standards on quality of financial reports in public sector in Kamonyi district are: revenue recognition standard adoption, depreciation measurement adoption, lease classification adoption and asset classification adoption. Furthermore, the study analysis conducted reveals that for quality of financial reporting at 5% significance level:

- 1.** Revenue recognition standard adoption on quality financial reporting in Kamonyi district is negative and statistically not significant during the period under investigation.
- 2.** Depreciation measurement adoption influence on quality financial reporting in Kamonyi district is positive and statistically not significant amid the period under examination.
- 3.** Asset classification standard estimate has negative and statistically not significant influence on quality financial reporting in Kamonyi district.
- 4.** The influence of Lease classification adoption on quality of financial report in Kamonyi district is positive and statistically significant. .



## **5.2. Conclusion**

In conclusion, the effect of the adoption of international Public Sector Accounting Standards on quality of financial reports in public sector in Kamonyi district have been an intense area of research and thus have provided an interesting issue of discourse. Based on the review of the literature and also propelled by the gaps in the literature, four perspectives, which are endogenous were identified and framed as hypotheses which were tested in this study.

In general, the study observed that quality financial reporting was mainly influenced significantly by the independent variable of lease classification adoption that was positive and significant. The study accepted the null hypotheses of this variable and confirmed that they significantly affect quality of financial report in Kamonyi district studied. Expediently, the study accepted the null hypotheses affirming that the other independent variables did not significantly affect the quality financial reporting (transparency and disclosure) in Kamonyi district.

## **5.3. Suggestion**

Sequel to the study results, it is suggested principally from the specific objectives of the study as follows:

1. The revenue recognition standard adoption IPSAS should be hyped in order for more operators to adopt and embraces it.
2. The sponsored Depreciation measurement method by IPSAS should be sustained.
3. Persistent education on Asset classification standard should be sustained if its adoption significantly affect quality financial report.
4. The lease classification in the IPSAS should be maintained.

#### 5.4. Contributions to Knowledge

This study contributes to existing literature that relates to the influence of IPSAS adoption on quality financial reporting in Kamonyi district. The study covered period from 2013-2023. Furthermore, this study is deemed to blaze the trail by being at the fore front of the subject matter, to the best of author's knowledge.

This study also contributes to knowledge by employing four measures of IPSAS adoption areas like lease classification, asset classification, depreciation and revenue recognition and the dependent variable of quality of financial reporting(transparency and disclosure quality).

Noticeably, another contribution made by this study is in the area of new model developed for this research work following the results obtained from the robust regression analysis as provided below;

$$\mathbf{Tadq}_{it} = \pi_0 + \pi_1 \mathbf{b\_Leac}_{it} + \pi_2 \mathbf{b\_Assc}_{it} + \pi_3 \mathbf{b\_Depm}_{it} + \pi_4 \mathbf{b\_Revre}_{it} + \varepsilon_{it}$$

The equation presented above represents the econometric function of the study hypotheses which relates to the idea that; IPSAS adoption variables influence quality financial report in Kaonti district.

#### 5.5. Suggestions for Further Research

The author of this study recommends that further studies could be undertaken on the influence of IPSAS adoption on quality financial report in other districts. The geographical scope of the study may also be extended to cover other districts within Rwanda. This provide a more elaborate generalization of research outcomes in relation to issues under discourse which this is unable to capture.

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**APPENDIX**

## QUESTIONNAIRE

### QUESTIONNAIRES ON: PUBLIC SECTOR ACCOUNTING STANDARDS AND QUALITY OF FINANCIAL REPORTING IN LOCAL ADMINISTRATIVE ENTITIES BIOGRAPHICAL DATA

Please tick (√) and fill appropriate

1. Gender: Male [  ] Female [  ]
2. Age: 18-30 years [  ], 31-40 years [  ], 41-50 years [  ], 50 years and above [  ]
3. Marital Status: Married [  ], Single [  ], Divorced [  ]
4. Education: SSCE/GCE/NECO [  ], NCE/ND [  ], HND/B.Sc [  ], MBA/M.Sc [  ]Others [  ]
5. Categories of Respondent: Sales M[  ], Non-Sales Manager [  ]

Please indicate the extent in which you agree or disagree with the statement using the following and tick (√) appropriately.

- SA                      Strongly Agree  
 A                        Agree  
 UD                      Undecided  
 SD                      Strongly Disagree  
 D                        Disagree

#### Question 1: The effect of Revenue Recognition in IPSAS on the quality of financial reporting in Kamonyi district

| S/N | Statements  | SA | A | UD | SD | D |
|-----|---|----|---|----|----|---|
| 1   | There are ethical guidelines for recognizing revenue in Kamonyi district  |    |   |    |    |   |
| 2   | Revenue is recognized when the entity satisfies a performance obligation. |    |   |    |    |   |
| 3   | The basis for recognizing revenue may impact financial report.            |    |   |    |    |   |
| 4   | The financial operators may not be aware to the                           |    |   |    |    |   |

|   |  |  |  |  |  |  |
|---|--|--|--|--|--|--|
|   | basis to recognize revenue and its impact                            |  |  |  |  |  |
| 5 | Revenue recognition when earned or realized may lead to manipulation |  |  |  |  |  |

**Question 2: The effect of Depreciation measurement in IPSAS on the quality of financial reporting in Kamonyi district**

| S/N | Statement  | SA | A | UD | SD | D |
|-----|--|----|---|----|----|---|
| 6   | The perceived relevance of Depreciation measurement may not support financial statement credibility          |    |   |    |    |   |
| 7   | Economic decisions are not based on Depreciation measurement of asset.                                       |    |   |    |    |   |
| 8   | The operators may not be conversant with the application of Depreciation measurement in IPSAS.               |    |   |    |    |   |
| 9   | The non uniform application of Depreciation measurement on all assets may bring bias on financial statement. |    |   |    |    |   |
| 10  | There are usually complications in Depreciation measurement methodologies which may impact statement quality |    |   |    |    |   |

**Question 3: Effect of Asset classification standard in IPSAS on the quality of financial reporting in public sector of Kamonyi district?**

| S/N | Statements   | SA | A | UD | SD | D |
|-----|--|----|---|----|----|---|
| 11  | There is lack of awareness on the standard asset classification amongst the operators  |    |   |    |    |   |
| 12  | Accounting malfeasance of misrepresentation of expenditure as asset rather than as expenses and its timing creates uncertainty |    |   |    |    |   |
| 13  | Biased measurement and subjective valuation of asset affects reliance on financial report                                      |    |   |    |    |   |
| 14  | The paucity of core accounting information under the previous financial reporting system affect asset classification           |    |   |    |    |   |
| 15  | Assets were not properly and adequately classified for lack of knowledge   |    |   |    |    |   |

**Question4: The effect of lease classification in IPSAS on the quality of financial reporting in kamonyi district.**

| S/N | Statements   | SA | A | UD | SD | D |
|-----|--|----|---|----|----|---|
| 16  | Leases are not captured other than rent paid under operating lease and this poses challenge. |    |   |    |    |   |
| 17  | There is no comprehensive lease classification in financing and operating lease.             |    |   |    |    |   |
| 18  | Lease operation is not popular within the accounting operators.                              |    |   |    |    |   |
| 19  | There is no data base of asset under lease operation   |    |   |    |    |   |
| 20  | Valuation of assets under lease is biased and subjective                                     |    |   |    |    |   |

**APPENDIX 1**

| ID | LEAC | ASSC | DEPM | REVREC | TADQ |
|----|------|------|------|--------|------|
| 1  | 2.5  | 3.6  | 4    | 3      | 1    |
| 2  | 4    | 3.4  | 3.8  | 2.8    | 1    |
| 3  | 3.2  | 3.6  | 3.8  | 2.8    | 0    |
| 4  | 3.2  | 3.6  | 4    | 3      | 1    |
| 5  | 3    | 0    | 3.9  | 2.9    | 0    |
| 6  | 4.2  | 4    | 3.9  | 2.9    | 0    |
| 7  | 4.2  | 3.8  | 3.6  | 3.4    | 0    |
| 8  | 4    | 2.8  | 3.6  | 3.6    | 0    |
| 9  | 4.2  | 3.4  | 3.8  | 3.2    | 1    |
| 10 | 4    | 3.2  | 3.6  | 3.4    | 1    |
| 11 | 5    | 3.6  | 3.8  | 3.4    | 0    |
| 12 | 2.2  | 3.2  | 3.6  | 3.4    | 0    |
| 13 | 4.4  | 3.2  | 3.6  | 3      | 1    |
| 14 | 3.6  | 2.2  | 3.6  | 3.4    | 0    |
| 15 | 3.4  | 3.6  | 3.6  | 3.4    | 1    |
| 16 | 3.8  | 4    | 3.6  | 3.4    | 0    |
| 17 | 4.7  | 3.4  | 3.6  | 2.6    | 0    |
| 18 | 3.4  | 4    | 3.6  | 3.2    | 0    |
| 19 | 4.6  | 4    | 3.6  | 3.4    | 1    |
| 20 | 3.4  | 4    | 3.6  | 3.2    | 1    |
| 21 | 3.2  | 3.8  | 3.8  | 3.4    | 1    |
| 22 | 3.6  | 4    | 3.6  | 3.4    | 1    |
| 23 | 6.2  | 4    | 3.8  | 3.4    | 1    |
| 24 | 3.4  | 2    | 3.6  | 3.2    | 1    |
| 25 | 3.8  | 4    | 3.8  | 2.8    | 1    |
| 26 | 4.4  | 4    | 4    | 3.4    | 1    |
| 27 | 3.2  | 4    | 3.8  | 3.4    | 1    |
| 28 | 3.2  | 3.8  | 3.6  | 3.4    | 1    |



|    |     |     |     |     |   |
|----|-----|-----|-----|-----|---|
| 29 | 4   | 3.8 | 3.6 | 3.6 | 1 |
| 30 | 3.2 | 3.4 | 3.8 | 3.2 | 0 |
| 31 | 4   | 3.2 | 3.6 | 3.4 | 0 |
| 32 | 4   | 3.6 | 3.8 | 3.4 | 0 |
| 33 | 4.2 | 3.2 | 3.6 | 3.4 | 0 |
| 34 | 4.4 | 3.2 | 3.6 | 3   | 0 |
| 35 | 3.6 | 3.2 | 3.6 | 3.4 | 1 |
| 36 | 3.6 | 3.6 | 3.6 | 3.4 | 1 |
| 37 | 3.6 | 4   | 3.6 | 3.4 | 0 |
| 38 | 4.8 | 3.4 | 3.6 | 2.6 | 0 |
| 39 | 3.4 | 4   | 3.6 | 3.2 | 1 |
| 40 | 3.6 | 2   | 3.6 | 3.4 | 0 |
| 41 | 3.6 | 4   | 3.6 | 3.2 | 0 |
| 42 | 3.2 | 3.8 | 3.8 | 3.4 | 1 |
| 43 | 3.6 | 4   | 3.6 | 3.4 | 0 |
| 44 | 3.2 | 4   | 3.8 | 3.4 | 1 |
| 45 | 4.6 | 3.4 | 3.6 | 2.6 | 1 |
| 46 | 3.6 | 4   | 3.6 | 3.2 | 1 |
| 47 | 4   | 4   | 3.6 | 3.4 | 1 |
| 48 | 3.4 | 4   | 3.6 | 3.2 | 1 |
| 49 | 3.2 | 3.8 | 3.8 | 3.4 | 1 |
| 50 | 3.6 | 4   | 3.6 | 3.4 | 1 |
| 51 | 3.2 | 2   | 3.8 | 3.4 | 1 |
| 52 | 3.4 | 4   | 3.6 | 3.2 | 1 |
| 53 | 3.8 | 4   | 3.8 | 2.8 | 1 |
| 54 | 4.4 | 4   | 4   | 3.4 | 1 |
| 55 | 3.2 | 4   | 3.8 | 3.4 | 0 |
| 56 | 3.2 | 3.8 | 3.6 | 3.4 | 0 |
| 57 | 4   | 3.8 | 3.6 | 3.6 | 0 |
| 58 | 3.2 | 3.4 | 3.8 | 3.2 | 0 |
| 59 | 4   | 3.2 | 3.6 | 3.4 | 0 |
| 60 | 4   | 3.6 | 3.8 | 3.4 | 1 |
| 61 | 4.2 | 3.2 | 3.6 | 3.4 | 1 |
| 62 | 2.4 | 3.2 | 3.6 | 3   | 0 |
| 63 | 3.6 | 3.2 | 3.6 | 3.4 | 0 |
| 64 | 3.4 | 3.6 | 3.6 | 3.4 | 1 |
| 65 | 3.2 | 3.6 | 3.8 | 2.8 | 0 |
| 66 | 3.2 | 3.6 | 4   | 3   | 0 |
| 67 | 3.2 | 2.4 | 3.7 | 3.1 | 1 |
| 68 | 4.2 | 4   | 3.7 | 3.1 | 0 |
| 69 | 3.2 | 2.8 | 3.6 | 3.4 | 1 |
| 70 | 4   | 3.8 | 3.6 | 3.6 | 1 |
| 71 | 3.2 | 3.4 | 3.8 | 3.2 | 1 |

|     |     |     |     |     |   |
|-----|-----|-----|-----|-----|---|
| 72  | 4   | 3.2 | 3.6 | 3.4 | 1 |
| 73  | 4   | 3.6 | 3.8 | 3.4 | 1 |
| 74  | 2.7 | 3.2 | 3.6 | 3.4 | 1 |
| 75  | 4.4 | 3.2 | 3.6 | 3   | 1 |
| 76  | 3.6 | 3.2 | 3.6 | 3.4 | 1 |
| 77  | 3.4 | 3.6 | 3.6 | 3.4 | 1 |
| 78  | 3.6 | 4   | 3.6 | 3.4 | 1 |
| 79  | 4.6 | 3.4 | 3.6 | 2.6 | 1 |
| 80  | 3.4 | 4   | 3.6 | 3.2 | 0 |
| 81  | 3.6 | 4   | 3.6 | 3.4 | 0 |
| 82  | 3.4 | 4   | 3.6 | 3.2 | 0 |
| 83  | 3.2 | 3.8 | 3.8 | 3.4 | 0 |
| 84  | 3.6 | 4   | 3.6 | 3.4 | 0 |
| 85  | 3.2 | 4   | 3.8 | 3.4 | 1 |
| 86  | 3.4 | 4   | 3.6 | 3.2 | 1 |
| 87  | 3.8 | 4   | 3.8 | 2.8 | 0 |
| 88  | 4.4 | 4   | 4   | 3.4 | 0 |
| 89  | 3.2 | 4   | 3.8 | 3.4 | 1 |
| 90  | 3.2 | 3.8 | 3.6 | 3.4 | 0 |
| 91  | 4   | 3.8 | 3.6 | 3.6 | 0 |
| 92  | 3.2 | 3.4 | 3.8 | 3.2 | 1 |
| 93  | 4   | 3.2 | 3.6 | 3.4 | 0 |
| 94  | 4   | 3.6 | 3.8 | 3.4 | 1 |
| 95  | 3.2 | 3.2 | 3.6 | 3.4 | 1 |
| 96  | 4.4 | 3.2 | 3.6 | 3   | 1 |
| 97  | 3.6 | 3.2 | 3.6 | 3.4 | 1 |
| 98  | 3.4 | 3.6 | 3.6 | 3.4 | 1 |
| 99  | 3.6 | 4   | 3.6 | 3.4 | 1 |
| 100 | 3.2 | 3.6 | 3.8 | 3.2 | 0 |

## APPENDIX 2

| ID | LEAC |     |     |     |     |     | ASSC |     |     |     |     |     | DEPM |     |    |    |     |     | REVREC |     |    |     |     |     | TADQ |    |     |     |     |   |
|----|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|------|-----|----|----|-----|-----|--------|-----|----|-----|-----|-----|------|----|-----|-----|-----|---|
|    | A1   | A2  | A3  | A4  | A5  |     | B1   | B2  | B3  | B4  | B5  |     | C1   | C2  | C3 | C4 | C5  |     | D1     | D2  | D3 | D4  | D5  |     | E1   | E2 | E3  | E4  | E5  |   |
| 1  | 1.3  | 0   | 0   | 1.2 | 0   | 2.5 | 2    | 0.8 | 0   | 0.8 | 0   | 3.6 | 2    | 1.6 | 0  | 0  | 0   | 4   | 2      | 0   | 0  | 0.8 | 0.2 | 3   | 0    | 0  | 1.6 | 0   | 0.8 | 1 |
| 2  | 1    | 0.8 | 1   | 1.2 | 0   | 4   | 2    | 0.8 | 0   | 0.4 | 0.2 | 3.4 | 1    | 2.4 | 0  | 0  | 0   | 3.8 | 2      | 0   | 0  | 0.4 | 0.4 | 2.8 | 0    | 0  | 2.4 | 0.2 | 0.8 | 1 |
| 3  | 2    | 0.8 | 0.6 | 0.8 | 0   | 4.2 | 3    | 0   | 0   | 0.4 | 0.2 | 3.6 | 1    | 2.4 | 0  | 0  | 0   | 3.8 | 2      | 0   | 0  | 0.4 | 0.4 | 2.8 | 0    | 0  | 2.4 | 0.2 | 0   | 0 |
| 4  | 2    | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 2    | 0.8 | 0   | 0.8 | 0   | 3.6 | 2    | 1.6 | 0  | 0  | 0   | 4   | 2      | 0   | 0  | 0.8 | 0.2 | 3   | 0    | 0  | 1.6 | 0   | 0.8 | 1 |
| 5  | 1.1  | 0.4 | 0.6 | 0.9 | 0.1 | 3   | 2.25 | 0.6 | 0   | 0.6 | 0.1 | 0   | 1.5  | 2   | 0  | 0  | 0   | 3.9 | 2      | 0   | 0  | 0.6 | 0.3 | 2.9 | 0    | 0  | 2   | 0.1 | 0.6 | 0 |
| 6  | 3    | 0.8 | 0   | 0.4 | 0   | 4.2 | 2    | 1.6 | 0   | 0.4 | 0   | 4   | 1.5  | 2   | 0  | 0  | 0   | 3.9 | 2      | 0   | 0  | 0.6 | 0.3 | 2.9 | 0    | 0  | 2   | 0   | 1.6 | 0 |
| 7  | 1    | 1.6 | 1   | 0.4 | 0.2 | 4.2 | 2    | 0.8 | 0.6 | 0.4 | 0   | 3.8 | 0    | 3.2 | 0  | 0  | 0   | 3.6 | 2      | 0.8 | 0  | 0.4 | 0.2 | 3.4 | 0.8  | 0  | 3.2 | 0   | 0.8 | 0 |
| 8  | 2    | 1.6 | 0   | 0.4 | 0   | 4   | 1    | 0.8 | 0.6 | 0.4 | 0   | 2.8 | 2    | 3.2 | 0  | 0  | 0   | 5.6 | 3      | 0   | 0  | 0.4 | 0.2 | 3.6 | 0    | 0  | 3.2 | 0   | 0.8 | 0 |
| 9  | 1    | 1.6 | 1   | 0.4 | 0.2 | 4.2 | 2    | 0.8 | 0   | 0.4 | 0.2 | 3.4 | 1    | 2.4 | 0  | 0  | 0   | 3.8 | 2      | 0   | 0  | 0.8 | 0.4 | 3.2 | 0    | 0  | 2.4 | 0.2 | 0.8 | 1 |
| 10 | 4    | 1.6 | 0   | 0.4 | 0   | 6   | 2    | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 0    | 3.2 | 0  | 0  | 0   | 3.6 | 2      | 0.8 | 0  | 0.4 | 0.2 | 3.4 | 0.8  | 0  | 3.2 | 0.2 | 0   | 1 |
| 11 | 2    | 1.6 | 1   | 0.4 | 0   | 5   | 1    | 1.6 | 0.6 | 0.4 | 0   | 3.6 | 1    | 2.4 | 0  | 0  | 0   | 3.8 | 2      | 0.8 | 0  | 0.4 | 0.2 | 3.4 | 0.8  | 0  | 2.4 | 0   | 1.6 | 0 |
| 12 | 1    | 0.8 | 0   | 0.4 | 0   | 2.2 | 2    | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 0    | 3.2 | 0  | 0  | 0   | 3.6 | 2      | 0.8 | 0  | 0.4 | 0.2 | 3.4 | 0.8  | 0  | 3.2 | 0.2 | 0   | 0 |
| 13 | 3    | 0.8 | 0.6 | 0   | 0   | 4.4 | 2    | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 2    | 3.2 | 0  | 0  | 0   | 5.6 | 2      | 0   | 0  | 0.8 | 0.2 | 3   | 0    | 0  | 3.2 | 0.2 | 0   | 1 |
| 14 | 2    | 0.8 | 0   | 0.8 | 0   | 3.6 | 1    | 0   | 0.6 | 0.4 | 0.2 | 2.2 | 0    | 3.2 | 0  | 0  | 0   | 3.6 | 2      | 0.8 | 0  | 0.4 | 0.2 | 3.4 | 0.8  | 0  | 3.2 | 0.2 | 0   | 0 |
| 15 | 2    | 0.8 | 0   | 0.4 | 0.2 | 3.4 | 1    | 1.6 | 0.6 | 0.4 | 0   | 3.6 | 0    | 3.2 | 0  | 0  | 0   | 3.6 | 2      | 0.8 | 0  | 0.4 | 0.2 | 3.4 | 0.8  | 0  | 3.2 | 0   | 1.6 | 1 |
| 16 | 2    | 0.8 | 0.2 | 0.8 | 0   | 3.8 | 3    | 0   | 0.6 | 0.4 | 0   | 4   | 0    | 3.2 | 0  | 0  | 0   | 3.6 | 2      | 0.8 | 0  | 0.4 | 0.2 | 3.4 | 0.8  | 0  | 3.2 | 0   | 0   | 0 |
| 17 | 3    | 1.6 | 0.1 | 0   | 0   | 4.7 | 2    | 0.8 | 0   | 0.4 | 0.2 | 3.4 | 2    | 3.2 | 0  | 0  | 0   | 5.6 | 1      | 0.8 | 0  | 0.4 | 0.4 | 2.6 | 0.8  | 0  | 3.2 | 0.2 | 0.8 | 0 |
| 18 | 2    | 0.8 | 0   | 0.4 | 0.2 | 3.4 | 3    | 0   | 0.6 | 0.4 | 0   | 4   | 0    | 3.2 | 0  | 0  | 0   | 3.6 | 2      | 0.8 | 0  | 0   | 0.4 | 3.2 | 0.8  | 0  | 3.2 | 0   | 0   | 0 |
| 19 | 4    | 0.8 | 1   | 0.8 | 0   | 6.6 | 3    | 0   | 0.6 | 0.4 | 0   | 4   | 0    | 3.2 | 0  | 0  | 0   | 3.6 | 2      | 0.8 | 0  | 0.4 | 0.2 | 3.4 | 0.8  | 0  | 3.2 | 0   | 0   | 1 |
| 20 | 2    | 0.8 | 0   | 0.4 | 0.2 | 3.4 | 3    | 0   | 0.6 | 0.4 | 0   | 4   | 0    | 3.2 | 0  | 0  | 0   | 3.6 | 2      | 0.8 | 0  | 0   | 0.4 | 3.2 | 0.8  | 0  | 3.2 | 0   | 0   | 1 |
| 21 | 1    | 1.6 | 0   | 0.4 | 0.2 | 3.2 | 2    | 0.8 | 0.6 | 0.4 | 0   | 3.8 | 2    | 1.6 | 0  | 0  | 0.2 | 3.8 | 2      | 0.8 | 0  | 0.4 | 0.2 | 3.4 | 0.8  | 0  | 1.6 | 0   | 0.8 | 1 |
| 22 | 2    | 0.8 | 0   | 0.8 | 0   | 3.6 | 3    | 0   | 0.6 | 0.4 | 0   | 4   | 0    | 3.2 | 0  | 0  | 0   | 3.6 | 2      | 0.8 | 0  | 0.4 | 0.2 | 3.4 | 0.8  | 0  | 3.2 | 0   | 0   | 1 |
| 23 | 4    | 1.6 | 3   | 0.4 | 0.2 | 9.2 | 3    | 0   | 0.6 | 0.4 | 0   | 4   | 2    | 1.6 | 0  | 0  | 0.2 | 3.8 | 2      | 0.8 | 0  | 0.4 | 0.2 | 3.4 | 0.8  | 0  | 1.6 | 0   | 0   | 1 |
| 24 | 2    | 0.8 | 0   | 0.4 | 0.2 | 3.4 | 1    | 0   | 0.6 | 0.4 | 0   | 2   | 1    | 3.2 | 0  | 0  | 0   | 4.6 | 2      | 0.8 | 0  | 0   | 0.4 | 3.2 | 0.8  | 0  | 3.2 | 0   | 0   | 1 |
| 25 | 2    | 0.8 | 0.6 | 0.4 | 0   | 3.8 | 3    | 0   | 0.6 | 0.4 | 0   | 4   | 2    | 1.6 | 0  | 0  | 0.2 | 3.8 | 1      | 0.8 | 0  | 0.8 | 0.2 | 2.8 | 0.8  | 0  | 1.6 | 0   | 0   | 1 |

|    |   |     |     |     |     |     |   |     |     |     |     |     |   |     |   |   |     |     |   |     |   |     |     |     |     |   |     |     |     |   |   |
|----|---|-----|-----|-----|-----|-----|---|-----|-----|-----|-----|-----|---|-----|---|---|-----|-----|---|-----|---|-----|-----|-----|-----|---|-----|-----|-----|---|---|
| 26 | 2 | 2.4 | 0   | 0   | 0   | 4.4 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 2 | 1.6 | 0 | 0 | 0   | 4   | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 1.6 | 0   | 0   | 0 | 1 |
| 27 | 1 | 1.6 | 0   | 0.4 | 0.2 | 3.2 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 2 | 1.6 | 0 | 0 | 0.2 | 3.8 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 1.6 | 0   | 0   | 0 | 1 |
| 28 | 1 | 1.6 | 0   | 0.4 | 0.2 | 3.2 | 2 | 0.8 | 0.6 | 0.4 | 0   | 3.8 | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 3.2 | 0   | 0.8 | 1 |   |
| 29 | 2 | 1.6 | 0   | 0.4 | 0   | 4   | 2 | 0.8 | 0.6 | 0.4 | 0   | 3.8 | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 3 | 0   | 0 | 0.4 | 0.2 | 3.6 | 0   | 0 | 3.2 | 0   | 0.8 | 1 |   |
| 30 | 1 | 1.6 | 0   | 0.4 | 0.2 | 3.2 | 2 | 0.8 | 0   | 0.4 | 0.2 | 3.4 | 1 | 2.4 | 0 | 0 | 0   | 3.8 | 2 | 0   | 0 | 0.8 | 0.4 | 3.2 | 0   | 0 | 2.4 | 0.2 | 0.8 | 0 |   |
| 31 | 2 | 1.6 | 0   | 0.4 | 0   | 4   | 2 | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 3.2 | 0.2 | 0   | 0 |   |
| 32 | 2 | 1.6 | 0   | 0.4 | 0   | 4   | 1 | 1.6 | 0.6 | 0.4 | 0   | 3.6 | 1 | 2.4 | 0 | 0 | 0   | 3.8 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 2.4 | 0   | 1.6 | 0 |   |
| 33 | 3 | 0.8 | 0   | 0.4 | 0   | 4.2 | 2 | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 3.2 | 0.2 | 0   | 0 |   |
| 34 | 3 | 0.8 | 0.6 | 0   | 0   | 4.4 | 2 | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0   | 0 | 0.8 | 0.2 | 3   | 0   | 0 | 3.2 | 0.2 | 0   | 0 |   |
| 35 | 2 | 0.8 | 0   | 0.8 | 0   | 3.6 | 2 | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 3.2 | 0.2 | 0   | 1 |   |
| 36 | 2 | 0.8 | 0.2 | 0.4 | 0.2 | 3.6 | 1 | 1.6 | 0.6 | 0.4 | 0   | 3.6 | 2 | 3.2 | 0 | 0 | 0   | 5.6 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 3.2 | 0   | 1.6 | 1 |   |
| 37 | 2 | 0.8 | 0   | 0.8 | 0   | 3.6 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 3.2 | 0   | 0   | 0 |   |
| 38 | 3 | 1.6 | 0.2 | 0   | 0   | 4.8 | 2 | 0.8 | 0   | 0.4 | 0.2 | 3.4 | 2 | 3.2 | 0 | 0 | 0   | 5.6 | 1 | 0.8 | 0 | 0.4 | 0.4 | 2.6 | 0.8 | 0 | 3.2 | 0.2 | 0.8 | 0 |   |
| 39 | 2 | 0.8 | 0   | 0.4 | 0.2 | 3.4 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0   | 0.4 | 3.2 | 0.8 | 0 | 3.2 | 0   | 0   | 1 |   |
| 40 | 2 | 0.8 | 0   | 0.8 | 0   | 3.6 | 1 | 0   | 0.6 | 0.4 | 0   | 2   | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 3.2 | 0   | 0   | 0 |   |
| 41 | 2 | 0.8 | 0.2 | 0.4 | 0.2 | 3.6 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0   | 0.4 | 3.2 | 0.8 | 0 | 3.2 | 0   | 0   | 0 |   |
| 42 | 1 | 1.6 | 0   | 0.4 | 0.2 | 3.2 | 2 | 0.8 | 0.6 | 0.4 | 0   | 3.8 | 2 | 1.6 | 0 | 0 | 0.2 | 3.8 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 1.6 | 0   | 0.8 | 1 |   |
| 43 | 2 | 0.8 | 0   | 0.8 | 0   | 3.6 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 3.2 | 0   | 0   | 0 |   |
| 44 | 1 | 1.6 | 0   | 0.4 | 0.2 | 3.2 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 2 | 1.6 | 0 | 0 | 0.2 | 3.8 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 1.6 | 0   | 0   | 1 |   |
| 45 | 3 | 1.6 | 0   | 0   | 0   | 4.6 | 2 | 0.8 | 0   | 0.4 | 0.2 | 3.4 | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 1 | 0.8 | 0 | 0.4 | 0.4 | 2.6 | 0.8 | 0 | 3.2 | 0.2 | 0.8 | 1 |   |
| 46 | 2 | 0.8 | 0.2 | 0.4 | 0.2 | 3.6 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 2 | 3.2 | 0 | 0 | 0   | 5.6 | 2 | 0.8 | 0 | 0   | 0.4 | 3.2 | 0.8 | 0 | 3.2 | 0   | 0   | 1 |   |
| 47 | 2 | 0.8 | 0.4 | 0.8 | 0   | 4   | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 3.2 | 0   | 0   | 1 |   |
| 48 | 3 | 0.8 | 0   | 0.4 | 0.2 | 4.4 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0   | 0.4 | 3.2 | 0.8 | 0 | 3.2 | 0   | 0   | 1 |   |
| 49 | 1 | 1.6 | 0   | 0.4 | 0.2 | 3.2 | 2 | 0.8 | 0.6 | 0.4 | 0   | 3.8 | 2 | 1.6 | 0 | 0 | 0.2 | 3.8 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 1.6 | 0   | 0.8 | 1 |   |
| 50 | 2 | 0.8 | 0   | 0.8 | 0   | 3.6 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 3.2 | 0   | 0   | 1 |   |
| 51 | 3 | 1.6 | 0   | 0.4 | 0.2 | 5.2 | 1 | 0   | 0.6 | 0.4 | 0   | 2   | 2 | 1.6 | 0 | 0 | 0.2 | 3.8 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 1.6 | 0   | 0   | 1 |   |
| 52 | 2 | 0.8 | 0   | 0.4 | 0.2 | 3.4 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0   | 0.4 | 3.2 | 0.8 | 0 | 3.2 | 0   | 0   | 1 |   |
| 53 | 2 | 0.8 | 0.6 | 0.4 | 0   | 3.8 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 2 | 1.6 | 0 | 0 | 0.2 | 3.8 | 1 | 0.8 | 0 | 0.8 | 0.2 | 2.8 | 0.8 | 0 | 1.6 | 0   | 0   | 1 |   |
| 54 | 2 | 2.4 | 0   | 0   | 0   | 4.4 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 2 | 1.6 | 0 | 0 | 0   | 4   | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 1.6 | 0   | 0   | 1 |   |

|    |     |     |     |     |     |      |   |     |     |     |     |     |     |      |   |   |     |     |   |     |   |       |      |     |     |   |     |     |      |   |
|----|-----|-----|-----|-----|-----|------|---|-----|-----|-----|-----|-----|-----|------|---|---|-----|-----|---|-----|---|-------|------|-----|-----|---|-----|-----|------|---|
| 55 | 1   | 1.6 | 0   | 0.4 | 0.2 | 3.2  | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 2   | 1.6  | 0 | 0 | 0.2 | 3.8 | 2 | 0.8 | 0 | 0.4   | 0.2  | 3.4 | 0.8 | 0 | 1.6 | 0   | 0    | 0 |
| 56 | 1   | 1.6 | 0   | 0.4 | 0.2 | 3.2  | 2 | 0.8 | 0.6 | 0.4 | 0   | 3.8 | 0   | 3.2  | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4   | 0.2  | 3.4 | 0.8 | 0 | 3.2 | 0   | 0.8  | 0 |
| 57 | 2   | 1.6 | 0   | 0.4 | 0   | 4    | 2 | 0.8 | 0.6 | 0.4 | 0   | 3.8 | 2   | 3.2  | 0 | 0 | 0   | 5.6 | 3 | 0   | 0 | 0.4   | 0.2  | 3.6 | 0   | 0 | 3.2 | 0   | 0.8  | 0 |
| 58 | 1   | 1.6 | 0   | 0.4 | 0.2 | 3.2  | 2 | 0.8 | 0   | 0.4 | 0.2 | 3.4 | 1   | 2.4  | 0 | 0 | 0   | 3.8 | 2 | 0   | 0 | 0.8   | 0.4  | 3.2 | 0   | 0 | 2.4 | 0.2 | 0.8  | 0 |
| 59 | 2   | 1.6 | 0   | 0.4 | 0   | 4    | 2 | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 0   | 3.2  | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4   | 0.2  | 3.4 | 0.8 | 0 | 3.2 | 0.2 | 0    | 0 |
| 60 | 2   | 1.6 | 0   | 0.4 | 0   | 4    | 1 | 1.6 | 0.6 | 0.4 | 0   | 3.6 | 1   | 2.4  | 0 | 0 | 0   | 3.8 | 2 | 0.8 | 0 | 0.4   | 0.2  | 3.4 | 0.8 | 0 | 2.4 | 0   | 1.6  | 1 |
| 61 | 3   | 0.8 | 0   | 0.4 | 0   | 4.2  | 2 | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 0   | 3.2  | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4   | 0.2  | 3.4 | 0.8 | 0 | 3.2 | 0.2 | 0    | 1 |
| 62 | 1   | 0.8 | 0.6 | 0   | 0   | 2.4  | 2 | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 0   | 3.2  | 0 | 0 | 0   | 3.6 | 2 | 0   | 0 | 0.8   | 0.2  | 3   | 0   | 0 | 3.2 | 0.2 | 0    | 0 |
| 63 | 2   | 0.8 | 0   | 0.8 | 0   | 3.6  | 2 | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 0   | 3.2  | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4   | 0.2  | 3.4 | 0.8 | 0 | 3.2 | 0.2 | 0    | 0 |
| 64 | 2   | 0.8 | 0   | 0.4 | 0.2 | 3.4  | 1 | 1.6 | 0.6 | 0.4 | 0   | 3.6 | 0   | 3.2  | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4   | 0.2  | 3.4 | 0.8 | 0 | 3.2 | 0   | 1.6  | 1 |
| 65 | 3   | 0.8 | 0.6 | 0.8 | 0   | 5.2  | 3 | 0   | 0   | 0.4 | 0.2 | 3.6 | 1   | 2.4  | 0 | 0 | 0   | 3.8 | 2 | 0   | 0 | 0.4   | 0.4  | 2.8 | 0   | 0 | 2.4 | 0.2 | 0    | 0 |
| 66 | 2   | 0   | 0.6 | 0.4 | 0.2 | 3.2  | 2 | 0.8 | 0   | 0.8 | 0   | 3.6 | 2   | 1.6  | 0 | 0 | 0   | 4   | 2 | 0   | 0 | 0.8   | 0.2  | 3   | 0   | 0 | 1.6 | 0   | 0.8  | 0 |
| 67 | 2   | 0.6 | 0.4 | 0.5 | 0.1 | 3.56 | 1 | 0.5 | 0.4 | 0.5 | 0.1 | 2.4 | 0.6 | 2.72 | 0 | 0 | 0   | 3.7 | 2 | 0.3 | 0 | 0.56  | 0.24 | 3.1 | 0.3 | 0 | 2.7 | 0.1 | 0.48 | 1 |
| 68 | 3   | 0.8 | 0   | 0.4 | 0   | 4.2  | 2 | 1.6 | 0   | 0.4 | 0   | 4   | 0.7 | 2.62 | 0 | 0 | 0   | 3.7 | 2 | 0.4 | 0 | 0.512 | 0.25 | 3.1 | 0.4 | 0 | 2.6 | 0   | 1.6  | 0 |
| 69 | 1   | 1.6 | 0   | 0.4 | 0.2 | 3.2  | 1 | 0.8 | 0.6 | 0.4 | 0   | 2.8 | 0   | 3.2  | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4   | 0.2  | 3.4 | 0.8 | 0 | 3.2 | 0   | 0.8  | 1 |
| 70 | 2   | 1.6 | 0   | 0.4 | 0   | 4    | 2 | 0.8 | 0.6 | 0.4 | 0   | 3.8 | 0   | 3.2  | 0 | 0 | 0   | 3.6 | 3 | 0   | 0 | 0.4   | 0.2  | 3.6 | 0   | 0 | 3.2 | 0   | 0.8  | 1 |
| 71 | 1   | 1.6 | 0   | 0.4 | 0.2 | 3.2  | 2 | 0.8 | 0   | 0.4 | 0.2 | 3.4 | 1   | 2.4  | 0 | 0 | 0   | 3.8 | 2 | 0   | 0 | 0.8   | 0.4  | 3.2 | 0   | 0 | 2.4 | 0.2 | 0.8  | 1 |
| 72 | 2   | 1.6 | 0   | 0.4 | 0   | 4    | 2 | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 0   | 3.2  | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4   | 0.2  | 3.4 | 0.8 | 0 | 3.2 | 0.2 | 0    | 1 |
| 73 | 2   | 1.6 | 0   | 0.4 | 0   | 4    | 1 | 1.6 | 0.6 | 0.4 | 0   | 3.6 | 1   | 2.4  | 0 | 0 | 0   | 3.8 | 2 | 0.8 | 0 | 0.4   | 0.2  | 3.4 | 0.8 | 0 | 2.4 | 0   | 1.6  | 1 |
| 74 | 1.5 | 0.8 | 0   | 0.4 | 0   | 2.7  | 2 | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 0   | 3.2  | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4   | 0.2  | 3.4 | 0.8 | 0 | 3.2 | 0.2 | 0    | 1 |
| 75 | 3   | 0.8 | 0.6 | 0   | 0   | 4.4  | 2 | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 0   | 3.2  | 0 | 0 | 0   | 3.6 | 2 | 0   | 0 | 0.8   | 0.2  | 3   | 0   | 0 | 3.2 | 0.2 | 0    | 1 |
| 76 | 2   | 0.8 | 0   | 0.8 | 0   | 3.6  | 2 | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 0   | 3.2  | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4   | 0.2  | 3.4 | 0.8 | 0 | 3.2 | 0.2 | 0    | 1 |
| 77 | 2   | 0.8 | 0   | 0.4 | 0.2 | 3.4  | 1 | 1.6 | 0.6 | 0.4 | 0   | 3.6 | 0   | 3.2  | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4   | 0.2  | 3.4 | 0.8 | 0 | 3.2 | 0   | 1.6  | 1 |
| 78 | 2   | 0.8 | 0   | 0.8 | 0   | 3.6  | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 0   | 3.2  | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4   | 0.2  | 3.4 | 0.8 | 0 | 3.2 | 0   | 0    | 1 |
| 79 | 3   | 1.6 | 0   | 0   | 0   | 4.6  | 2 | 0.8 | 0   | 0.4 | 0.2 | 3.4 | 2   | 3.2  | 0 | 0 | 0   | 5.6 | 1 | 0.8 | 0 | 0.4   | 0.4  | 2.6 | 0.8 | 0 | 3.2 | 0.2 | 0.8  | 1 |
| 80 | 2   | 0.8 | 0   | 0.4 | 0.2 | 3.4  | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 0   | 3.2  | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0     | 0.4  | 3.2 | 0.8 | 0 | 3.2 | 0   | 0    | 0 |
| 81 | 2   | 0.8 | 0   | 0.8 | 0   | 3.6  | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 0   | 3.2  | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4   | 0.2  | 3.4 | 0.8 | 0 | 3.2 | 0   | 0    | 0 |
| 82 | 2   | 0.8 | 0   | 0.4 | 0.2 | 3.4  | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 0   | 3.2  | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0     | 0.4  | 3.2 | 0.8 | 0 | 3.2 | 0   | 0    | 0 |
| 83 | 1   | 1.6 | 0   | 0.4 | 0.2 | 3.2  | 2 | 0.8 | 0.6 | 0.4 | 0   | 3.8 | 2   | 1.6  | 0 | 0 | 0.2 | 3.8 | 2 | 0.8 | 0 | 0.4   | 0.2  | 3.4 | 0.8 | 0 | 1.6 | 0   | 0.8  | 0 |

|    |   |     |     |     |     |     |   |     |     |     |     |     |   |     |   |   |     |     |   |     |   |     |     |     |     |   |     |     |     |   |
|----|---|-----|-----|-----|-----|-----|---|-----|-----|-----|-----|-----|---|-----|---|---|-----|-----|---|-----|---|-----|-----|-----|-----|---|-----|-----|-----|---|
| 84 | 2 | 0.8 | 0   | 0.8 | 0   | 3.6 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 3.2 | 0   | 0   | 0 |
| 85 | 1 | 1.6 | 0   | 0.4 | 0.2 | 3.2 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 2 | 1.6 | 0 | 0 | 0.2 | 3.8 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 1.6 | 0   | 0   | 1 |
| 86 | 2 | 0.8 | 0   | 0.4 | 0.2 | 3.4 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0   | 0.4 | 3.2 | 0.8 | 0 | 3.2 | 0   | 0   | 1 |
| 87 | 4 | 0.8 | 0.6 | 0.4 | 0   | 5.8 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 2 | 1.6 | 0 | 0 | 0.2 | 3.8 | 1 | 0.8 | 0 | 0.8 | 0.2 | 2.8 | 0.8 | 0 | 1.6 | 0   | 0   | 0 |
| 88 | 2 | 2.4 | 0   | 0   | 0   | 4.4 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 2 | 1.6 | 0 | 0 | 0   | 4   | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 1.6 | 0   | 0   | 0 |
| 89 | 1 | 1.6 | 0   | 0.4 | 0.2 | 3.2 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 2 | 1.6 | 0 | 0 | 0.2 | 3.8 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 1.6 | 0   | 0   | 1 |
| 90 | 1 | 1.6 | 0   | 0.4 | 0.2 | 3.2 | 2 | 0.8 | 0.6 | 0.4 | 0   | 3.8 | 2 | 3.2 | 0 | 0 | 0   | 5.6 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 3.2 | 0   | 0.8 | 0 |
| 91 | 2 | 1.6 | 0   | 0.4 | 0   | 4   | 2 | 0.8 | 0.6 | 0.4 | 0   | 3.8 | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 3 | 0   | 0 | 0.4 | 0.2 | 3.6 | 0   | 0 | 3.2 | 0   | 0.8 | 0 |
| 92 | 4 | 1.6 | 0   | 0.4 | 0.2 | 6.2 | 2 | 0.8 | 0   | 0.4 | 0.2 | 3.4 | 1 | 2.4 | 0 | 0 | 0   | 3.8 | 2 | 0   | 0 | 0.8 | 0.4 | 3.2 | 0   | 0 | 2.4 | 0.2 | 0.8 | 1 |
| 93 | 2 | 1.6 | 0   | 0.4 | 0   | 4   | 2 | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 3.2 | 0.2 | 0   | 0 |
| 94 | 2 | 1.6 | 0   | 0.4 | 0   | 4   | 1 | 1.6 | 0.6 | 0.4 | 0   | 3.6 | 1 | 2.4 | 0 | 0 | 0   | 3.8 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 2.4 | 0   | 1.6 | 1 |
| 95 | 2 | 0.8 | 0   | 0.4 | 0   | 3.2 | 2 | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 3.2 | 0.2 | 0   | 1 |
| 96 | 3 | 0.8 | 0.6 | 0   | 0   | 4.4 | 2 | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0   | 0 | 0.8 | 0.2 | 3   | 0   | 0 | 3.2 | 0.2 | 0   | 1 |
| 97 | 2 | 0.8 | 0   | 0.8 | 0   | 3.6 | 2 | 0   | 0.6 | 0.4 | 0.2 | 3.2 | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 3.2 | 0.2 | 0   | 1 |
| 98 | 2 | 0.8 | 0   | 0.4 | 0.2 | 3.4 | 1 | 1.6 | 0.6 | 0.4 | 0   | 3.6 | 0 | 3.2 | 0 | 0 | 0   | 3.6 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 3.2 | 0   | 1.6 | 1 |
| 99 | 1 | 1.6 | 0   | 0.4 | 0.2 | 3.2 | 3 | 0   | 0.6 | 0.4 | 0   | 4   | 2 | 1.6 | 0 | 0 | 0.2 | 3.8 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 1.6 | 0   | 0   | 1 |
| ## | 3 | 0.2 | 0   | 0.4 | 0.2 | 3.8 | 2 | 0.8 | 0.6 | 0.4 | 0   | 3.8 | 2 | 3.2 | 0 | 0 | 0   | 5.6 | 2 | 0.8 | 0 | 0.4 | 0.2 | 3.4 | 0.8 | 0 | 3.2 | 0   | 0.8 | 0 |