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Accounting Classification in the Era of International Financial Reporting Standards: The case of Africa

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Abstract

This paper presents the first empirical test of a hypothetical classification of financial reporting in Africa based on *de facto* or actual practices as opposed to *de jure* rules. Three multivariate techniques (principal component analysis, cluster analysis, and multidimensional scaling) were used to analyze the accounting policies of large listed companies in Africa that are required by law to adopt International Financial Reporting Standards (IFRS). It was found that there is a dichotomy between the IFRS policy choices of companies in Francophone and Lusophone countries, on the one hand, and those in common law jurisdictions, on the other, thus confirming the two-group classification schemes proposed by Elad (2015) and Nobes (1983). These findings have important policy implications, particularly in the context of recent recommendations of the World Bank and the International Monetary Fund that large entities in Africa adopt IFRS.

Key words: Accounting classifications; IFRS practices; CFA franc zone; OHADA accounting system; Plan Comptable Général, SYSCOHADA

1. Introduction

Several studies have suggested that there are opportunities for systematic differences of practice to exist within IFRS usage (Nobes, 2006; 2013) and that different national versions of IFRS practice have emerged in some jurisdictions as a new feature of comparative international accounting. In particular, Nobes (2006, 2011, 2014) developed and tested some hypotheses on the persistence of national differences under IFRS in industrialized countries and invited other researchers to investigate this issue further, thus opening up a new research agenda. The present study is a direct response to Nobes' call for further research.

This paper seeks to contribute to the international accounting literature in two ways. First, unlike earlier accounting classification studies, this paper attempts to classify accounting systems in Africa using data on actual practices as opposed to rules and regulations. This is important because a number of recent studies have painted a somewhat misleading picture of the extent to which IFRS have been adopted in some national settings simply because they relied solely on accounting rules and regulations. One classic example is a paper by Khlif et al. (2020), which concluded that the extent of convergence with IFRS in Algeria is higher than in Morocco and Tunisia. Contrary to this claim, the level of adoption of IFRS appears to be higher in Morocco than in Algeria or Tunisia because Morocco is the only North African country that allows listed companies to use IFRS in consolidated financial statements. IFRS are currently prohibited for statutory reporting purposes in Algeria and Tunisia (Deloitte, 2022). In addition, IAS 1 (paragraph 16) makes it clear that an entity shall not describe financial statements as complying with IFRS unless the financial statements comply with all the requirements of IFRS. Khlif et al. (2020) inadvertently convey the impression that Algeria, Morocco, and Tunisia have adopted international standards, whereas IFRS have only influenced (to some extent) the development of national generally accepted accounting principles (GAAP) in these countries. Khlif et al. used data from the PricewaterhouseCoopers (PwC, 2011) survey of accounting

regulations to support their key arguments. The survey report states on page 202 that IFRS are "required for consolidated and standalone/separate financial statements" in Algeria. However, the 2015 edition of the report now states unequivocally that IFRS are "neither required nor permitted in Algeria." (PwC, 2015, p. 229). This point is re-emphasized in the most recent (2017) edition, which also states that "IFRS are neither required nor permitted in Algeria" (PwC, 2017, p. 205).

Furthermore, Elad (2015, p. 94) used PwC (2011) survey data to misclassify Algeria under an Anglo-American accounting cluster. Another recent paper by Boolaky et al. (2020, p. 34) states erroneously that IFRS were required for all companies in Senegal in 2014. These developments call to mind an editorial by Zeff (2016), curiously entitled, "In the literature but wrong: Switzerland and the adoption of IFRS," in which he cautioned that errors in the literature should not be perpetuated in future work solely because they are found in previously published research. These concerns were echoed by Nobes (2018), who suggested that the problems could be alleviated if accounting classifications were based on *de facto* (or actual) practices rather than on *de jure* rules and regulations. Accordingly, the present study uses data on actual practices to test the validity of the hypothetical classification of accounting systems in Africa proposed by Elad (2015).

The second contribution of this paper is that it extends previous research by investigating whether systematic differences of practice exist within IFRS usage in Africa. Some of the hypotheses formulated by Nobes (2006, 2013) are tested in a developing country context to verify if the findings are generalizable. Africa provides an ideal setting for this study because, despite ongoing attempts at harmonization, the Anglo-American common law and accounting systems still coexist with the continental European accounting systems of Francophone, Lusophone, and Spanish-speaking countries.

Overall, the study finds that a two-group classification (Anglo-American School and Franco-German School) can be discerned in the IFRS practices of listed companies in Africa.

The results reveal that there are systematic national differences in the accounting policy choices of listed companies in Africa that are supposed to be using the same rules (IFRS). The existence of deep-seated differences that are resistant to change indicates clearly that it is unlikely that international agencies such as the International Finance Corporation (IFC), World Bank, and the International Monetary Fund (IMF) can achieve the goal of comparability in international financial reporting in Africa (see IFC, 2007, p. 2).

The remainder of this paper is organized as follows: Section 2 sets the scene by reviewing the international accounting classification literature and its implications for assessing the IFRS adoption status of African countries in the context of recent work on a range of topics such as measurement of firm value, foreign direct investment, diffusion of innovation, and corruption. Section 3 reviews Elad's (2015) classification of financial reporting in Africa and presents the theoretical framework and hypotheses. Section 4 discusses the methodology and results. Finally, Section 5 summarizes the entire paper with a comprehensive conclusion.

2. Literature review

Over the past century, there have been many attempts at classification in international accounting. This literature review is in two main parts. The first part provides a concise review of the more general literature on accounting classification, paying particular attention to the methods used, while the second part uses a framework for classifying the extent of adoption of IFRS, developed by Nobes (2022, forthcoming), to analyze the relevant African accounting literature.

*** Insert Table 1 about here ***

4

2.1 International classification of financial reporting

The earliest classifications relied mainly on judgment, focusing on influences on accounting, or impressions of practices of companies, in major industrialized Western nations (e.g., Hatfield, 1911; Mueller,1967; Seidler, 1967). However, following the publication of surveys of accounting practices around the world by Price Waterhouse (1973, 1975, 1979), researchers began to undertake more rigorous empirical classification studies involving many countries using multivariate statistical techniques (Da Costa et al. 1978; Frank, 1979; Nair & Frank, 1980; Goodrich, 1982).

Unlike the early subjective classifications, the second generation of accounting classification research from the late 1970s onward was largely based on forms of principal component analysis, cluster analysis, and multidimensional scaling (see Table 1 for a summary of the major studies). Despite this progress, a major shortcoming of the empirical studies relates to the quality of the Price Waterhouse survey data, which was found to be unsatisfactory for the purpose of classification due to many errors. Nobes (1983) points out that one limitation was the exaggeration of differences between the United States and the United Kingdom because these countries were more familiar to compilers of the 1973 survey questions. Additionally, all the survey questions were given equal weight, and as a result, important questions were overshadowed by trivial ones. A further criticism of the Price Waterhouse survey data is that they were not specifically compiled for the purpose of classification.

In general, the studies in Table 1 fall into two categories: extrinsic classifications derived from external influences on accounting (e.g., culture, economic factors, or modes of regulation) and intrinsic classifications based on accounting itself (Roberts, 1995). Typical examples of extrinsic classification in Table 1 are Hatfield (1911), Mueller (1967), Seidler (1967), American Accounting Association (AAA, 1977), Puxty et al. (1987), Leuz et al. (2003) and Leuz (2010). Most intrinsic classifications used surveys of accounting rules and practices by

Price Waterhouse (e.g., Nair & Frank, 1980; Goodrich, 1982) or rules by KPMG (e.g., d'Arcy, 2001) to establish groups of countries with no hierarchy, which might indicate how subgroups are related to each other.

It was against this backdrop that Nobes (1983) developed a novel approach, in the intrinsic category, that introduced hierarchical integrity for the first time, thereby allowing more pronounced discrimination and subtlety among accounting systems and countries. Nobes' (1983) classification is arguably the most popular classification scheme that has stood the test of time. It has appeared in many recent textbooks (e.g., Alexander et al., 2020, p. 33) and has been translated into several languages, including French (Jaouen & Le Roy, 2013, p. 19), Spanish (Daniels et al., 2004, p. 576), and Italian (Cordazzo, 2008, p. 2). Nonetheless, several critics have disputed its validity, particularly the dichotomous split of countries into Anglo-American and continental European models, in the current era of globalization and IFRS (e.g., Alexander & Archer, 2000; Cairns, 1997; d'Arcy, 2001). Nobes (2003, 2011) contends that those who dispute the two-group classification fail to find it because they either concentrate on the regulatory system rather than on accounting practices (e.g., Alexander & Archer, 2000), concentrate on nonrepresentative accounting (i.e., the consolidated statements of a few large companies in continental Europe, e.g., Cairns, 1997), or use erroneous data (e.g., d'Arcy, 2001).

Another criticism of Nobes' classification of financial reporting systems is its exclusive focus on Western countries with developed stock markets. To some extent, Nobes (2014, Appendix II) addressed this concern in an expanded classification scheme that now includes communist countries and some African, Latin American, and Caribbean countries. However, Nobes omits some countries that were included in earlier classifications, "due to a lack of knowledge (which inspires caution) rather than a weakness of the method of classification" (Nobes, 2014, Appendix II). One such country is Zaire, a former Belgian colony, which changed its name to the Democratic Republic of the Congo in 1997 and is currently using a French-influenced accounting system, as explained in Section 3 of this paper. While this

expanded classification scheme includes Kenya, Nigeria, and Zimbabwe, it does not include any Francophone, Lusophone, or Spanish-speaking African country. Elad's (2015) hypothetical classification, which is presented in Section 3, sought to address this limitation by adapting Nobes' model to the specific context of African countries.

2.2 Classification of IFRS adoption types in Africa: new data, old problems

In recent years, there has been a resurgence of empirical studies that measure the extent of adoption of IFRS in Africa on either an ordinal scale or, more often, as a dummy variable. It is shown here that most of these studies use erroneous data on the IFRS adoption status of some African countries. A useful starting point for our analysis is Song and Trimble's (2022a) classification scheme, which was used to create a comprehensive dataset on the IFRS adoption status of 195 countries from 1990 to 2019. This dataset was constructed using information from a variety of sources, including the IASB's jurisdictional profiles, Deloitte's IAS Plus website, PwC's IFRS adoption surveys, the World Bank's Reports on Standards and Codes (ROSC), the International Federation of Accountants' (IFAC) member profile surveys, and national regulator websites.

A more refined version of Song and Trimble's (2022a) scheme for classifying the extent of IFRS adoption was proposed by Nobes (2022, forthcoming), as shown in Table 2. This version is used here as a benchmark for assessing the quality of the data on accounting in Africa in three recent papers.

*** Insert Table 2 about here ***

The first paper is a study by Agyei-Boapeah et al. (2020) that investigated the impact of the adoption of IFRS on firm value in seven African countries over the period 2000-2015,

namely, Botswana, Ivory Coast, Egypt, Ghana, Morocco, Nigeria, and South Africa. The results of this study show that the adoption of IFRS has a positive impact on firm value, especially when IFRS are fully implemented without any modifications. The study also revealed that the positive impact of IFRS adoption on firm value is more pronounced in countries with a greater commitment to the rule of law.

A major concern with this study is that the IFRS adoption data for the Ivory Coast and Morocco are incorrect. Agyei-Boapeah et al. (2020, Table 1, p. 243) classify the Ivory Coast incorrectly under "full adoption," whereas over the period 2000-2015, IFRS were prohibited in the OHADA (*l'Organisation pour l'Harmonisation en Afrique du Droit des Affaires*) zone, of which the Ivory Coast is a member (see, e.g., Elad, 2015; PwC, 2015; Degos et al., 2019; Song & Trimble, 2022a, 2022b). It is possible that this misclassification is the result of a typing error because Agyei-Boapeah et al. go on to state in the last paragraph on Page 254: "While all our sample countries fully adopted IFRS in its entirety, Ivory Coast and Egypt implemented a partial/modified version of IFRS." Even then, their classification is still incorrect because the Ivory Coast was not using a partial/modified version of IFRS during the period 2000-2015 (Song & Trimble, 2022b).

However, we are aware that the Ivory Coast championed a revision of the OHADA accounting system in 2013, which incorporated some IFRS, resulting in a new *système comptable ouest africain* (Syscoa), known as the *Syscoa Révisé*, that was scheduled for implementation in 2015. While it is correct to describe the *Syscoa Révisé* as a partial/modified version of IFRS, it is important to note that it was never implemented in practice because the OHADA Common Court of Justice and Arbitration (CCJA), a supranational court responsible for interpretating OHADA pronouncements, promptly issued Opinion No. 03/2015 of 5th November 2015 declaring that member states are not allowed to use the *Syscoa Révisé*. The government of the Ivory Coast was compelled to endorse this Opinion and abandon the reform (Savana, 2016; Bampoky, 2019, p. 49). Therefore, it is incorrect to claim that there was full or

partial adoption of IFRS in the Ivory Coast during the period 2000-2015. The following extract

from KPMG (2016, p. 4) sums up this discussion:

> The revised SYSCOA [*Syscoa Révisé*] was put in place since 2014 to include certain notions of IFRS. The new system was intended to apply from 2015. However, the Ivorian government decided to suspend the application of the revised SYSCOA (Circular No. 017/01-16). Therefore, the financial statements for the fiscal year ended 31 December 2015 must be submitted in accordance with the rules of the OHADA accounting system.

Agyei-Boapeah et al. (2020, p. 242) also state that Cameroon and Morocco are partial/modified

adopters of IFRS. This is incorrect because Cameroon and all other OHADA-treaty states were

not full or partial/modified adopters of IFRS during the period covered by their study (i.e.,

2000-2015). Additionally, one might use Table 2 to classify Morocco as IFRS-IASB (required

for financial institutions), IFRS-IASB (permitted for consolidated financial statements), and

Local GAAP (required for standalone statutory accounts). The basis for this classification is

the following extract from PwC's (2017, p. 229) report for Morocco:

> IFRS is permitted for consolidated financial statements. IFRS is only required for consolidated financial statements of banks and financial institutions, whether listed or not … IFRS and IFRS for SMEs are prohibited for standalone statutory financial statements. All standalone statutory accounts must be prepared under Moroccan GAAP. Other entities are allowed to choose between local GAAP and IFRS for their consolidated financial statements, but most of them are preparing their consolidated financial statements under local GAAP.

Hence, listed companies in Morocco will use either the full IFRS-IASB or local GAAP, which

differ significantly from IFRS. It is therefore unlikely that all 34 Moroccan listed companies

included in the study (see Agyei-Boapeah et al., 2020, p. 242) were partial adopters of IFRS,

as claimed by its authors.

Another study by Nnadi and Soobaroyen (2015) finds that the adoption of IFRS has a

negative impact on foreign direct investment in African countries. Their results show that

institutional factors pertaining to the rule of law, the legal system, and levels of corruption,

rather than IFRS adoption, appear to be more important in enhancing or sustaining foreign

direct investment in Africa. Interestingly, all the countries that are classified under "full

adoption of IFRS" (see Nnadi & Soobaroyen, 2015, Table 2, p. 234) are Anglophone. However, Cameroon is classified under "partial adoption," whereas Gabon, Benin, Burkina Faso, and Mali are classified under "modified adoption," although all these countries are in the franc zone. The study does not seem cognizant of the fact that OHADA is the only supranational regulatory body that sets accounting standards applicable in the franc zone (Elad, 2015; Song & Trimble, 2022a, 2022b). We could not find any justification for this classification because, in 2009, IFRS were prohibited in all the OHADA-treaty states (Elad, 2015). Additionally, several World Bank reports have indicated that the sectoral chart of accounts for banks and financial institutions in franc zone countries is not compliant with international standards. In fact, Song and Trimble's comprehensive dataset reveals that IFRS only became mandatory for listed companies in OHADA jurisdictions in 2019.

A third recent study that illustrates some of the problems associated with the classification of IFRS adoption types in Africa is El-Helaly et al.'s (2020) investigation of the influence of national corruption on the decision to adopt international accounting standards. The basic assumption that underpins the paper is that countries with high levels of corruption are likely to resist the adoption of IFRS because sound and transparent financial reporting may expose corruption, making it difficult for unscrupulous politicians and bureaucrats to engage in corrupt practices. They found, *inter alia*, that the level of corruption is negatively associated with the speed and extent to which a country has adopted IFRS. However, the study has some data limitations that warrant attention.

First, El-Helaly et al. (2020) state that they excluded European countries from their analysis because the European Union's Regulation 1606/2002 mandated the adoption of IFRS by listed companies, implying that individual member states do not have discretion over their IFRS adoption decisions. Following this reasoning, it is not clear why they included the following franc zone countries that do not have discretion over IFRS adoption decisions because such decisions are made at a supranational level by OHADA: Benin, Burkina Faso,

Ivory Coast, Mali, Niger, and Togo (see, e.g., Elad 2015). These countries are not able to decide whether to adopt, or not, IFRS because they relinquished their power to regulate accounting practices to OHADA.

Second, the data in El-Helaly et al. (2020, Table 1, p. 4) indicate that a score of 3 denotes "full adoption of IFRS." This score is assigned to countries that require all listed firms to use IFRS. One shortcoming of this score is that it makes no distinction between (i) countries that require only listed companies to report under IFRS and (ii) countries where IFRS have replaced domestic GAAP for all reporting. Countries in both categories are assigned the maximum score of 3, although they have adopted IFRS to differing extents. Furthermore, the dataset concerns only companies that are listed on a stock exchange, whereas many developing countries in this study have few listed companies, few private investors, or small and inactive capital markets, suggesting that emphasis should be on financial reporting in the context of large state-owned entities and parastatal organizations. In this regard, it has been observed that a great deal of bureaucratic corruption in developing countries takes place in the public sector. Interestingly, another recent study by Tawiah (2021) covering 77 developing countries between 2005 and 2017 found that the adoption of International Public Sector Accounting Standards (IPSAS) and, by implication, IFRS reduces demand-side corruption. Tawiah (2021) concludes that the adoption of IFRS can serve as a useful mechanism to prevent corruption in developing countries.

2.3 Implications of the literature review

The key issues emerging from this brief review of the relevant literature are reminiscent of the observations made by Nobes (2018, p. 252) that:

> First, for classification, if researchers purport to be studying accounting differences, then the attributes of accounting practices are probably more relevant than those of accounting rules … Similarly, when choosing an independent variable in accounting studies, it is probably more productive to focus on one that is proximate to financial reporting. Law is closer than culture, and if a law variable is used, one relating to

corporate law or to enforcement of financial reporting regulations may be appropriate. Second, one must apply scepticism to one's own knowledge. When writing about a foreign country, there is a strong chance that the researcher will get something wrong. It is important to establish an international network of colleagues who can check the facts.

The independent variables used in recent studies on IFRS adoption in Africa include gross domestic product per capita, inflation, human capital, rule of law, regulatory quality, change in imports, change in exports, openness to trade and levels of corruption. Most of these variables are clearly not proximate to financial reporting, as noted in the above passage by Nobes. In contrast to studies that identify many possible reasons for international differences in financial reporting (e.g., law, taxation, culture, education, economic development, inflation, etc.), Nobes (1998) developed a model that shows that these differences could largely be explained by only two factors: financing systems and colonial inheritance. The next section uses Nobes' (1998) general model of the reasons for international differences in financial reporting as the theoretical framework from which three hypotheses are derived.

3. Hypothetical classification of financial reporting in Africa

Elad (2015) periodized the development of accounting in Africa into three epochs, namely, the colonial era, the early postcolonial period (1967-1998), and the current era of globalization (1998 onward). During the colonial era, African countries were using the accounting system of the imperial powers who partitioned and colonized the continent, as illustrated in Figure 1. Essentially, these accounting systems can be classified broadly into two groups: the Anglo-American (Class A) judgmental accounting approach and the Franco-German (Class B) uniform accounting model.

*** Insert Figure 1 about here ***

However, the early postcolonial period witnessed some modest attempts at developing accounting systems that are tailored to the needs of newly independent emerging nations following the formation of the African Accounting Council (AAC) in 1979. The AAC established a new accounting system called SCAR-B (*Système Comptable Africain de Référence de Base*) that was intended to serve as a blueprint for reform on the continent. However, SCAR-B turned out to be more or less a replica of a uniform chart of accounts (*plan comptable général* or PCG) designed by the now defunct *Organisation Commune Africaine et Malgache* (OCAM) in 1970. The classification in Figure 1 shows that the OCAM PCG was adopted by all the member states of the Customs and Economic Union of Central Africa, or *Union Douanière et Économique de l'Afrique Centrale* (UDEAC), which was reconstituted in 1994 as the Central African Economic and Monetary Community or CEMAC (*Communauté Économique et Monétaire de l'Afrique Centrale*). The OCAM PCG is considered to be a landmark document in the history of uniform charts of account that not only served as a forerunner to the modern French PCGs of 1982 and 1999 but also influenced the development of national and regional charts of account in postcolonial Africa, heralding the birth of what is now referred to as the "Francophone school of accounting" (see Forrester, 1983; Kinzonzi, 1984; Causse, 1999; Gouadain & Wade, 2002, p 111; Pintaux, 2002, p. 45; Gouadain, 1995; Degos et al., 2019, p. 82).

However, many African countries began to experience severe economic and financial crises during the late 1990s and were compelled to implement structural adjustment programs as required by the World Bank and the IMF. The World Bank recognized IFRS as one of the international standards and codes that promote good governance, transparency and public accountability within its market-oriented reform program involving privatization, public sector downsizing, deregulation and trade liberalization (IMF, 2000, 2003). All large entities, privatized public utilities and parastatal organizations in countries that receive structural adjustment assistance from the World Bank and the IMF were expected to prepare their

financial statements in conformity with IFRS (see, e.g., IMF, 2000, 2010; World Bank, 2004, 2005, 2009, 2010).

*** Insert Figure 2 about here ***

The World Bank-inspired reforms in the current era of globalization and IFRS occasioned a shift from the classification scheme in Figure 1 to that in Figure 2. One important consequence of the World Bank's neoliberal policy discourse was the need to modernize the antiquated variants of French, Spanish, and Portuguese PCGs in some African countries in the context of global strategies for the convergence of domestic accounting principles with IFRS (United Nations, 1991, p. 4). Such external pressures led to the development of the OHADA PCG for the franc zone countries (Ollier, 1999; Gouadain, 2000; Elad 2004, 2015). All of these countries have a civil law tradition, except for the Anglophone regions of Cameroon, which have the common law legal system. The World Bank did not simply make recommendations for accounting reform in the franc zone countries; it actively provided technical support to the regional accounting council for West Africa that developed a revised version of the OHADA PCG that incorporated many IFRS, known the *Syscoa Révisé*, as mentioned earlier in this paper. Unfortunately, the *Syscoa Révisé* could not be implemented in practice because, unlike the original version of the OHADA PCG, it did not maintain a strong link between accounting and tax rules. As Savana (2016) explains, accounting practitioners, company directors and tax authorities in the region welcomed the decision to abandon the *Syscoa Révisé*.

Following the failed attempt to reform the OHADA PCG in West Africa, the World Bank intervened directly by providing a US $15 million technical assistance grant to strengthen OHADA's institutional capacity to support investment climate reforms and to promote transparency and comparability in corporate reporting through the adoption of IFRS (World Bank, 2012). The OHADA PCG metamorphosed into a new accounting system called the

Système Comptable OHADA or SYSCOHADA, which was adopted by the Council of Ministers in 2017 (OHADA, 2017a). In essence, the SYSCOHADA is a watered-down version of the *Syscoa Révisé* that incorporates some IFRS but still follows tax rules. It must now be used in separate, or standalone, company financial statements (OHADA, 2017b).

In addition, all listed companies and companies making a public call for capital in OHADA jurisdictions are required to use IFRS effective 1st January 2019. Additionally, Article 81 in Title 4 of the OHADA Uniform Act Relating to Commercial Companies and Economic Interest Groups states that a company is automatically deemed to be making a public call for capital if it has more than 100 shareholders (OHADA, 2016, p.129). This means that companies with more than 100 shareholders are required by law to use IFRS, even if their securities do not trade on a public market. However, there is widespread noncompliance in practice, and very few companies in the OHADA zone have thus far adopted IFRS.

Although SYSCOHADA offers a valuable tool for bookkeeping and a robust template for filling in tax returns, it is still not only incompatible with IFRS but also highly deficient in accounting principles relating to many measurement and valuation issues that are dealt with in detail by Anglo-American accounting pronouncements. IFRS follow the Anglo-American approach, which emphasizes accounting and disclosure requirements that are intended to protect stock market investors (Hellman et al., 2015, p. 172). In contrast, the PCG model is driven by the needs of a wider range of stakeholders, including government (for national income accounting and macroeconomic analysis), tax authorities, creditors, and national statisticians.

3.1 Theoretical framework and hypotheses

The literature suggests many reasons for international differences in financial reporting, e.g., legal systems, taxation, culture, nature of business ownership, inflation, human capital, rule of law, level of education, corruption, etc. Some of these reasons are plausible, while others may not be seen as proximate causes of international differences in accounting. Hence, Wallace and Gernon (1991) lamented the lack of theory in comparative international accounting. Nobes (1998) attempted to address this problem by developing a general model of the reasons for international differences in financial reporting, which is the overarching theoretical framework that underpins the present study.

Essentially, Nobes (1998) contends that international differences in financial reporting could largely be explained by only two factors, namely, financing systems and colonial inheritance. He makes a clear distinction between two types of accounting systems: Class A (strong equity, commercially driven) accounting and Class B (weak equity, government-driven, tax-dominated) accounting. Nobes (2003, p. 99) outlines the distinctive features of Class A: "Anglo-Saxon accounting (compared to other forms of accounting) is oriented toward decision-making by investors; it plays down the measurement of taxable income; it is less worried about prudence; it is more willing to go beyond legal form." He then goes on to argue that culturally dominated countries (e.g., colonies or former colonies) are likely to be using an accounting system based on that of an influential country even if this seems inappropriate to their current commercial needs. Nobes' (1998, p. 178) model is expressed in terms of the following five propositions:

P1: The dominant accounting system in a culturally self-sufficient country with a strong equity-outsider system is Class A.

P2: The dominant accounting system in a culturally self-sufficient country with a weak (or no) equity-outsider system is Class B.

P3: A culturally dominated country has an accounting system imported from its dominating country, irrespective of the strength of its equity-outsider system.

P4: As a country establishes a strong equity-outsider market, its accounting system moves from Class B to Class A.

P5: Outsider companies in countries with weak equity-outsider markets will move to Class A accounting.

The term "outsider system" of corporate governance in these propositions refers to the Anglo-American market-based system that is characterized by dispersed ownership of corporate equity among outside investors, well-developed capital markets, and many shareholders.

The hypothetical classification schemes in Figure 1 and Figure 2 are entirely consistent with the argument that international differences in financial reporting can largely be explained by colonial inheritance and financing systems. Figure 1 shows that culturally dominated countries (i.e., former colonies) are using an accounting system based on that of an influential country even if this seems inappropriate to their current commercial needs. Propositions P3 and P4 above are particularly relevant to the present study.

Nobes' Proposition P3 suggests, for example, that the accounting system in Guinea-Bissau, a former Portuguese colony (and culturally dominated country), is imported from Portugal (i.e., its culturally dominating country). This was true during the early years of independence, as shown in the classification scheme in Figure 1. In fact, Guinea-Bissau was formerly known as Portuguese Guinea and gained independence in 1974 after more than five centuries of Portuguese rule. However, it signed the OHADA treaty in 1993, then adopted the CFA (*Communauté Financière Africaine*) franc in 1997 and changed its accounting system from the Portuguese model to the French-inspired OHADA PCG, thus justifying its classification under "French influence" in Figure 2. Similarly, Equatorial Guinea, a former Spanish colony, abandoned the Spanish accounting system it inherited from colonial rule when it signed the OHADA treaty in 1993. It consequently uses a French-influenced accounting

system. Additionally, Zaire switched from the colonial Belgian accounting system to SCAR-B in the early years of independence, as indicated in Figure 1. However, Zaire changed its name to the Democratic Republic of the Congo in 1997, signed the OHADA treaty in 2012 and was *ipso facto* classified under a French-influenced accounting system, as shown in Figure 2.

While these examples indicate that there have been nuanced changes in the Class B accounting system in Africa over time, which appear inconsistent with Proposition P3, this paper acknowledges that Propositions P3 and P4 are invariably true for most countries. Colonial inheritance, as encapsulated in Nobes' Proposition P3, appears to be a more plausible explanation for different national reactions to IFRS in Africa. It would be interesting to know whether the dichotomous classification in Figure 2 is still discernible in the IFRS practices of listed companies. Based on the foregoing discussion, it is hypothesized that:

H_1: The two-group classification in Figure 2 is discernible in the IFRS practices of listed companies in Africa.

Since Proposition P3 states that a culturally dominated country has an accounting system imported from its dominating country, irrespective of the strength of its equity-outsider financing system, one might expect the deep-seated effects of different financing, tax, and legal systems to affect the accounting policy choices of African companies that have adopted IFRS. Therefore, it is hypothesized that:

H_2: Pre-IFRS differences between national practices have a significant effect on the IFRS financial statements of listed companies in Africa.

In addition, if there are opportunities for systematic differences of practice to exist within IFRS usage, and different national versions of IFRS practice have emerged as a new feature of comparative international accounting, one might expect the pattern of accounting

policy choices of listed companies in Africa to portray a dichotomy between the practices of common law countries and the practices of civil law countries that are influenced by the Franco-German approach. This leads to the following hypothesis:

H_3:   There are systematic differences in the choice of IFRS options between listed companies in civil law jurisdictions and listed companies in common law jurisdictions in Africa.

4. Methodology and results

The validity of Elad's (2015) hypothetical classification scheme in Figure 2 was investigated using three multivariate statistical techniques: (1) principal component analysis, (2) cluster analysis and (3) multidimensional scaling. The list of overt IFRS options that is used in this study was adapted from Nobes (2013, p. 94) as shown in the first column of Table 3. In view of the need to minimize missing data, only IFRS options that are easily observable and apply to virtually all listed companies in Africa were considered. For example, the list of topics does not include IFRS options relating to investment property (IAS 40) or financial instruments (IAS 39, IFRS 9) because they are not applicable to many African companies. One obvious limitation is that some of the topics included in Table 3 are more important than others. This limitation is not seen as a major cause for concern because the purpose of this study is to investigate whether there are systematic differences in the choice of IFRS policy options pointing to the existence of deep-seated differences that are resistant to change. The sampling method, statistical analyses and results are presented below.

*** Insert Table 3 about here ***

4.1 Sampling

This study analyses the accounting policy choices of the largest nonfinancial companies from major jurisdictions in Africa where listed companies are required to adopt IFRS. The initial sample included 245 companies, of which 40 were selected from each of the two largest equity markets, the Nigerian Stock Exchange and the Johannesburg Stock Exchange. Companies with significant foreign influence (e.g., British American Tobacco plc) were not considered. Table 4 provides a breakdown of the number of companies selected by jurisdiction. It includes 15 companies from Zambia, 20 companies from Botswana, 20 companies from Ghana, and 25 companies from Kenya, Morocco, Zimbabwe, and the OHADA zone. In addition, 10 nonfinancial companies domiciled in Mozambique that report in accordance with IFRS and publish their financial statements in English were considered in the final sample because they appear to represent the entire population.

However, a small number of Botswanan, Ghanaian, Moroccan and Zambian companies were excluded from the final sample, as shown in the last column in Table 4, because they were financial institutions or entities whose IFRS financial statements for 2019, or earlier, were not readily available. We also discovered that although all the listed companies in OHADA jurisdictions have been required to adopt IFRS since January 2019, only a small number of nonfinancial companies (8) have thus far complied with this requirement. Accordingly, a total of 214 companies were selected for this study, as indicated in the last column in Table 4.

*** Insert Table 4 about here ***

4.2 Data

Data on IFRS policy options for the 11 topics listed in Table 3 were hand collected from the annual reports of all 214 companies in the final sample as part of a doctoral thesis. Data scoring was checked by research supervisors. The annual reports for 2019 (or earliest available) were used. A summary of the results is presented in Table 3. A cursory inspection of the data indicates that none of the companies from civil law jurisdictions (Morocco, Mozambique and OHADA) valued their property, plant and equipment at fair value. The data also show that very few companies from civil law jurisdictions in Africa use the "by function" income statement format and that none of the companies from Morocco and the OHADA zone adopted the FIFO method of inventory valuation. There are at least three main reasons why these results support Hypothesis H_2 that pre-IFRS national rules influence the IFRS policy choices of listed companies in Africa.

First, the government of Mozambique issued a decree in 2009 that introduced IFRS into the national chart of accounts (*Plano Geral de Contabilidade* or PGC). While this legislation allows companies to prepare their income statements using a classification of costs by function, it nonetheless emphasizes that the normal income statement format in Mozambique is based on the "by nature" approach (see Deloitte & Touche, 2017, p. 329, Title II, Articles 13 and 14). Additionally, Article 91 of the new accounting law in the OHADA zone requires that the "by nature" income statement format be adopted by all reporting entities (OHADA, 2017b, p. 55, Article 91). Interestingly, there is a similar regulation in Morocco where the by nature approach is the only income statement format allowed by law under Section 2a of the *Code Général de la Normalisation Comptable* (CGNC, 1986) captioned *Analyse par nature des charges et produits*. Hence, it may be concluded that the presentation of income statements in civil law jurisdictions in Africa is normally based on the by nature approach and that this established

pre-IFRS practice appears to have influenced IFRS policy choice on this topic in Francophone and Lusophone countries. In contrast, the common law countries, which have a long tradition of preparing income statements by function, continue to use this approach under IFRS.

The second area where pre-IFRS national practices have had a significant effect on IFRS financial statements relates to the valuation of property, plants, and equipment (see topic 10 in the penultimate row in Table 3). Unlike companies in common law countries, none of the companies in civil law jurisdictions valued their property, plant and equipment at fair value. Both SYSCOHADA and Moroccan GAAP prohibit fair value measurement and require tangible fixed assets to be valued at cost.

The third reason is that the pre-IFRS practices in civil law countries tend to be based on uniform formats prescribed by mandatory charts of account, which must be adopted in all statutory filings. Consequently, all companies must, by necessity, follow the same approach. This explains why the three civil law jurisdictions in this study have extreme scores of 100 or zero for many of the policy options in Table 3. For example, companies tend to present very detailed balance sheets wherein assets appear on one side and liabilities and shareholders' equity on another side, justifying a score of 100 for topic 4 in Table 3. Another example is that cash flow statements are based on the indirect method in uniform charts of account, resulting in a perfect score of 100 for topic 6 in each of the three civil law jurisdictions, despite the Mozambican GAAP giving companies the option to report cash flows from operating activities using the direct method. A final example relates to comprehensive income. The notion of comprehensive income (topic 9 in Table 3) does not exist in SYSCOHADA or in Moroccan GAAP, and companies tend to present it in two separate statements in their IFRS accounts. This is in contrast to most of the common law countries where a substantial number of companies present an income statement that combines all components of profit or loss and other comprehensive income in a single statement. It is interesting to note that during the revision of IAS 1, the IASB favored the single statement approach. However, following intense

lobbying by continental European companies (Zeff, 2007, p. 301), entities now have a choice of presenting the statement of comprehensive income in a single statement, or as two statements, under IAS 1 (revised). Zeff (2007, pp. 300-301) deplored this kind of pressure on the IASB, which he sees as an obstacle to global financial reporting comparability and convergence.

Notably, the pre-IFRS accounting rules in two of the three civil law jurisdictions (Morocco and OHADA) are broadly similar, while those in Mozambique are based on the *Plano Geral de Contabilidade,* which is closer to IFRS. This explains why FIFO, and a single-statement format for comprehensive income, are more commonly used in Mozambique than in Morocco and the OHADA zone. Further exploration of national patterns of IFRS policy choice was undertaken using multivariate techniques. This involved principal component analysis, cluster analysis, and multidimensional scaling. The results are presented below.

4.3 Principal component analysis

A principal component analysis was carried out using the data summarized in Table 3. The Statistical Package for Social Sciences (SPSS) was employed in the analysis. Sampling adequacy was assessed using the Kaiser-Meyer-Olkin (KMO) test. The value of KMO, which ranges from 0 to 1, should be greater than 0.5 if the sample is adequate (Cleff, 2019, p. 435; Hair et al., 2010; Hinton et al., 2014; Kaiser, 1974). In this regard, Hinton et al. (2014, p. 341) point out that "if the KMO test comes out at 0.5 or higher, we can then continue with the factor analysis as our data is suitable for it." However, some authors (e.g., Dugard et al., 2010, p. 186; Pallant, 2005, p. 182) recommend a value of at least 0.6. The KMO for this study was 0.655, indicating that we could proceed with the factor analysis. Another important test that is used to determine whether data are suitable for factor analysis is Bartlett's test of sphericity. This test indicates whether there is a sufficiently high correlation among the variables for factor analysis

to make sense. In other words, it tests the null hypothesis that the correlation matrix is an identity matrix (i.e., the variables are uncorrelated). This null hypothesis is rejected if the p value < 0.05. The null hypothesis is rejected in this study because the results of Bartlett's sphericity test shown at the bottom of Table 5 are $\chi^2 = 145.845$, $df = 45$, and $p < 0.0001$. This means that there are significant relationships between the variables that make the dataset appropriate for factor analysis.

The results of the principal component analysis after Varimax rotation are presented in Tables 5 and 6. It is evident from Table 5 that there are two factors with eigenvalues greater than 1, which explain 85.69% of the cumulative variance and indicate a two-factor solution. This is consistent with the graph in Figure 3 showing two components (or factors) above the elbow of the scree plot.

The final solution is summarized in Table 6, which provides the Varimax rotated factor loadings on the two components. Each of the IFRS jurisdictions in this study is assigned to the component on which it loads the greatest. These results support Hypothesis H_1 that the two-group classification in Figure 2 is discernible in the IFRS practices of listed companies in Africa. They reveal a clear dichotomy between the IFRS policy choices of companies in common law countries (Botswana, Ghana, Kenya, Nigeria, South Africa, Zambia and Zimbabwe) and those that are domiciled in civil law jurisdictions (Mozambique, Morocco, and OHADA). It therefore seems reasonable to label Component 1 "Anglo-American School" and Component 2 "Franco-German School" in conformity with Elad's (2015) classification. These components could also be labeled "Anglo or Class A accounting" and "Continental European or Class B accounting" following Nobes (1998).

*** Insert Table 5, Table 6, Figure 3, and Figure 4 about here ***

4.4 Cluster analysis

A hierarchical cluster analysis was used to further test the validity of Elad's (2015) classification scheme. This approach was adopted by Doupnik and Salter (1993) in their empirical investigation of the validity of Nobes' (1983) judgmental classification of financial reporting systems. In this study, a hierarchical cluster analysis was carried out using Ward's method applying the squared Euclidean distance as the similarity measure. SPSS was employed in the analysis. The results of the cluster analysis are summarized in the dendrogram in Figure 4, which reveals a two-group classification of IFRS jurisdictions in Africa and provides empirical support for Hypothesis H$_1$. Figure 4 shows a clear contrast between the IFRS practices in Francophone and Lusophone countries (Morocco, Mozambique and OHADA zone), on the one hand, and those in common law jurisdictions, on the other.

4.5 Multidimensional scaling

Multidimensional scaling is similar to cluster analysis because it provides a visual representation of patterns in a dataset. However, it differs from cluster analysis in the sense that the results are not displayed in the form of dendrograms or hierarchical structures. Rather, multidimensional scaling creates a spatial diagram in such a manner that "objects that are more similar (or have shorter distances) are closer together than objects that are less similar (or have longer distances)" (Jose, 2020, p. 120).

Earlier researchers on the classification of financial reporting (Frank, 1979; d'Arcy, 2001; and Nobes 2011) used multidimensional scaling to corroborate the results of principal component analysis or cluster analysis. In the present study, we also check our earlier results using this approach. Multidimensional scaling was performed on the IFRS policy data using

the PROXSCAL procedure in IBM SPSS Statistics Version 25. This program created proximities from the raw data.

Goodness of fit was measured using the normalized raw stress because the PROXSCAL scaling algorithm tries to minimize it (Janssens et al., 2008, p. 409). In general, stress values are based on differences between predicted and actual distances and range from 0 to 1; values closer to zero indicate a good fit. The normalized raw stress for the two-dimensional map in Figure 5 is 0.00303, which, according to the criteria proposed by Kruskal (1964), represents a very good fit. Other indicators of goodness of fit are Dispersion Accounted For (D.A.F) and Tucker's congruence coefficient. Values of these measures close to 1 indicate a good fit. The values of D.A.F and Tucker's coefficient in this study were 0.996 and 0.998, respectively, suggesting that the model's fit is good.

*** Insert Figure 5 about here ***

The two-dimensional solution, displayed in Figure 5, confirms a two-group classification, with common law jurisdictions constituting one group, and the civil law jurisdictions constituting the second group, consistent with the hypothetical classification in Figure 2. However, Mozambique appears as an outlier in the civil law group, reflecting the fact that its pre-IFRS accounting rules are based on older international standards, which allowed many of the current IFRS options for the topics in Table 3.

5 Conclusion

The three multivariate analyses in this study (principal component analysis, cluster analysis, and multidimensional scaling) all lead to the same conclusion that a two-group classification (Anglo-American School and Franco-German School) can be discerned in the

IFRS practices of listed companies in Africa, thereby supporting Hypothesis H_1. These results support Hypothesis H_2 — that pre-IFRS national rules influence IFRS policy choices — as well as Hypothesis H_3 — that there are systematic national differences in the accounting policy choices of listed companies in Africa.

Unlike earlier work by Elad (2015), which tested the classification in Figure 2 using only data on *de jure* regulations from the PwC (2011) survey, this paper presents the first classification of financial reporting in Africa based on *de facto* practices. Classifications that are based on statutory rules rather than accounting practices could mislead researchers if the rules are not followed in practice. This paper shows that many recent studies use erroneous data on the adoption status of IFRS in African countries simply because they relied solely on statutory accounting rules and regulations.

The existence of a regulation does not automatically result in compliance, particularly in Francophone countries (Scheid & Walton, 1992, p. 4). The most glaring example relates to Article 8 of the recent Accounting and Financial Reporting Law, which requires all companies whose securities are traded in a public market in OHADA jurisdictions to prepare IFRS-based financial statements, in addition to statutory accounts based on SYSCOHADA, as of 1 January 2019 (OHADA, 2017b, p. 16). The IFRS Foundation promptly updated the jurisdiction profiles on its website to indicate that IFRS are now mandatory for listed companies in each of the 17 countries in the OHADA zone (IFRS Foundation, 2018). Unfortunately, this new accounting law has thus far remained dead letter because of widespread noncompliance (Houssou, 2020; Linge, 2020). None of the companies that are listed on the *Bourse des Valeurs Mobilières de l'Afrique Centrale* (BVMAC), the regional stock exchange for the franc zone countries in Central Africa, adopted IFRS in their 2019 financial statements, even though they are required by law to do so. Similarly, only a small number of companies that are listed on the *Bourse Régionale des Valeurs Mobilières* (BRVM), the regional stock exchange for the West African

franc zone, adopted IFRS in their financial statements, notwithstanding the fact that auditors issued a qualified opinion for noncompliance with statutory obligations.

Strangely, Article 8 of the new OHADA Accounting and Financial Reporting Law affirms that IFRS-based financial statements are "intended *exclusively* for financial markets and they cannot be used as a basis for determining distributable profit" (see OHADA, 2017b, p. 16, Article 8, last paragraph). The word "exclusively" here means "to the exclusion of other stakeholders," such as government, employees, trade unions, and tax authorities. Many company auditors in the OHADA zone felt the need to reproduce this provision of Article 8 in their report. For example, the auditors of *Société Multinationale de Bitumes* (SMB), an Ivorian company that is listed on the BRVM, mentioned in their audit report that the company has not yet adopted IFRS, which are designed for use in financial statements that are prepared exclusively for financial market participants (SMB, 2019, p. 10). Additionally, the directors of *Société des Caoutchoucs de Grand Béréby* (SOGB), another company that is listed on the BRVM, declared in their annual report that IFRS-based financial statements are intended exclusively for financial markets and cannot serve as a basis for determining distributable profit under OHADA law (SOGB, 2019, p. 24).

These observations, which appear to downplay the relevance of IFRS, can be explained in terms of the contrasts between the government-driven, tax-dominated, and weak equity Class B accounting system and the Class A system that is in place in most Anglophone African countries where IFRS have replaced domestic GAAP for statutory reporting. Admittedly, the design of IFRS is largely predicated on the assumption that the mission of accounting is to provide relevant information that will help rational investors make investment decisions. The role of accounting is defined from the standpoint of equity shareholders, neglecting, or de-emphasizing the requirements of other social constituencies (Solomons, 1991; Tinker, 1991). This ideological bias accords with the market-oriented neoliberal agenda promoted by the World Bank in developing nations. In contrast, the accounting system in Francophone and

Lusophone countries emphasizes the needs of tax authorities, government agencies, environmental campaigners, stakeholder advocacy organizations, national statisticians, macroeconomic planners, and trade unions. Ironically, in May 2017, the IFRS Foundation announced a new cooperation agreement with the World Bank to provide greater support to developing economies in their use of IFRS (World Bank, 2017). It was noted earlier here that the World Bank funded the reform of the OHADA accounting system with a view to making it compliant with IFRS. However, the existence of systematic differences in IFRS practices among African states suggests that international comparability has not been achieved and that this World Bank/IMF policy is doomed to fail.

This paper has some limitations that should be acknowledged. First, all eleven topics in Table 3 were given equal weight. This limitation applies to all other international accounting classification studies (e.g., Nair & Frank, 1980; d'Arcy, 2001; Nobes, 2011) that assigned equal weight to each of the topics involved. Nonetheless, this limitation is not a major concern here because the main objective of this paper is to determine whether there are national patterns in IFRS accounting policy choices that may indicate more deep-seated differences in accounting systems. For instance, the topics in Table 3 do not recognize that the IFRS financial statements of companies in civil law jurisdictions include legal reserves that are not found in the financial statements of companies in common law countries in Africa. Mackenzie et al. (2014, p. 69) emphasize this point in the European context:

> In some jurisdictions, notably in continental Europe, the law requires that a portion of retained earnings, equivalent to a small proportion of share capital, be set aside as a legal reserve. Historically, this was intended to limit dividend distributions by young or ailing businesses. This practice is expected to wane, and in any event is not congruent with financial reporting in accordance with IFRS and with the distinction made between equity and liabilities.

However, there is no indication that this practice will wane in the future, as claimed above by Mackenzie et al. Indeed, Elad (2015) contends that legal reserve is one of the distinctive features of the vintage continental, or Class B, approach to accounting in Francophone and

Lusophone Africa, which has remained resistant to change despite the unprecedented success of IFRS as a global set of financial reporting standards and external pressure for reform from the World Bank and the IMF.

This study did not address the fact that some companies may have utilized highly standardized, boilerplate reporting practices that were promoted by auditors and consulting firms using, for example, KPMG's (2019) template for producing IFRS-compliant financial statements and disclosures. Relatedly, it was found that national and regional charts of account had a significant influence on the IFRS policy choices of companies in civil law jurisdictions in Africa. It was also noted that, in general, companies in common law jurisdictions in Africa provided far more extensive disclosures in their IFRS financial statements than their counterparts in Mozambique, Morocco and the OHADA zone.

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Table 1: Research on the international classification of financial reporting

	Researchers	No. of countries	Type of data	Classification method
1	Hatfield (1911)	4	Impressions of practices	Judgment
2	Mueller (1967)	5	Impressions of purposes	Judgment
3	Seidler (1967)	13	Impressions of influences	Judgment
4	AAA (1977)	6	Impressions of influences	Judgment
5	Da Costa et al. (1978)	38	Rules and impressions of practices	PCA
6	Frank (1979)	38	Rules and impressions of practices	PCA, MDS
7	Nair and Frank (1980)	38, 46	Rules and impressions of practices	PCA, SSA
8	Goodrich (1982)	64	Impressions of concepts	PCA
9	Nobes (1983)	14	Impressions of practices	PCA
10	Puxty et al. (1987)	4	Impressions of regulatory style	Judgment
11	Shoenthal (1989)	2	Impressions of competencies of auditors	Judgment
12	Doupnik and Salter (1993)	50	Impressions of practices	Hierarchical clustering
13	d'Arcy (2001)	14	Rules	Hierarchical clustering, MDS
14	Leuz et al. (2003)	31	Facts and impressions relating to investor protection	k-means clustering
15	Leuz (2010)	37, 49	Facts and impressions on legal systems, securities regulation	k-means clustering
16	Nobes (2011)	8	Practices	PCA, MDS, Hierarchical clustering
17	Elad (2015)	30	IFRS adoption	Hierarchical clustering

Notes: PCA - principal component analysis; MDS - multidimensional scaling; SSA- smallest space analysis.

Source: Adapted from Nobes and Stadler (2013, p. 579).

Table 2: Classification of IFRS adoption types

	Type of GAAP	Description of the GAAP
I	IFRS-IASB	IFRS as issued by the IASB, including IAS
II	IFRS-equivalent	A version of IFRS which involves compliance with IFRS-IASB
III	IFRS-EU	IFRS as endorsed in the EU, which generally allows compliance with IFRS-IASB
IV	IFRS-close	A version of IFRS which might not achieve equivalence because there can be material differences from practices required under IFRS-IASB
V	Local GAAP	Local GAAP, which is none of I to IV above

Source: Adapted from Nobes (2022, forthcoming).

Figure 1: Judgmental Classification of Accounting Systems in Africa in 1992

African countries

Class — Franco-German School (Uniform accounting) | Anglo-American School (Judgmental or pragmatic accounting)

Sub-class — Spanish Influence | Portuguese influence | Pure OCAM | OCAM variant | UK influence | US influence

Family — UDEAC system | Ivorian system | AAC SCAR-B | Algerian system | Franco-Belgian

Equatorial Guinea

Angola
Mozambique
Guinea Bissau

C.A.R
Chad
Gabon
Congo
Cameroon
Senegal

Ivory Coast

Zaire

Algeria

Togo
Burundi
Tunisia
Morocco
Madagascar

Nigeria
Ghana
Sierra Leone
Malawi
Uganda
Tanzania
Egypt
Kenya
Zambia
Zimbabwe
Swaziland
Botswana
South Africa

Liberia

Source: Elad (2015, p. 89)

Figure 2: Hypothetical Classification of Accounting Systems in Africa by Elad (2015)

Class	
Sub-class	
Family	

African countries

Franco-German School (Uniform accounting)

Anglo-American School (Judgmental or pragmatic accounting)

Portuguese influence

French Influence

UK influence

US influence

SYSCOHADA

Franco-Belgian

Angola
Mozambique

Benin
Burkina Faso
Cameroon
Central African Republic
Chad
Comoros
Congo
DR Congo
Gabon
Guinea
Equatorial Guinea
Guinea Bissau
Ivory Coast
Mali
Niger
Senegal
Togo

Algeria
Tunisia
Morocco
Madagascar

Nigeria
Ghana
Sierra Leone
Malawi
Uganda
Tanzania
Egypt
Kenya
Zambia
Zimbabwe
Swaziland
Botswana
South Africa

Liberia

Source: Elad (2015, p. 91)

Table 3: Percentage of IFRS policy choice by topic and jurisdiction

	Topic	BW	GH	KE	MA	MZ	OHADA	NG	ZA	ZM	ZW
		%	%	%	%	%	%	%	%	%	%
1	Income statement by function	89	94	96	0	17	13	100	92	100	96
2	Line for EBIT or operating profit	72	88	92	100	75	88	90	88	100	96
3	Equity accounting results in operating profit	38	50	17	13	100	20	0	12	33	9
4	Balance sheet assets = credits	72	94	72	100	100	100	95	93	85	100
5	Assets with increasing liquidity	78	94	100	94	100	88	100	97	100	100
6	Indirect method for cash flow	78	94	96	100	100	100	88	90	100	96
7	Dividends received in operating cash flow	17	33	13	25	0	60	0	79	0	33
8	Interest paid in operating cash flow	55	54	52	76	25	25	16	80	92	79
9	Comprehensive income in one statement	78	82	92	6	67	14	85	48	93	80
10	Some PPE at fair value	6	13	4	0	0	0	3	15	43	16
11	FIFO for some inventory	38	33	8	0	33	0	38	46	14	44

Notes: This table shows the percentages of companies per country and topic which make the respective IFRS policy choice in 2019. Country names are abbreviated according to their two-letter ISO codes as follows: *Botswana (BW), Ghana (GH), Kenya (KE), Morocco (MA), Mozambique (MZ), Nigeria (NG), South Africa (ZA), Zambia (ZM), and Zimbabwe (ZW).*

Table 4: Breakdown of number of companies by jurisdiction

Jurisdiction	Stock Exchange	Market Capitalization (Billion US$)	No of listed companies	Initial sample	Final sample
Botswana	Botswana Stock Exchange	38.7	34	20	18
Ghana	Ghana Stock Exchange	11.2	38	20	17
Kenya	Nairobi Securities Exchange	39.2	63	25	25
Morocco	Casablanca Stock Exchange	61.5	76	25	17
Mozambique	Bolsa de Valores de Moçambique	1.6	11	10	10
Nigeria	Nigerian Stock Exchange	84	170	40	40
OHADA – West Africa	Bourse Régionale des Valeurs Mobilières (BRVM)	14.6	46	25	8
OHADA – Central Africa	Bourse des Valeurs Mobilières de l'Afrique Centrale (BVMAC)	0.4	4		
South Africa	Johannesburg Stock Exchange	977.5	317	40	40
Zambia	Lusaka Stock Exchange	9.6	22	15	14
Zimbabwe	Zimbabwe Stock Exchange	16.4	63	25	25
Total		1254.7	841	245	214

Table 5: Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cum %	Total	% of Variance	Cum %
1	7.304	73.042	73.042	7.304	73.042	73.04	5.431	54.310	54.310
2	1.264	12.642	85.685	1.264	12.642	85.69	3.137	31.375	85.685
3	.867	8.671	94.356						
4	.327	3.274	97.630						
5	.119	1.187	98.818						
6	.089	.893	99.711						
7	.017	.168	99.879						
8	.007	.069	99.948						
9	.004	.042	99.990						
10	.001	.010	100.000						

Notes: Bartlett's sphericity test: $\chi^2 = 145.845$, *df* =45, and *p* < 0.0001. Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy = 0.655

Table 6: Principal component loadings

Country	Component 1	Component 2
Botswana	**.947**	.245
Ghana	**.870**	.439
Kenya	**.926**	.327
Morocco	.286	**.912**
Mozambique	.327	**.643**
Nigeria	**.896**	.297
OHADA	.233	**.946**
South Africa	**.593**	.554
Zimbabwe	**.870**	.417
Zambia	**.875**	.260

Notes: Extraction method: principal component analysis. Rotation method: Varimax with Kaiser normalization.

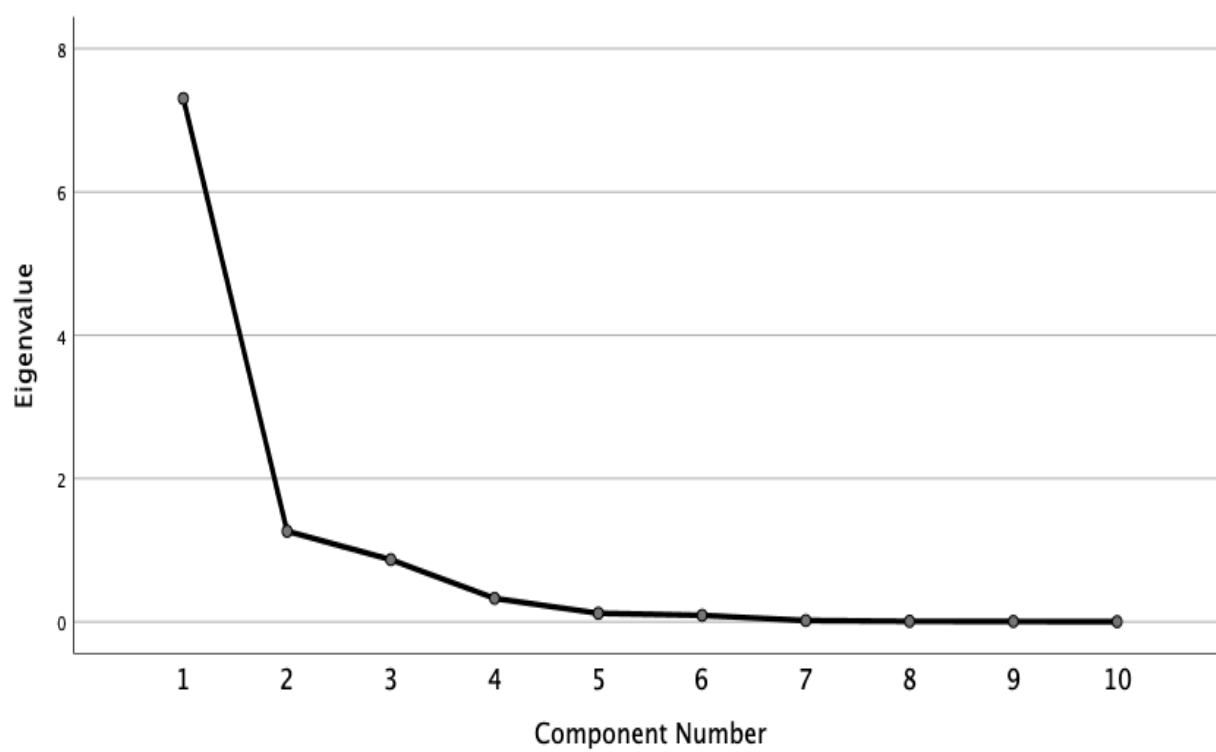Figure 3: Scree plot of eigenvalues for principal component analysis
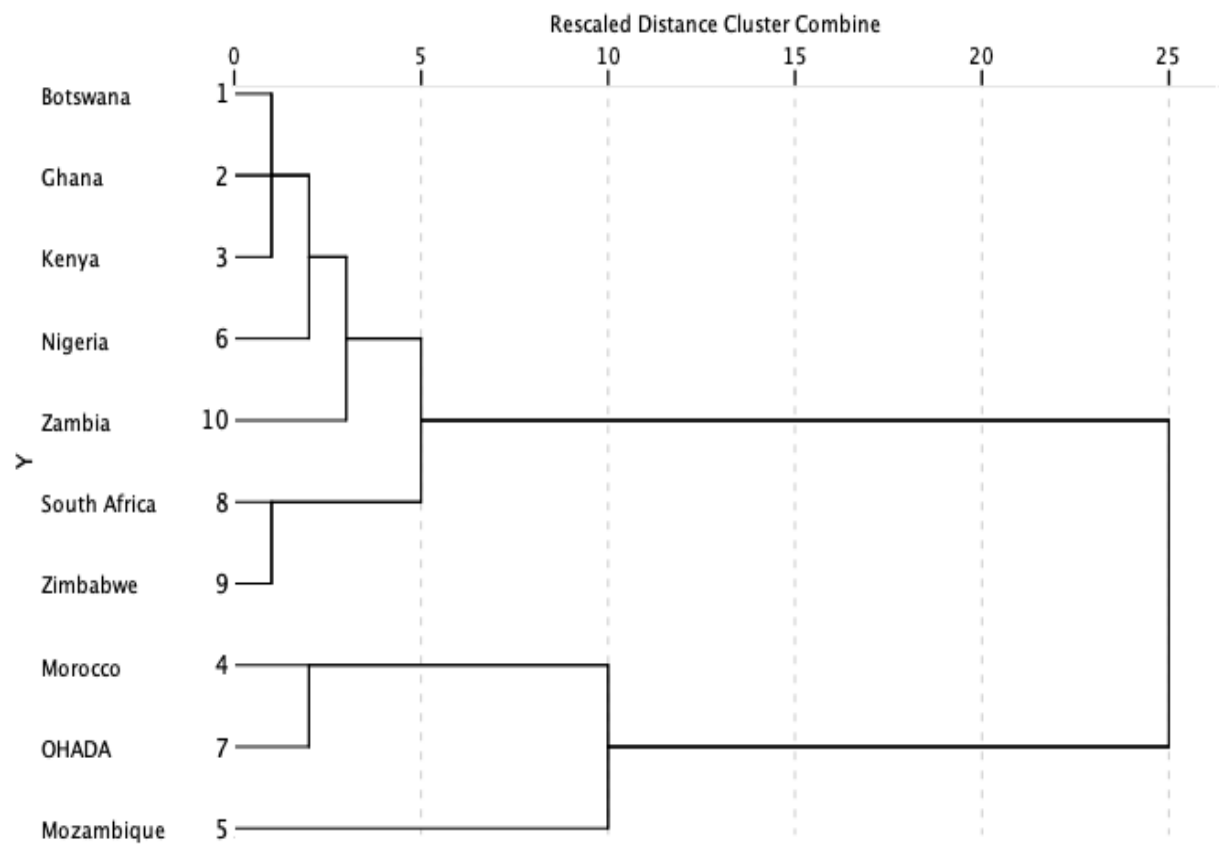
Figure 4: Hierarchical cluster analysis dendrogram.

Figure 5: Multidimensional scaling of two dimensions