Tanzanian Economic Review, Vol. 9 No. 2, December 2019: 53–88

Adoption of International Standards on Auditing by Small and Medium-Sized Practices in Tanzania: An Examination of Critical Factors

Henry Chalu*

Abstract

Tanzania, like many countries in the world, adopted international standards on auditing (ISAs) in 2004, which made it mandatory for all auditing firms to use to ensure high audit quality. Although several studies have been conducted to explore factors behind the adoption of ISAs, these studies have concentrated on large auditing firms ignoring small and medium practices (SMPs). Moreover, these studies have not focused on successful adoption as a multi-dimensional concept. Based on these gaps, this study seeks to examine the relationship between factors and successful adoption of ISAs by SMPs in Tanzania. The study employs canonical correlation analysis (CCA) as suggested by Fornell and Larcker (1980) to analyse primary data collected using self-administered questionnaire to 113 auditors working in SMPs. Empirical results show that the availability of resources, regulatory enforcement, client capacity, organizational culture, and organizational structure are positively related with successful adoption of ISA. The findings suggest that policies on the adoption of ISA should not only focus on compliance but also on resources availed to SMPs and capacity of clients involved in the auditing process.

JEL Codes: M40, M41, M42

Keywords: *canonical correlation analysis (CCA); International Standards on Auditing (ISAs); International Standard on Quality Control 1(ISQC 1); small- and medium-sized practices (SMPs).*

1. Introduction

Auditing of financial statements is important for the functioning of any country's economic system. The fundamental importance of auditing is based on its role as articulated by Mautz and Sharaf (1961), as well as Mautz (1972), in their classical works about the philosophy of auditing. According to them, financial statements data form an important basis for efficient and strategic resource-allocation to improve the wellbeing of society. As such, auditing is responsible for analysing the proof and support for financial data included in financial statements through examination and verification to judge the faithfulness with which they portray economic events and conditions of an entity for a particular period. Examination and verification are achieved through the application of techniques and methods covered in auditing standards. According to Knechel (2013), auditing is a profession made of standards that dictate the structure, hiring, training, rewarding professional staff, offering services, accepting clients, conducting engagements, and reporting obligations.

*University of Dar es Salaam Business School-UDBS; hchalu@gmail.com.com

These standards are considered prerequisite for high-quality auditing practices. However, in the past there were multiple standards with each country developing its own, hence creating problems of uniformity and comparability of financial information. To reduce these problems, global auditing standards have been developed and adopted by many countries to guide auditors and auditing firms in the profession. According to the World Bank, there is a widespread recognition that the implementation of robust standards helps achieve financial stability and contributes to the economic functioning and efficiency of a country's institutions that underpin the market economic system.

These global auditing standards known as International Standards on Auditing (ISAs) are issued by the International Auditing and Assurance Standards Board (IAASB) of the International Federation of Accountants (IFAC), and first appeared in the 1990s to replace the International Auditing Guidelines (IAG) (Humphrey, Loft & Samsonova-Taddei, 2014; ICAEW, 2020; Simnett, 2007).[1] As argued, the issuance of ISAs was done to enhance the quality of auditing practice and achieve global uniformity of the practice, something that has proved difficult because the adoption has not been uniform in terms of contents and time. In the case of time, each country has adopted ISAs at its own time (Duhovnik, 2011).

Regarding the contents of the standards, the adoption has been done with variations with some countries making full adoption while others making partial adoption with modification such as additional reporting requirements, scope of audit, and supplementary guidance. For example, a survey conducted by the Federation of European Accountants (FEE) to assess the adoption ISAs in Europe by 2015 found that 25 out of 28 European countries that had adopted ISAs, 16 had full adoption and the remaining 9 had partial adoption. The EU picture of 2015 is similar to the global status as provided by the IFAC itself. According to the IFAC report (2012), out of 126 countries, 72 made full adoption while 54 made partial adoption. In addition, a further report of IFAC (2019) revealed continuing variation as presented in Table 1.

Table 1: ISA Adoption Status

Region	No. of JDs	% of total	Adopted	% of total JDs	Partially Adopted	% of total JDs	Not Adopted	% of total JDs
Africa	24	18%	23	96%	1	4%	0	0%
Americas and Caribbean	25	19%	14	56%	9	36%	2	8%
Asia-Pacific	23	18%	13	57%	9	39%	1	4%
Europe	48	37%	35	73%	13	27%	0	0%
Middle East	10	8%	5	50%	5	50%	0	0%
Total	**130**	**100%**	**90**	**69%**	**37**	**28%**	**3**	**2%**

Note: JDs = Jurisdictions

Source: IFAC (2019) International Standards: 2019 Global Status Report, p. 18.

[1]In this study, ISAs refer to both clarified international standards on auditing (Clarified ISAs) and International Standards on Quality Control 1 (ISQC 1). This is consistent with Yong (2013) and Köhler (2009).

As per Table 1, 90 out of 130 countries that have adopted fully, 37 countries have adopted partially, and 3 countries have not adopted the ISAs. These variations have also been observed by the Reports on Observance of Standards and Codes (ROSC), which have been produced jointly by the International Monetary Fund (IMF) and the World Bank. From 2003 to 2010 the ROSC have observed that many countries have standards that have not been harmonized with the ISAs despite their claims that they have adopted the ISAs. These variations exist despite pressure from global financial institutions such as the IMF and the World Bank, as well as the World Trade Organization (WTO) (Boolaky & Omoteso, 2016). The pressure is a result of lobbying practices from standard-setters themselves, large auditing firms, as well as other industrial, financial, and professional organizations (Ramanna, 2015; Shields, 2014).

Various studies have been conducted to identify factors behind the variations in the adoption of the ISAs. Unfortunately, only a few of these studies that have focused on auditing standards: most have focused only on accounting standards. Limited interest on auditing standards has existed despite ROSC reports which have identified factors influencing the adoption of ISAs. On the factors identified by ROSC reports, only one study conducted by Boolaky and Soobaroyen (2017) has attempted to summarize them into the lack of public oversight of the profession, ISAs translation not being equivalent, and poor level of education and training. Apart from Boolaky and Soobaroyen (2017) who assessed institutional factors accounting for the variations in adoption, other studies—including Fortin et al. (2010) and Boolaky and Omoteso (2016)—have identified these factors to include the protection of minority interests, regulatory environment, foreign ownership and aid, importation level, education level, level of democracy, strength of capital markets, as well as the size of the economy of a country. However, while these studies have investigated factors behind variation of adoption, they have not focused on successful adoption. This is because adoption can be an issue of declaration, but to be successful it means that the ISA requirements are met. This is consistent with the argument provided by the IFAC (2012): that while some countries have declared convergence as an objective, they have not achieved it.

Another limitation of these studies is they have been conducted at national/country levels. While this could be appropriate if the interest is to investigate adoption at macro-level, it may not be appropriate for assessing the level of success because the national level is responsible to regulate and enforce international standards (Simnett, 2007). The argument here is that while an adoption decision is made at a national level, the implementation is done at a firm level. As such, to assess successful adoption of the ISAs one needs to consider whether auditing firms in a country have fully adopted and fulfilled the requirements of the standards. It is only when auditing firms can use the ISAs adequately that users of financial information can be able to enjoy high quality of auditing. However, the few studies that have attempted to address this gap at firm level have focused on large audit firms (Banker, Chang & Kao, 2002; Dowling & Leech, 2007; Needles, Ramamoort & Shelton, 2002).

Focusing on large auditing firms creates two problems of interest. First, while large auditing firms have a strong influence on the formulation of ISAs and the capacity to adopt them successfully, they have been criticised of anti-competitive behaviour (Ballas & Fafaliou, 2008; CMA, 2019; House of Commons BEIS Committee, 2019: McKinnon, 2015; Singh, 2013). Some scholars argue that since large auditing firms have greater participation in the development of standards than smaller ones, they have the chances of lobbying for auditing standards that favour their practices (Needles et al., 2002; Ramanna, 2015; Shields, 2014). Consequently, the developed standards—including ISAs—are considered to lean towards large auditing firms. Second, as observed by Fortin et al. (2010), the adoption of ISAs is done more by emerging economies than developed ones since the former have limited capacity—such as human resources, financial resources, and technology—to develop their own standards. As such the developed standards are used as guidelines to assist emerging economies (Humphrey et al., 2014).

While emerging economies tend to adopt more ISAs than the developed economies, these countries are dominated by small and medium practices (SMPs) and small and medium enterprises (SMEs).[2] According to the IFAC (2016), SMPs are crucial for economic growth in emerging economies because they constitute the majority of accounting practices, employ most of the practising accountants, and serve SMEs. However, the appropriateness of ISAs to SMPs has been questioned. Simnett (2007) has deemed the perspective held by the IAASB that 'an audit is an audit' (in the sense that developed auditing standards apply to both large and small auditing firms), as incorrect. This is consistent with observations made by Kitindi (2000) that international standards do not pay attention to the differences between small and large businesses. Here two related questions arise: (i) *What can make SMPs successfully adopt ISAs that are oriented towards large auditing firms; and (ii) What are the measurements for a successful adoption of ISAs?*

This study uses Tanzanian SMPs to answer these two questions. Tanzania, as other African countries that are members of the IFAC, adopted the ISAs in 2004, following Uganda (1998) and Kenya (1999). The country made full adoption, and the local standards)—i.e., the Tanzania Financial Accounting Standards (TFAS) and the Tanzania Auditing Standards (TAS)—were withdrawn (IFAC, 2012). The adoption was done through the national standard setter: the National Board of Accountants and Auditors (NBAA). The NBAA started its operations in 1973 as both a regulatory and professional body (under a self-regulation mechanism) following the enactment of the Auditors and Accountants (Registration) Act No. 33. The duality of roles has attracted both proponents and opponents. For example, those who support this duality consider it to increase credibility, generate good understanding of the effects of regulations to the market, and the use of expertise

[2]According to the guide issued by the IFAC in 2018, small and medium-sized practices (SMPs) are those auditing firms whose clients are mostly SMEs; use external sources to supplement limited in-house technical resources; and employs a limited number of professional staff. However, the definition depends on the legal settings of each country.

from members (Hilary & Lennox, 2005; IFAC, 2011). However, to opponents, this mechanism do not serve public interest, lacks independence, suffers from secrecy, and creates huge possibility of the profession being captured by a small group of people with their own interest (Anantharaman, 2012; Robson, et al., 1994; Stigler, 1971). For the NBAA to serve both as a professional and regulatory body creates risks of private interests superseding public interest vis-à-vis standard adoption because of professional capture and limited independence (Robson et al., 1994; Stigler, 1971). In other words, this environment is similar to a 'thin political market', as argued by Ramanna (2015).[3] Since Tanzania has a large number of SMPs—96.5% of the country's 200 auditing firms are classed as such. This raises the issue of whether and how the ISAs can be applied in the SMPs' contexts.

To understand whether and how SMPs apply the ISAs, in 2015 the World Bank and the Tanzanian government jointly produced a report (ROSC Report of 2015), which revealed a low level of compliance among auditing firms with the requirements of the ISA. The ROSC report identified several factors that explained this low compliance. The factors can be grouped into three categories: resource availability, regulatory environment, and organisational characteristics. These categories appear to have been chosen for pragmatic reasons as there are no theoretical arguments in the report to explain their grouping. However, the report did not single out SMPs; instead it dealt with all auditing firms. As such, the knowledge gap that has been identified in the global settings is also prevalent in Tanzania.

Based on the two related questions and the Tanzanian situation, the objective of this study is to examine factors behind successful adoption of ISAs by SMPs in Tanzania. It investigates whether there is a positive relationship between resources availability, regulatory environment, as well as organizational characteristics and successful adoption of ISAs by employing a theoretical plurality of the resource-based view, economic theory of regulation, institutional theory, theory of administrative behaviour, and the contingency theory. The study adopts the canonical correlation analysis (CCA) in an acknowledgement that successful adoption of ISAs is a multidimensional phenomenon characterised by jointly interacting dimensions (Mair &Rata, 2004; Stowe et al., 1980; van Auken et al., 1993).

The remainder of the paper is structured as follows. The second section presents the evaluation measures of successful ISAs adoption. The third section reviews the relevant literature and develops the study's hypotheses. The fourth section presents the methodology used. The fifth section focuses on descriptive and inferential results. Finally, the sixth and seventh sections provide discussion and conclusion of the study, respectively.

[3]Ramanna (2015) defines a 'thin political market' as an area of rule-making or regulation where corporate managers (a) possess the technical expertise necessary for informed regulation, (b) enjoy strong economic interests in the outcome, and (c) face little political opposition.

2. Literature Overview: Evaluating Successful Adoption of International Auditing Standards

Evaluations of the successful adoption of ISAs are not widespread in extant literature. The few studies that exist on this respect include those of Boolaky and Omoteso (2016), Boolaky and Soobaroyen (2017), King (1999), Lin and Chan (2000) and Mennicken (2008). However, the greater attention of these studies has been on the adoption of accounting standards (both IFRS/IAS and IPSAS) and much less on auditing standards (see, e.g., Ballas and Tzovas (2010), der Tas (1988), Fontes et al. (2005) and Qu and Zhang (2010)).

Unfortunately, the accounting and auditing literature on the adoption of international accounting standards lacks a uniform approach in evaluating successful adoption of the standards.[4] For example, Boolaky and Soobaroyen (2017) and Lin and Chan (2000) evaluate successful adoption in terms of convergence between national standards and ISAs. The limitations of this approach include the fact that a declaration of commitment may not mean that all auditing firms in a country are able to adopt the standards to the same level. Furthermore, this evaluation approach is only applicable in countries with national auditing standards, and it is hard to identify which requirements are complied with, and which are not, by auditing firms. On his part, King (1999) used a compliance approach to assess the harmonisation of ISAs in terms of the form and content of auditors' reports. In other words, according to King (ibid.) a successful adoption of ISAs can be evaluated by assessing the extent of compliance with ISAs in the basic elements of auditors' reports. Nevertheless, this approach cannot provide a holistic assurance that auditing firms have successfully adopted standards in their operations.

This study is of the view that an evaluation of successful adoption of ISAs must account for the operational processes of auditing firms, and that auditors are in a good position to provide an evidence of that. Hence, this study posits that using standards requirements covered by both the ISAs and ISQC 1 will help address all aspects of audit planning, engagement, procedures, collection, analysis of evidence, review of internal control systems and report contents auditing as argued by Boolaky and Soobaroyen (2017). This is based on the assumption that these requirements are directly linked with auditing firms' environment and systems to ensure that auditing is carried out effectively and efficiently. The requirements are concerned with quality, ethics, acceptance and continuance of human resources, engagement and performance, as well as monitoring.

According to the ISQC 1, quality requirements are concerned with establishing policies and procedures to ensure quality in performing engagements through

[4]The successful adoption of ISAs has been evaluated using different approaches such as matching and fuzzy clustering analysis (Fontes et al., 2005; Qu & Zhang, 2010); extent of harmonisation (der Tas, 1988); compliance with requirements of standards (Ballas & Tzovas, 2010), and convergence between national and international standards (Nguyen & Gong, 2014).

configuration and maintenance of a suitable environment for the provision of high audit quality (embracing both technical and service quality) to clients and users of financial statements (Duff, 2004). Regarding ethical requirements, ISQC 1 stipulates that these provide assurance that an auditing firm and its personnel maintain independence with due notification and action taken to resolve any breaches of independence. As put by Martinov-Bennie and Pflugrath (2009), the requirement for ethical compliance—as stipulated in ISQC 1 and reinforced in ISA 220—aims to ensure that human resources are both technically and ethically competent to improve audit performance and audit quality.

Moreover, acceptance and continuance requirements are concerned with ensuring that an auditing firm will only undertake or continue relationships and engagements where it is competent, where it can comply with ethical requirements, and where it can maintain clients' integrity. As concerns human resource requirements, the focus is on ensuring that an auditing firm has personnel with sufficient competencies, capabilities, and commitment. Regarding engagement performance, this requirement is concerned with providing reasonable assurance that engagements are performed according to professional standards and regulatory requirements. This includes supervision, review, consultation, and engagement quality control. For monitoring requirements, policies and procedures relating to systems of quality control are required. Lastly, the monitoring requirements are concerned with evaluating, communicating, and remedying identified problems. Focusing on regulatory monitoring, Lennox and Pittman (2010) found that larger firms are more likely to value monitoring than SMPs.

While several studies have assessed compliance with these six requirements, most have not combined them. In addition, such studies have not used these requirements to evaluate successful adoption of ISAs. This study considers that successful adoption of ISAs can be explained by the extent to which auditing firms meet these requirements.

3. Factors Affecting Successful Adoption and Hypotheses Development

3.1 Resource Availability

This study argue that a successful adoption of ISAs depends on the availability of different resources to an auditing firm. The theoretical basis for this supposition is the resource-based view (RBV), which considers that organization's competitive advantage is a function of resources controlled by an organization. In this study, we consider that successful adoption of ISAs is a competitive advantage to SMPs. As put by Grindley (1995), the adoption of standards provides competitive advantages by ensuring that an organisation is allowed access to its target market, can maximise returns and compete effectively. More specifically, based on resource availability, this study argues that two factors—financial resources and human resources—are critical for successful adoption of ISAs. This is consistent with previous studies that have used the RBV to explain the relationship between resources and competitive advantages (Maijoor & Van Witteloostuijn, 1996; Phua et al., 2011; Yong, 2013).

3.1.1 Availability of Financial Resources (FINRES)

Financial resources are crucial for auditing firms to adopt and implement ISAs (Boolaky & Soobaroyen, 2017; Köhler, 2009; Yong, 2013). The availability of financial resources in SMPs will be influenced by capital invested, fees paid by clients, and efficiency in terms of fixed and variable costs. Where auditing firms are not financially sound, auditors will be less motivated to apply ISAs adequately (Köhler, 2009; Yong 2013). In their cross-country analysis, Boolaky and Soobaroyen (2017) focused on lenders and borrowers to auditees, as well as foreign aid to countries, and found a positive relationship between financial resources and the adoption of ISAs. Yong (2013) found that financial resources' preparedness is positively associated with the adoption of ISAs by SMPs in Malaysia. These studies share similarities with the current work although there are contextual differences and divergences in terms of how financial resources are captured and operationalised empirically. Hence, the following hypothesis was tested:

H1: The availability of financial resources is positively related with a successful adoption of ISAs by SMPs

3.1.2 Availability of Human Resources (HUMRES)

The availability of competent human resources is crucial for a successful adoption of ISAs (Bröcheler et al., 2004; Duhovnik, 2011; Mennicken, 2008; Morris &Empson, 1998; Svanström, 2016; Yong, 2013). The availability of competent human resources refers to both the quality and quantity of human capital employed. Phua et al. (2011) observed that training employees in SMPs to meet continuing professional development (CPD) requirements made them more efficient in adopting auditing standards. Similar results were observed by Mennicken (2008) who found that hiring people who are well-trained in internationally recognised programmes and experiences in ISAs facilitated the use and circulation of ISAs in a firm. Similarly, Yong (2013) observed that human resources are a key determinant of the adoption of ISAs. In the case of the performance of auditing firms, studies conducted by Svanström (2016) and Bröcheler et al. (2004) support the positive influence of human resources on the performance of auditing firms. Svanström (2016), for example, found that the training of auditors is negatively related to dysfunctional behaviour. Likewise, Bröcheler et al. (2004) revealed that education (general human capital) was positively related with the performance of auditing firms. Hence, it is argued that the presence of competent human resources will enable SMPs to adopt and implement ISAs and ISQC 1 successfully:

H2: The availability of human resources is positively related with a successful adoption of ISAs by SMPs

3.2 Regulatory Environment

The regulatory environment of auditing has formal and informal components. According to Chen (2005), the formal regulatory environment comprises government policies, laws and regulations. In this regard, the activities of auditing firms are overseen by government authorities who also provide licences and

punitive measures against auditing firms when they violate stipulated laws and regulations. Empirical evidence suggests that government authorities have been working in favour of large auditing firms compared to SMPs (US Senate Accounting Establishment Report, 1977; Kleinman et al., 2014; Ramanna, 2015). On the other hand, informal regulatory environment comprises community pressure, media coverage, as well as non-governmental organisations which can influence practices of organizations through non-coercive actions (Feres & Reynaud, 2006). The informal regulatory environment for auditing firms may also include pressure from clients. In this study, two factors—namely regulatory enforcement and client capacity—were considered to influence the adoption of ISAs.[5] These factors are rooted in the institutional theory (DiMaggio & Powell, 1983) and Stigler's (1971) economic theory of regulation.

3.2.1 Regulatory Enforcement (REGEF)

According to Boolaky and Soobaroyen (2017), while ISAs transcend national boundaries, their implementation is the responsibility of each nation. As argued by Carson (2014), there is no effective regulation or enforcement at the global level, thus to ensure implementation, government entities and accounting bodies have the responsibility to induce, encourage and compel auditing firms to adopt the standards effectively. Apart from aiming at achieving market efficiency through the provision of improved audit quality, regulatory enforcement is also aimed at protecting investors. Accounting and oversight bodies have enforcement powers, which include monetary penalties as well as suspending and revoking registrations. However, it is not yet well established how efficient and effective these bodies are in terms of enforcement measures taken against non-compliant audit firms (Offermanns & Vanstraelen 2014). Nevertheless, Boolaky and Soobaroyen (2017) found that countries with stronger regulatory enforcement are more likely to have high commitment to ISAs than those with weaker regulatory enforcement instruments. Similarly, some scholars have advanced that a robust regulatory enforcement will influence auditing firms to increase due care to minimise costs of litigation, reduce legal liability, as well as enhance their reputation (Datar & Alles, 1999; Dye, 1993; Fuerman, 2000: Schwartz, 1998; Ye & Simunic, 2013; Simunic et al., 2017). Therefore, this study assumes that as regulatory enforcement increases, the level of integration of ISAs will also increase:

H3: Regulatory enforcement is positively related with a successful adoption of ISAs by SMPs

3.2.2 Client Capacity (CLICA)

According to Simunic (2014), auditors usually transact with clients in terms of price, quantity, and quality of audit work: which are all influenced by market forces. The market aspect recognises that clients are also participants in the auditing market and can influence the way audit is being conducted. As such,

[5]Consideration of formal and informal regulatory environments is consistent with Köhler (2009) who found that the effect of compliance with auditing standards could be divided into three categories: audit redesign effect, harmonisation effect, and regulation effect.

clients with high capacity may have greater influence on the performance of auditing firms, including the adoption of ISAs. To date, only two studies have focussed on if and how client capacity influences the adoption of ISAs (Mennicken, 2008; and Phua et al., 2011). Mennicken (2008) suggested that auditing firms adopt ISAs to attract international clients whom they consider to have a good understanding of these standards. Phua et al. (2011) found that SMPs should build the capacity of their auditors to continue auditing clients that have adopted the ISAs. Hence, the following hypothesis was tested for client capacity:

H4: Client capacity is positively related with a successful adoption of ISAs by SMPs.

3.3 Organisational Characteristics

To systematise the identification of salient organisational characteristics, the study draws upon two theories: the theory of administrative behaviour, and the theory of contingency. In terms of the former, this study considers that, despite being legal requirements, the adoption of ISAs is based on the decisions of executives in auditing firms. These decisions consider multiple variables and objectives (Mennicken, 2008), but may be suboptimal or rationally bounded depending on the availability of information, as well as the tacit and explicit knowledge of executives. In the case of the contingency theory, for executives to make decisions they have to consider several contingency variables because the adoption of ISAs is a strategic decision that has to deal with uncertainty and constant changes at different organisational and spatial scales (ibid.). Based on these two theoretical perspectives, this study identified four organisational characteristics as factors for the successful adoption of ISAs: technology, organisational culture, organisational strategy, and organisational structure.

3.3.1 Technology (TECHNO)

Various studies have investigated the influence of technology on the adoption of ISAs (Banker et al., 2009; Bedard et al., 2008; Dowling& Leech, 2007; Köhler, 2009; Mennicken, 2008). Bedard et al. (2008) reviewed several studies that investigated the relationship between computerisation of auditing practices and quality control achievements; and concluded that technology benefits auditing firms by enhancing audit quality through compliance with ISAs. This conclusion is consistent with the findings of a study by Banker et al. (2002) focusing on large auditing firms that have made large technology investments. Likewise, Dowling and Leech (2007) found that technology use by international auditing firms promoted compliance with ISAs. However, these two studies focused on large auditing firms and did not address successful adoption of ISAs by SMPs. Based on findings from previous studies, the following hypothesis is put forward:

H5: Technology is positively related with successful adoption of ISAs by SMPs

3.3.2 Organisational Culture (ORGANCUL)

Organisational culture is concerned with the collection of values, beliefs, and principles of organisational members (Needle, 2010). Fey and Denison (2003) posit a model of organisational culture that comprises four traits. The first trait is

involvement, which is concerned with empowering people in an organisation. The second trait is consistency, which is about coordination and integration. The third trait is adaptability, which relates to organisational responsiveness based on customers, risks, and the capacity to learn. The final trait is mission, which is concerned with purpose, direction, strategic objectives and future vision of an organization. The extant literature on the influence of organisational culture has attempted to assess which of these traits, or a combinations thereof, are critical for ensuring organisational effectiveness (Chow, et al., 2002; Emmanuel et al., 1990; Fey & Denison, 2003; Pratt & Beaulieu, 1992).

This study regards organisational culture of auditing firms as a combination of mission (being results-oriented and pragmatic), involvement (being employee-oriented), adaptability (professional- and system-oriented), and consistency. Studies by Boolaky and Soobaroyen (2017), and Yong (2013), provide empirical evidence on how culture influences the adoption of ISAs. However, in the case of Yong (2013) organisational culture is subsumed within organisational resources, hence making it difficult to isolate the specific influence of the former. On the other hand, the study by Boolaky and Soobaroyen (2017) has considered culture at a national and not at the organisational level. As such, the study postulates the following hypothesis to address that gap:

H6: Organisational culture is positively related with a successful adoption of ISAs by SMPs

3.4 Organisational Strategy (ORGANSTRA)

Organisational strategy pertains to the sum of actions that an organisation takes to achieve long-term goals. According to Zheng et al. (2010), organisational strategy refers to plans for interacting with the competitive environment to achieve organisational goals. Venkatraman (1989) presents six dimensions of organisational strategy: aggressiveness, analysis, defensiveness, futurity, proactiveness and riskiness; whilst Zheng et al. (2010) and Bergeron et al. (2003) have only four dimensions: analysis, defensiveness, futurity and proactiveness. There are studies that have attempted to assess which particular strategic dimension influences the organisational effectiveness of auditing firms (Fischer & Dirsmith, 1995; Mayhew & Wilkins, 2003); while others have considered a mix of strategic orientations that are important for organisational effectiveness (Bergeron et al., 2003; Miles & Snow, 2003; Nutt & Wilson, 2010; Zhenget al., 2010). This study takes the latter approach by maintaining that a strategic orientation of an organisation is a multidimensional concept that impacts efficacy from different angles. Thus the hypothesis here is:

H7: Organisational strategy is positively related with a successful adoption of ISAs by SMPs

3.4.1 Organisational Structure (ORGANSTRU)

According to Zheng et al. (2010), organisational structure relates the configuration of tasks and activities in an organisation. Emmanuel et al. (1990) consider organisational structure as a means of influencing the behaviour of employees

through, for example, assigning authority and responsibility. In the literature, organisational structure is classified on the basis of two categories: centralisation, and decentralisation. Most studies on this issue have found that decentralised (centralised) structures are positively (negatively) related to organisational effectiveness. However, actual organisational structures are rarely limited to these two dichotomous categories: in practice a combination of the two may manifest (Ein-Dor & Segev, 1982; Habib & Victor, 1991).

Indeed, this study considers that a fusion of centralised and decentralised elements is optimal for auditing firms to ensure effective management and operations. Greenwood and Hinings (1996) delineate features of auditing that can be used to justify the pursuit and maintenance of a mixed organisational structure: partnership, representative democracy, emphasis on independence, autonomy, and responsible conduct. As such, it is considered that a mixed organisational structure will enable auditing firms to successfully adopt and implement ISAs. The following hypothesis is tested:

H8: A mixed (centralised and decentralised elements) organisational structure is positively related with a successful adoption of ISAs by SMPs.

To summarise, Fig. 1 presents a conceptual and operational framework of the study. As described in the next section, factors (left side of Fig. 1) and measures of successful adoption (right side of Fig. 1) are operationalized as independent and dependent variables, respectively (see Table A1).

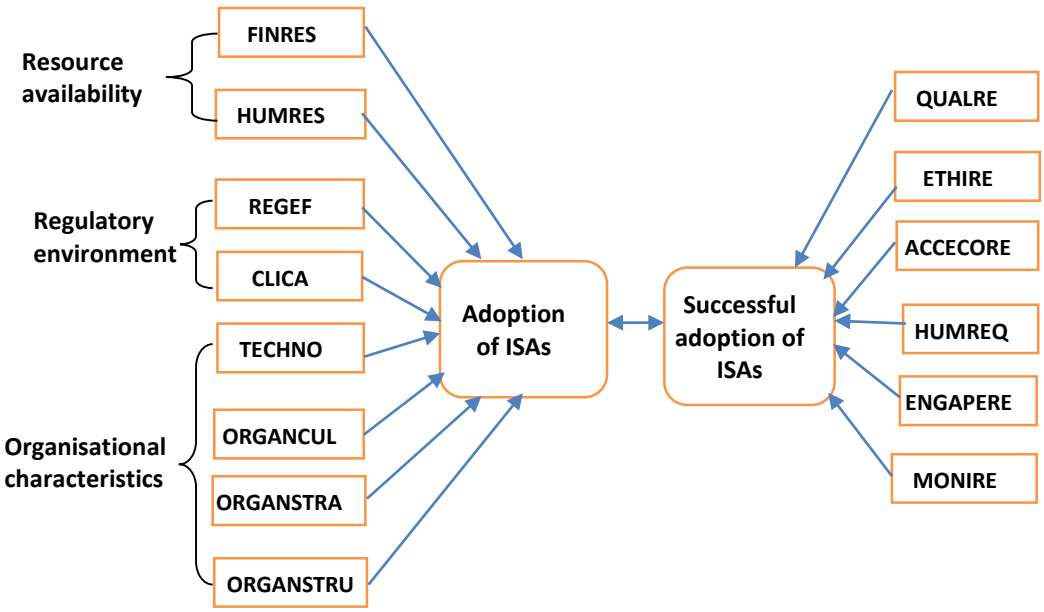

Figure 1: ***Conceptual and Operational Framework***

4. Methodology

4.1 *Study Instrument*

The instrument used for this study was a questionnaire that was designed to capture information from auditors. The questionnaire was developed after reviewing the literature, ISAs and ISQC 1, and was divided into four sections. The first section covered the general demographic and socioeconomic profile of respondents in terms of gender, academic qualifications, professional affiliations, employment experience, as well as position in an organisation. The second section covered the profile of the firm and consisted of items such as services provided, operational model, partnership settings, number of employees, and years of operation. The third section consisted of items concerned with factors considered to be positively related to the adoption of ISAs by SMPs: financial resources availability, human resources availability, client capability, regulatory enforcement, organisational culture, organisational structure, organisational strategy, and technology (left side of Fig. 1). Finally, section four focused on measures of successful adoption of standards. Specifically, six measures were generated from the requirements in ISAs and ISQC 1: quality, ethical, acceptance and continuance of client relationships, human resources, engagement performance, and monitoring requirements (right side of Fig. 1). For factors and measurements in sections 3 and 4, respectively, responses were elicited using 5-point Likert scales using an appropriate mix of positive and negative wording (framings) to maximise the validity of responses. The questionnaires were self-administered, and respondents were asked to respond to all questions.

4.2 *Study Variables*

As aforementioned, this study investigated the relationship between drivers (factors) of the adoption of ISAs, and successful adoption of the standards. There are eight driving factors that are employed as independent variables in the CCA. These include financial resources availability (*FINRES*), human resources availability (*HUMRES*), client capacity (*CLICA*), regulatory enforcement (REGEF), technological capability (*TECHNO*), organisational culture (*ORGANCUL*), organisational strategy (*ORGANSTRA*), and organisational structure (*ORGANSTRU*). Next, six dependent variables concerned with successful adoption were generated from the requirements in ISAs and ISQC 1. These comprised of quality requirements (*QUALRE*), ethical requirements (*ETHIRE*), acceptance and continuance of client relationships (*ACCECORE*), human resources (*HUMREQ*), engagement and performance (*ENGAPERE*), and monitoring requirements (*MONIRE*). Table 2 details the operationalization of each of these independent and dependent variables.

4.3 Data Collection

One hundred and twenty-five questionnaires were distributed to auditors working in SMPs in Tanzania in 2017. The sampling frame was defined by a list of SMPs operating in Dar es Salaam as maintained by the NBAA. The use of auditors was based on the assumption that despite the adoption of ISAs being a legal issue following pronouncements by the NBAA, it is also based on the decisions of

executives of auditing firms since pronouncements by authorities does not guarantee successful adoption unless efforts are done by the SMPs. Thus, we considered that auditors themselves would be in a better position to provide opinions on how different factors affect successful adoption of ISAs. From this list, 25 SMPs were randomly selected and five questionnaires were sent to five auditors for each SMP. Dar es Salaam was selected because most SMPs in Tanzania (about more than 50%) are located there. Of the 125 questionnaires distributed, 113 were completed and returned (response rate = 90.4%). All 113 returned questionnaires were fully completed and deemed valid and usable for analysis.[6] Table 3 shows some basic characteristics of the respondents and SMPs.

Table 3: Characteristics of Respondents and SMPs (*N*=113)

Characteristics		***n***	**%**
Gender	Female	46	40.7
	Male	57	59.3
Education level	Diploma	8	7.1
	Undergraduate	84	74.3
	Postgraduate	18	15.9
	Others	3	2.7
Professional affiliation	CPA (Tanzania)	62	54.9
	ACCA	23	20.4
	CIMA	11	9.7
	CISA	7	6.2
	None	10	8.8
Working experience	< 5 years	65	57.5
	6 - 10 years	14	12.4
	11 - 15 years	13	11.5
	16 - 20 years	13	11.5
	20 <	8	7.1
Current position	Partner/Director	25	22.1
	Senior manager	29	25.7
	Manager	24	21.2
	Senior associate	21	18.6
	Associate	14	12.4
Services offered	Auditing and assurance		96.0
	Tax		70.0
	Advisory and consulting services		42.0
	Accounting and compilation		64.0
Operational model	Sole practitioner	53	46.7
	2 partners	46	40.7
	3 partners	10	8.8
	More than 3 partners	4	3.5

[6]The sample size for CCA has been debated for a long time, and different authors came with different suggestions about the sample size per variable (see Barcikowski & Stevens, 1975; Dattalo, 2014; Hair, et al., 2010; Ragland, 1967; Thorndike & Weiss, 1973; Weinberg & Darlington, 1976). The range has been between 6 up to 60 per each variable. In this study we used G*Power software (as suggested by Field, 2013) to assess whether the sample size of 113 is adequate. Based on the power of test of not less than 0.80 and Pillais's value of 1.479 (taking into consideration 14 variables both predictors and responses), the MANOVA results gave us the sample size of 73, hence confirming the adequacy of our sample size.

Clients	Small businesses	98.2
	Non-governmental organisations	75.2
	Micro businesses	45.1
	Large businesses	35.4
	Governmental organisations	17.7
	Multinational companies	8.8
	Listed companies	4.4

The survey respondents are representative in terms of gender, with an appropriate mix in terms of education, affiliations, and work experience. Respondents also span the gamut in terms of seniority, services offered, and operational models. Finally, in terms of clients, the majority of SMPs serve small businesses (98%), NGOs (75%) and micro businesses (45%); supporting the view that the clients of SMPs tend to be SMEs.

4.4 Unit of Analysis

The issue of unit of analysis in any study is not a straightforward issue as has been observed in the literature (Kumar, 2018). The complexity in deciding a unit of analysis is based on having data at one level, while the research design and assumptions may require another level of analysis (Silverman & Solmon, 1998), as well as confusing unit of analysis and level of analysis as one category (Yurdusev, 1993). The confusion has been a result of the misapplication of ecological fallacy advocated by Robinson (1950) and Selvin (1958), which assumes that it is incorrect to make inference from higher levels to lower levels of aggregation; for example, drawing conclusion about an individual from a group data, or about group from an individuals' data. Based on the ecological fallacy perspective, data collected from individual actors in an organization cannot be used to explain the characteristics of an organization, and vice versa. However, this perspective has been criticised by Schwartz (1994) and Spicker (2001) that it is not correct to assume that lower levels cannot be used to explain higher levels and vice versa because ecological fallacy is about logic and not methodology. Schwartz (1994) argued that if the interest is to explain something, there is no limit of descending to lower levels of questioning or going to higher levels of abstraction (Zito, 1975 as cited by Schwartz, 1994). As such, this study does not follow ecological fallacy in choosing the unit of analysis.

Based on that perspective, this study used individual auditors as a unit of analysis, while the level of analysis was SMPs adopting ISAs. The selection of auditors as a unit of analysis is based on the model provided by Silverman and Solmon (1993), as well as the criteria provided by Horley (1988). It was considered that since the variables used scores from auditors who were considered independent, then they could be considered both as a unit of generalization, assignment, and sampling. The use of auditors as a unit of analysis helped this study to conclude at SMP level because of the following advantages. First, based on the assumption that auditors are part of SMPs (the issue of whole or part as argued by Yurdusev, 1993), as such, we can understand the adoption of ISAs by SMPs through individual auditors. This is consistent with studies that criticised

ecological fallacy such as Hopkins (1982), Schwartz (1994) and Spicker (2001), which considered that a unit of analysis at individual level can be used to explain behaviour at entity level. Second, the justification is in the measurement of variables as used in this study (see Table 2).

The measurements captured items at organizational level, while responses were provided by individual auditors. In this aspect it may be difficult to classify this study as pure individual-based or pure organizational-based. As such, to analyse data at the individual level will help to understand the interrelationship between auditors and internal structure of SMPs. This is consistent with Schwartz (1994) who argued about studies being neither purely ecological (organizational level) nor purely individual.

Similarly, Divine et al. (1992) considered that some studies fall in between the spectrum of the two operations, whereby at one end of the spectrum there are standardized protocols to be followed, while at the other there are considerable variations due to differences in attitudes and knowledge. Lastly, the individual unit is selected based on statistical advantages related with it. These include avoiding aggregation bias whereby aggregated items give different meaning from individual items, hence creating a difference between expected value of a statistical parameter computed for aggregate-level variables and the true value of the corresponding individual-level variables (Tainton, 1990). Also, using individual auditors as a unit of analysis increases sample size and statistical power since the number of auditors is bigger compared to SMPs (Hopkins, 1982; Podsakoff& Organ, 1986; Silverman & Solmon, 1998).

4.5 Statistical Methods and Model Specification

Starting with descriptive statistics, the minimum, maximum, mean, standard deviation and standard error of the mean are used to gain an overview of the empirical data garnered from the survey responses. Although rudimentary by definition, descriptive statistics are nevertheless useful to ensure that characteristics of variables in a sample are properly organised and summarised (Fisher & Marshall, 2008). Next, inferential statistical analysis proceeds in two stages. First, as a precursor, correlation analysis was performed to test the existence of relationships and assess the extent of multicollinearity. Second, the study carried out a canonical correlation analysis (CCA) because there are multiple dependent and independent variables (as per Fig. 1 and Table 2).

Opting for CCA here was consistent with Fornell and Larcker (1980) who argued that accounting studies are often concerned with examining the interrelationships between two sets of variables rather than a single dependent variable with one or more independent variables as per the norm in more conventional regression analyses. CCA proceeded according to good practice standards in the literature (Dattalo 2010; Hair et al.,2010; Jang et al., 2008; Montabon et al., 2007; Ragland, 1967; Shafto et al.,1997; Sherry & Henson, 2005), and was carried out in five stages:

(a) Evaluating the statistical significance of the full canonical model;
(b) Conducting redundancy analysis to determine the most explanatory canonical function;
(c) Interpreting the canonical loadings of the selected canonical function;
(d) Determining the total canonical solution using communality coefficients and the sum of squares contribution of each variable; and
(e) Validation and diagnosis of the solution by deleting one variable at a time to determine the stability of the loadings.

Based on the five stages, the relationship is presented in the following CCA empirical model, consistent with Marlow (1983) and Stowe, et al. (1980):

$$g(FINRES, HUMRES, REGEF, CLICA, TECHNO, ORGANCUL, ORGANSTRA, ORGANSTRU) = f(QUALRE, ETHIRE, ACCECORE, HUMREQ, ENGAPERE, MONIRE)$$

Whereby:

Factors for ISAs adoption

FINRES = availability of financial resources
HUMRES = availability of human resources
REGEF = regulatory enforcement
CLICA = client capacity
TECHNO = technology
ORGANCUL = organizational culture
ORGANSTRA = organizational strategy
ORGANSTRU = organizational structure

Successful ISAs adoption indicators

QUALRE = quality requirements
ETHIRE = ethical requirements
ACCECORE = acceptance and continuation requirements
HUMREQ = human resource quality requirements
ENGAPERE = engagement and performance requirements
MONIRE = monitoring requirements

5. Results

5.1 Descriptive Statistics

Table 4 presents the descriptive statistics. Average scores vary markedly across the independent variables with *REGEF* ($\bar{x}$ = 38.372, SD = 6.279) and *FINRES* ($\bar{x}$ = 35.655, SD = 8.164) exhibiting the highest scores. The lowest average score is observed with respect to *TECHNO* ($\bar{x}$ = 15.354, SD = 1.625). There is also substantial variation in scores across the dependent variables. In this case, the variables with the highest average scores are *ETHIRE* ($\bar{x}$ = 36.956, SD = 6.990) and *ENGAPERE* ($\bar{x}$ = 36.159, SD = 5.929); whilst the lowest average score is observed with respect to *QUALRE* ($\bar{x}$ = 20.018, SD = 3.375).

Table 4: Descriptive Statistics

Variables	N	Min.	Max.	Mean ($\bar{x}$)	Std. deviation	Std. error of mean
Independent						
FINRES	113	13.00	49.00	35.655	8.164	0.768
HUMRES	113	8.00	40.00	32.743	6.990	0.658
CLICA	113	13.00	30.00	22.664	4.673	0.440
REGEF	113	20.00	49.00	38.372	6.279	0.591
TECHNO	113	11.00	19.00	15.354	1.625	0.153
ORGANCUL	113	15.00	28.00	22.142	2.584	0.243
ORGANSTRA	113	15.00	25.00	20.796	2.623	0.247
ORGANSTRU	113	12.00	30.00	23.292	4.198	0.395
Dependent						
QUALRE	113	10.00	25.00	20.018	3.375	0.318
ETHIRE	113	18.00	45.00	36.956	6.990	0.658
ACCECORE	113	14.00	25.00	20.717	2.998	0.282
HUMREQ	113	19.00	40.00	32.770	5.182	0.488
ENGAPERE	113	19.00	45.00	36.159	5.929	0.558
MONIRE	113	12.00	25.00	20.513	3.083	0.290

5.2 Inferential Statistics: Correlation Analysis

Table 5 presents the results from correlation analyses. The results show that most independent variables exhibit significant relationships with dependent variables, at least at a 5% significance level. Further, correlation coefficients between independent (dependent) variables range between -0.010 and 0.597 (0.297 and 0.698). Therefore, whilst most bivariate associations are statistically significant, the magnitude of the generated correlation coefficients never exceeds the limit of 0.90 as suggested by Hairet al. (2010), hence indicating that there is no multicollinearity problem, which allowed variables to be amenable to the CCA.

Table 5: Bivariate Correlation Matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
FINRES (1)	1.000													
HUMRES (2)	0.316**	1.000												
CLICA (3)	0.482**	0.149	1.000											
REGEF (4)	0.159	0.206*	-0.010	1.000										
ORGANCUL (5)	0.254**	0.309**	0.330**	.267**	1.000									
TECHNO (6)	0.523**	0.328**	0.570**	0.039	0.584**	1.000								
ORGANSTRA (7)	-0.059	-0.086	-0.201	-0.028	-0.002	-0.109	1.000							
ORGANSTRU (8)	0.270**	0.072	0.143	0.295**	0.366**	0.214*	0.090	1.000						
QUALRE (9)	0.162	0.336**	0.272**	0.116	0.556**	0.590**	-0.007	0.004	1.000					
ETHIRE (10)	0.359**	0.255**	0.175	0.343**	0.371**	0.484**	0.041	0.229*	0.556**	1.000				
ACCECORE (11)	0.130	0.273**	0.070	0.328**	0.300**	0.299**	-0.050	0.329**	0.297**	0.398**	1.000			
HUMREQ (12)	0.290**	0.195*	0.023	0.206*	0.363**	0.333**	-0.131	0.253**	0.311**	0.416**	0.609**	1.000		
ENGAPERE (13)	-0.039	0.053	0.033	0.135	0.279**	0.284**	0.050	0.398**	0.372**	0.459**	0.675**	0.560**	1.000	
MONIRE (14)	0.189*	0.176	0.108	0.087	0.117	0.157	-0.021	0.234*	0.342**	0.263**	0.430**	0.430**	0.444**	1.000

Note: **Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed).

5.3 Inferential Statistics: Canonical Correlation Analysis

Table 6(a) reports results pertaining to the first stage of CCA whereby the full canonical model is evaluated to determine whether there are significant relationships between independent and dependent variables. Specifically, four statistical tests were used to evaluate the statistical significance of the full canonical model: Pillais's (1.479), Hotelling's trace (2.668), Wilks' lambda (0.145) and Roy's root (1.428) were all found to be significant at the 1% significance level. Focussing on Wilks' lambda—the most commonly used of these four tests (Sherry & Henson, 2005)—the results indicate that the full canonical model has a large effect size and explains around 85% of the variance shared between factors explaining adoption, and measurements explaining successful adoption.[7]

Table 6(b) represents six canonical functions (CFs) generated by CCA (because, firstly, there are six dependent variables and, secondly, there are more independent variables than dependent variables). Four of these were found to be significant at the 5% level: 1st CF (R_c = 0.767, R_c^2 = 0.588, p<0.01); 2nd CF (R_c = 0.601, R_c^2 = 0.361, p<0.01); 3rd CF (R_c = 0.534, R_c^2 = 0.285, p<0.01); and 4th CF (R_c = 0.380, (R_c^2 = 0.144, p<0.05). Neither the 5th nor the 6th CF were found to be significant.

Table 6: Full CCA Model: Significance and Fit

6(a) Multivariate tests of significance

Statistic	Value	Appx. F	Hyp. DF	Error DF	Probability
Pillais's	1.479	4.917	48	624.000	0.000
Lawley-Hotelling trace	2.668	4.256	48	584.000	0.000
Wilks's lambda	0.145	5.410	48	491.184	0.000
Roy's largest root	1.428	18.565	8	104.000	0.000

6(b) Measures of overall model fit

Canonical function	Canonical Correlation (R_c)	Canonical R_c^2	Wilks' Statistic	F-Statistic	Probability
1	0.767	0.588	0.145	4.917	0.000
2	0.601	0.361	0.352	3.404	0.000
3	0.534	0.285	0.552	2.740	0.000
4	0.380	0.144	0.772	1.851	0.028
5	0.250	0.063	0.902	1.363	0.215
6	0.194	0.038	0.962	1.359	0.280

The second stage of CCA involved redundancy analysis based on the four significant CFs from the first stage. Here, each CF was evaluated to quantify its explanatory utility vis-a-vis the relationship between the dependent and independent variables. The results, presented in Table 7, show that the total redundancy index for the independent variable set (factors explaining adoption) was 0.22. Therein, the 1st CF explained 63.2% of the total redundancy, and was thus considered the appropriate choice to be taken forward to the next stage.

[7]According to Sherry and Henson (2005) Wilks's lambda can be used to determine the effect size of the full canonical model (r^2 metric) because it represents the variance unexplained by the model. Hence, 1-Wilk's lambda gives an overall effect of 0.855 for the full canonical model in this study.

Table 7: Canonical Redundancy Analysis

Canonical function	Variance extracted	R_c^2	Redundancy Index	Redundancy (%)
Independent variables				
1	0.236	0.588	0.139	63.2
2	0.094	0.361	0.034	15.5
3	0.131	0.285	0.037	16.8
4	0.069	0.144	0.010	4.5
			0.220	
Dependent variables				
1	0.288	0.588	0.169	59
2	0.070	0.361	0.025	8.8
3	0.279	0.285	0.080	27.7
4	0.091	0.144	0.013	4.5
			0.287	

On to the third stage, the interpretation of canonical loadings of the 1st CF is presented in Table 8 (third column). The results indicate that the adoption of ISAs by SMPs in Tanzania has significant positive relationship with financial resources (*FINRES*), human resources (*HUMRES*), regulatory enforcement (*REGEF*), clients´ capacity (*CLICA*), technology (*TECHNO*), organisational culture (*ORGANCUL*), organisational strategy (*ORGANSTRA*), and organisational structure (*ORGANSTRU*).

Table 8: Canonical Weights, Loadings and Cross Loadings for the First Canonical Function

	Canonical weights (Coef)	Canonical loadings (r_s)	Cross loadings
Independent variables			
FINRES	-0.025	-0.382	-0.293
HUMRES	-0.156	-0.518	-0.397
REGEF	-0.242	-0.324	-0.249
CLICA	0.189	-0.317	-0.243
TECHNO	-0.649	-0.813	-0.623
ORGANCUL	-0.474	-0.776	-0.595
ORGANSTRA	-0.004	0.084	0.065
ORGANSTRU	0.365	-0.010	-0.007
Dependent variables			
QUALRE	-0.825	-0.883	-0.677
ETHIRE	-0.205	-0.659	-0.505
ACCECORE	-0.289	-0.428	-0.328
HUMREQ	-0.309	-0.493	-0.378
ENGAPERE	0.373	-0.267	-0.205
MONIRE	0.291	-0.137	-0.105

Six of the independent variables associated with these factors all have loadings greater than 0.30, a benchmark which follows the norm in the literature

(Tabachnik & Fidell, 2007; Hair et al., 2010; Ragland, 1967): *TECHNO* (-0.813), *ORGANCUL* (-0.776), *HUMRES* (-0.578), *FINRES* (-0.382), *REGEF* (-0.324) and *CLICA* (-0.317). Next, four out of six dependent variables exhibited loadings above this same benchmark: *QUALRE* (-0.883), *ETHIRE* (-0.659), *HUMREQ* (-0.493) and *ACCECORE* (-0.428). Thus, in sum, results in Table 7 indicate that *TECHNO*, *ORGANCUL*, *HUMRES*, *FINRES*, *REGEF* and *CLICA* are significant and positively related to *QUALRE*, *ETHIRE*, *HUMREQ* and *ACCECORE*.

The fourth stage of CCA involved determining the contribution of each variable using structure coefficients (*rs*), squared structure coefficients (r_s^2), and communality coefficients (h^2) as presented in Table 9. The sum of squares contributed by each item to each function as presented in Table 9. Starting with function 1, there are three independent variables with high loadings: *TECHNO* (r_s = -0.813; r_s^2 = 66.04%), *ORGANCUL* (r_s = -0.776; r_s^2 = 60.27%), and *HUMRES* (r_s = -0.518; r_s^2 = 26.84%). These three variables contribute significantly to the factors for adoption of ISAs. In addition, their coefficients have negative signs, as do the three dependent variables that exhibit high loadings; namely *QUALRE* (r_s = -0.883; r_s^2 = 77.9%), *ETHIRE* (r_s = -0.659; r_s^2 = 43.4%). and *HUMREQ* (r_s = -0.493; r_s^2= 24.3%). These three measurements are considered primary indicators of successful adoption.

Table 9: Canonical Solution for Successful ISA Adoption by SMPs

Variable	1st CF		2nd CF		3rd CF		4th CF		h^2
Independent variables									
	r_s	r_s^2	r_s	r_s^2	r_s	r_s^2	r_s	r_s^2	
FINRES	-0.382	14.62	-0.717	51.47	0.111	1.23	-0.032	0.10	67.42
HUMRES	-0.518	26.84	-0.197	3.87	0.056	0.31	0.385	14.80	45.82
REGEF	-0.324	10.51	-0.356	12.70	0.510	25.99	0.301	9.09	58.28
CLICA	-0.317	10.05	0.040	0.16	-0.043	0.19	0.344	11.83	22.23
TECHNO	-0.813	66.04	0.093	0.86	0.190	3.59	-0.052	0.27	70.76
ORGANCUL	-0.776	60.27	0.174	3.01	0.085	0.73	-0.269	7.22	71.24
ORGANSTRA	0.084	0.71	0.176	3.10	0.135	1.83	0.227	5.16	10.80
ORGANSTRU	-0.010	0.01	0.001	0.00	0.840	70.63	-0.254	6.47	77.11
Redundancy Index	0.139		0.034		0.037		0.01		
Dependent variables									
QUALRE	-0.883	77.92	0.305	9.29	-0.037	0.13	0.072	0.51	87.86
ETHIRE	-0.659	43.43	-0.234	5.48	0.534	28.50	0.065	0.42	77.83
ACCECORE	-0.428	18.28	0.000	0.00	0.706	49.87	0.046	0.21	68.36
HUMREQ	-0.493	24.33	-0.278	7.74	0.374	13.97	-0.656	42.99	89.03
ENGAPERE	-0.267	7.13	0.422	17.77	0.780	60.84	-0.322	10.39	96.12
MONIRE	-0.137	1.86	-0.136	1.85	0.372	13.83	0.011	0.01	17.56
Redundancy Index	0.169		0.025		0.08		0.013		

Note: Structure coefficients (r_s) greater than 0.30 are underlined. Communality coefficients (h^2) greater than 30% are underlined.

According to the communality coefficients (h^2) presented in Table 9, six factors were found to contribute significantly as independent variables: *ORGANSTRU* (h^2 = 77%), *ORGANCUL* (h^2 = 71.2%), *TECHNO* (h^2 = 70.8%), *FINRES* (h^2 = 67.4%), *REGEF* (h^2 = 58.3%), and *HUMRES* (h^2 = 45.8%). Thus, *ORGANSTRU*, which was loading below

0.30 in the 1st CF (r_s = 0.01), contributed most to the solution. This is because, beyond its poor performance with respect to the 1st CF, this variable performed better with respect to the 3rd CF (67.6% of the total sum of squares) (Table 10). Regarding the dependent variables, communality coefficients (h^2) indicate that *ENGAPERE* contributes very substantially to the canonical solution (h^2 = 96%) despite its low loading in the 1st CF (r_s = -0.267). This is because, beyond the 1st CF, this variable contributes to the 2nd CF (42.2%), 3rd CF (36.4%), and the 4th CF (about 19%) (Table 9). Thus, using communality coefficients (h^2), and expressing loadings as percentages of respective sums of squares (as suggested by Sherry and Henson (2005), and Ragland (1967)) has helped to identify useful variables for the CCA solution. This is the case even where they did not load adequately in the 1st CF. The outcome of this stage is that two variables, *ORGANSTRU* (independent) and *ENGAPERE* (dependent) were added for the purposes of the interpretation of the final solution.

Table 10: Contribution of Independent and Dependent Variables To Sums of Squares in Four Canonical Functions

Variables	1st CF			2nd CF			3rd CF			4th CF		
			Contrib.			Contrib.			Contrib.			Contrib.
	r_s	r_s^2	(%)	r_s	r_s^2	(%)	r_s	r_s^2	(%)	r_s	r_s^2	(%)
Independent Variables												
FINRES	-0.382	0.146	7.735	-0.717	0.515	68.471	0.111	0.012	1.172	-0.032	0.001	0.189
HUMRES	-0.518	0.268	14.195	-0.197	0.039	5.151	0.056	0.003	0.299	0.385	0.148	26.942
REGEF	-0.324	0.105	5.559	-0.356	0.127	16.889	0.510	0.260	24.873	0.301	0.091	16.538
CLICA	-0.317	0.100	5.315	0.040	0.002	0.209	-0.043	0.002	0.178	0.344	0.118	21.536
TECHNO	-0.813	0.660	34.932	0.093	0.009	1.144	0.190	0.036	3.437	-0.052	0.003	0.486
ORGANCUL	-0.776	0.603	31.882	0.174	0.030	4.009	0.085	0.007	0.695	-0.269	0.072	13.147
ORGANSTRA	0.084	0.007	0.377	0.176	0.031	4.127	0.135	0.018	1.750	0.227	0.052	9.390
ORGANSTRU	-0.010	0.000	0.005	0.001	0.000	0.000	0.840	0.706	67.594	-0.254	0.065	11.774
Sum of Squares		**1.891**	**100.000**	**-0.787**	**0.752**	**100.000**	**1.884**	**1.045**	**100.000**	**0.650**	**0.549**	**100.000**
Total contribution>15%			66.8			85.4			92.5			65.0
Dependent Variables												
QUALRE	-0.883	0.779	45.053	0.305	0.093	22.057	-0.037	0.001	0.081	0.072	0.005	0.938
ETHIRE	-0.659	0.434	25.113	-0.234	0.055	13.015	0.534	0.285	17.049	0.065	0.004	0.764
ACCECORE	-0.428	0.183	10.568	0.000	0.000	0.000	0.706	0.499	29.837	0.046	0.002	0.393
HUMREQ	-0.493	0.243	14.066	-0.278	0.077	18.367	0.374	0.140	8.361	-0.656	0.430	78.833
ENGAPERE	-0.267	0.071	4.122	0.422	0.178	42.170	0.780	0.608	36.398	-0.322	0.104	19.049
MONIRE	-0.137	0.019	1.078	-0.136	0.019	4.392	0.372	0.138	8.273	0.011	0.000	0.023
Sum of Squares		**1.730**	**100.000**		**0.421**	**100.000**		**1.671**	**100.000**		**0.545**	**100.000**
Total contribution>15%			70.2			82.6			83.3			97.9

Note: Entries with contributions greater than 15% are underlined.

The fifth and final stage of CCA involved validation and diagnosis, as suggested by different authors, to gauge the stability of canonical loadings that helps take care of the effect of sample size (Barcikowski & Stevens, 1975; Hair et al., 2010; Thorndike & Weiss, 1973; Ragland, 1967). The results, as presented in Table 11, show that canonical correlations are stable (R_c ranged only between 0.715 and 0.767, and R_c^2 ranged between 0.511 and 0.588). Further, the canonical loadings are consistent when independent variables are deleted one at a time, which further testifies to the robustness of the results.

Table 11: Sensitivity Analysis

	With all variables	Results after deletion of							
		FINRES	*HUMRES*	*REGEF*	*CLICA*	*TECHNO*	*ORGANCUL*	*ORGANSTRA*	*ORGANSTRU*
Canonical correlation (Rc)	0.767	0.767	0.760	0.753	0.760	0.715	0.730	0.767	0.744
Canonical correlation squared (Rc^2)	0.588	0.588	0.578	0.567	0.578	0.511	0.533	0.588	0.554
Independent Variables									
FINRES	0.382	omitted	0.385	0.251	0.351	0.523	0.442	0.383	0.361
HUMRES	0.518	0.396	omitted	0.376	0.521	0.573	0.563	0.518	0.516
REGEF	0.324	0.246	0.320	omitted	0.309	0.337	0.428	0.324	0.377
CLICA	0.317	0.244	0.312	0.241	omitted	0.321	0.336	0.317	0.311
TECHNO	0.813	0.624	0.821	0.616	0.819	omitted	0.854	0.812	0.851
ORGANCUL	0.776	0.597	0.786	0.601	0.781	0.745	omitted	0.776	0.808
ORGANSTRAT	-0.084	-0.063	-0.085	-0.066	-0.073	-0.150	-0.063	omitted	-0.060
ORGANSTRU	0.010	0.008	0.011	-0.024	-0.006	-0.102	-0.104	0.010	omitted
Shared variance	0.236	0.249	0.235	0.254	0.254	0.201	0.222	0.269	0.228
Redundancy	0.139	0.147	0.136	0.144	0.147	0.103	0.118	0.158	0.159
Dependent Variables									
QUALRE	0.883	0.887	0.877	0.910	0.906	0.770	0.849	0.882	0.877
ETHIRE	0.659	0.656	0.667	0.582	0.638	0.566	0.768	0.659	0.731
ACCECORE	0.428	0.430	0.408	0.362	0.415	0.305	0.533	0.428	0.575
HUMREQ	0.493	0.489	0.507	0.472	0.438	0.484	0.498	0.494	0.567
ENGAPERE	0.267	0.275	0.275	0.257	0.263	0.010	0.342	0.267	0.472
MONIRE	0.137	0.135	0.117	0.119	0.132	0.121	0.202	0.137	0.225
Shared variance	0.288	0.289	0.288	0.267	0.279	0.209	0.333	0.288	0.371
Redundancy	0.169	0.170	0.166	0.151	0.162	0.107	0.178	0.169	0.206

6. Discussion

The aim of this study was to assess the influence of resource availability (financial and human resources), regulatory environment (regulatory enforcement and client capacity), and organisational characteristics (technology, culture, strategy and structure) on successful adoption of ISAs. These factors were assessed in terms of their relationship with six different measurements of successful adoption of ISAs, namely: quality requirements, ethical requirements, acceptance and continuance requirements, human resource requirements, engagement and performance requirements, and monitoring requirements. These measurements were generated from ISAs and ISQC 1.

According to the results of CCA, there are five (out of the six) significant measurements of successful adoption, namely: quality requirements, ethical requirements, acceptance and continuance requirements, human resource requirements, as well as engagement and performance requirements. This finding is generally consistent with several studies in the literature (Bell et al., 2002; Colbert et al., 1996; Drira, 2013; Duff2004; Epps & Messier Jr., 2007; Jones III & Norman, 2006). Monitoring requirements are not a significant measure of successful adoption of ISAs for the sample used herein. This could be because these requirements are subsumed in other requirements such as quality requirements, acceptance and continuance requirements, as well as engagement and performance. This lack of significance, which is attributable to monitoring requirements, is consistent with the notion that SMPs pay less attention to monitoring activities (Lennox & Pittman, 2010).

In terms of factors, these were generated based on five different theoretical frameworks: RBV, ETR, institutional theory, contingency theory, and the theory of administrative behaviour. Based on the factors, eight hypotheses were formulated and tested using CCA. Both factors concerning resource availability (availability of financial resources (*H1*) and human resources (*H2*)) were found to be positively related to successful adoption of ISAs. This finding is consistent with earlier studies on the availability of financial resources (Boolaky & Soobaroyen, 2017; Shima & Yang, 2012; Yong, 2013) and human resources (Bröcheler et al., 2004; Duhovnik, 2011; Phua et al., 2011; Yong 2013). These findings are also consistent with the RBV, which considers that the availability of resources is a competitive advantage.

Next, two factors pertaining to the regulatory environment were also tested: regulatory enforcement (H3), and client capacity (H4). Results suggest both factors are positively related with successful adoption of ISAs. This is consistent with two theoretical frameworks—ETR and the institutional theory—indicating that both formal and informal regulatory environments influence successful adoption of ISAs. In terms of extant empirical literature regarding regulatory enforcement, these findings are consistent with previous studies (e.g., by Boolaky & Soobaroyen, 2017; Datar & Alles, 1999; Dye, 1993; Offermanns & Vanstraelen, 2014; Simunic et al., 2015; Ye & Simunic, 2013). However, in terms of client capacity, whilst the findings of this study suggest that this has a positive influence on successful

adoption of ISAs, previous studies have generated mixed conclusions (Lennox & Pittman, 2010; Mennicken, 2008; Phua et al., 2011). This requires future works exploring the reasons for this equivocality.

For organisational characteristics, four factors were tested: technology (*H5*), organisational culture (*H6*), organisational strategy (*H7*), and organisational structure (*H8*). The findings from CCA indicate that three hypotheses (*H5, H6,* and *H8*) were supported; showing that technology, organizational culture, and organizational structure were found to be positively related to successful adoption of ISAs. Thus, high utilisation of technology in terms of using CAATs leads to successful adoption of ISAs. These findings support previous studies such as Kinney Jr. (1986), Köhler (2009) and Mennicken (2008). Similarly, the results indicate that mixed organisational structures (with centralised and decentralised characteristics) are associated with successful adoption of ISAs. This is consistent with several studies that have assessed the effect of organisational structure on organisational effectiveness (Ein-Dor & Segev, 1982; Habib &Victor, 1991). However, this is the first study to specifically test the effect of organisational structure on the adoption of ISAs.

Organisational strategy (*H7*), on the other hand, was found not to have a significant relationship with successful adoption of ISAs. This is consistent with Mennicken (2008), but diverges from Grindley (1995) who argued for strategies to increase the likelihood of standards being successfully adopted. One plausible explanation for not involving strategy is that auditing standards, like accounting standards, are considered poor reference points because they change frequently (Mennicken, 2008), hence adoption becomes an operational issue, and not a strategic one.

7. Conclusions

The findings of this study on factors affecting successful adoption of ISAs found that five out of six measurements—quality, ethical, acceptance and continuance, human resources, as well as engagement and performance—are important. Furthermore, the findings show that successful adoption of ISAs is related to different groups of factors. The first group is related to resource availability, and contains two factors: financial resources, and human resources. The second group is regulatory environment, which again comprises two factors: regulatory enforcement, and client capacity. The third and final group of factors are those associated with organisational characteristics; comprising technology, culture, and structure. All these factors have positive relationship with successful adoption of ISAs. Only organisational strategy in the organisational characteristics group was found to be insignificant.

In terms of theoretical implications, the results suggest that more than one theory (in this study five theories were used) should be used to identify factors for testing. In other words, the tendency for the factors generated in this study to be significant determinants of successful adoption clearly suggests that taking a plural—rather than a parochial—approach to theoretical framings is important. From a practical perspective, the results should be of interest to auditing firms, professional and

regulatory bodies. In the case of SMPs, they need to take into consideration clients, culture, and structure; in addition to technology and resources when adopting ISAs. For professional bodies, since most SMPs are passive as per IFAC (2016), they should support them to adequately use marketing techniques to attract clients, which can help them increase financial resources as well as improve client capacity. In addition, professional bodies can help SMPs in terms of technology.

The study also has policy implications to regulatory bodies. First, to ensure that ISAs adopted are not in favour of large auditing firms, there is a need of having clear policies on the adoption of ISAs and the participation of SMPs. Second, regulatory bodies should not only focus on mandatory compliance but also develop policies that will help increase the capacity of audit clients, as well as ensuring availability of resources to SMPs. Building client capacity will increase demand for audit reports based on ISAs, and hence create equilibrium between demand and supply of auditing services. This approach will help improve audit quality.

Finally, there is ample scope for future research in this domain, and the limitations of this study may provide opportunities in this respect. First, it would be useful and interesting to apply the methodology developed herein in another country context to gauge the extent to which the results generalise beyond SMPs and beyond Tanzania. Second, this study identified and tested factors based on multiple theories. It could be fruitful to take a different approach to factor identification whereby, as a precursor to survey development, context-specific stakeholders are asked to identify salient factors. Gauging the extent to which theory-driven factor choice corresponds with stakeholder-driven factor choice could be informative. Furthermore, this study used primary data generated from auditors; hence, it is possible that using secondary data or using qualitative approach—involving only partners/auditors as the decisions-makers to adopt the ISAs standards—will produce different results.

References

Anantharaman, D. 2012. Comparing Self-Regulation and Statutory Regulation: Evidence from the Accounting Profession. *Accounting, Organizations and Society*, *37*(2): 55–77.

Ballas, A. A. & C. Tzovas. 2010. An Empirical Investigation of Greek Firms' Compliance to IFRS Disclosure Requirements. *International Journal of Managerial and Financial Accounting*, *2*(1): 40.

Ballas, A. A. & I. Fafaliou. 2008. Market Shares and Concentration in the EU Auditing Industry: The Effects of Andersen's Demise. *International Advances in Economic Research*, *14*(4): 485–497.

Banker, R.D., H. Chang & Y.C. Kao. 2002. Impact of Information Technology on Public Accounting Firm Productivity. *Journal of Information Systems*, 16(2): 209–222.

Barcikowski, R. S. & J.P. Stevens. 1975. A Monte Carlo Study of the Stability of Canonical Correlations, Canonical Weights and Canonical Variate-Variable Correlations. *Multivariate Behavioral Research*, 10(3): 353–364.

Bedard, J.C., D.R. Deis, M.B. Curtis & J.G. Jenkins. 2008. Risk Monitoring and Control in Audit Firms: A Research Synthesis. *Auditing: A Journal of Practice & Theory*, 27(1):187–218.

Bell, T.B., Bedard, J.C., Johnstone, K.M. & E.F. Smith. 2002. Krisksm: A Computerized Decision Aid for Client Acceptance and Continuance Risk Assessments", *Auditing: A Journal of Practice & Theory*, 21(2): 97–113.

Bergeron, F., L. Raymond & S. Rivard. 2004. Ideal Patterns of Strategic Alignment and Business Performance. *Information & Management*, 41(8): 1003–1020.

Boolaky, P. & K. Omoteso. 2016. International Standards on Auditing in the International Financial Services Centres: What Matters? *Managerial Auditing Journal*, 31(6/7): 727–747.

Boolaky, P.K. & T. Soobaroyen. 2017. Adoption of International Standards on Auditing (ISA): Do Institutional Factors Matter? *International Journal of Auditing*, 21(1): 59–81.

Bröcheler, V., S. Maijoor & A. Van Witteloostuijn. 2004. Auditor Human Capital and Audit Firm Survival: The Dutch Audit Industry in 1930–1992. *Accounting, Organizations and Society*, 29(7): 627–646.

Carson, E. 2014.Globalization of Auditing. In D. Hay, W.R. Knechel & M. Willekens. (eds.). *The Routledge Companion to Auditing*. Oxford: Routledge.

Chen, M.A. 2005. Rethinking the Informal Economy: Linkages with the Formal Economy and the Formal Regulatory Environment. UNU-WIDER, United Nations University.

Chow, C.W., G.L. Harrison, J.L. Mckinnon & A. Wu. 2002. The Organizational Culture of Public Accounting Firms: Evidence from Taiwanese Local and US Affiliated Firms. *Accounting, Organizations and Society,* 27(4): 347–360.

Colbert, J.L., M.S. Luehlfing & C.W. Alderman. 1996. Engagement Risk. *CPA Journal*, 66(3): 54.

Competition and Markets Authority (CMA). 2019. Statutory Audit Services Market Study. Final Report, 18 April 2019.

Craswell, A.T., J.R. Francis & S.L. Taylor.1995. Auditor Brand Name Reputations and Industry Specializations. *Journal of Accounting and Economics*. 20(3): 297–322.

Datar, S. & M. Alles. 1999. The Formation and Role of Reputation and Litigation in the Auditor–Manager Relationship. *Journal of Accounting, Auditing & Finance*, 14(4): 401–428.

Dattalo, P. 2014. A Demonstration of Canonical Correlation Analysis with Orthogonal Rotation to Facilitate Interpretation. Unpublished Manuscript, School of Social Work, Virginia Commonwealth University, Richmond, Virginia.

Denzin, N.K. 1973. The *Research Act: A Theoretical Introduction to Sociological Methods*, Transaction Publishers.

Dimaggio, P. J. & W.W. Powell. 1983. The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, 147–160.

Divine, G.W., J.T. Brown & L.M. Frazier. 1992. The Unit of Analysis Error in Studies About Physicians' Patient Care Behavior. *Journal of General Internal Medicine*, 7(6): 623–629.

Dowling, C. & S. Leech. 2007. Audit Support Systems and Decision Aids: Current Practice and Opportunities for Future Research. *International Journal of Accounting Information Systems*, 8(2): 92–116.

Drira, M. 2013. Toward a General Theory of Client Acceptance and Continuance Decisions. *Journal of Comparative International Management*, 16(1): 37–52.

Duff, A. 2004. *Auditqual: Dimensions of Audit Quality*. Edinburgh: Institute of Chartered Accountants of Scotland.

Duhovnik, M. 2011. Time to Endorse the ISAs for European Use: The Emerging Markets' Perspective. *Accounting in Europe*, 8(2): 129–140.

Dye, R.A. 1993. Auditing Standards, Legal Liability, and Auditor Wealth. *Journal of Political Economy*, 101(5): 887–914.

Ein-Dor, P. & E. Segev.1982. Organizational Context and MIS Structure: Some Empirical Evidence. *MIS Quarterly*, 6(3): 55–68.

Emmanuel, C., D. Otley & K. Merchant. 1990. Accounting for Management Control. In *Accounting for Management Control*, Springer, Boston, MA, 357–384.

Epps, K. K. & Bw. F. Messier Jr. 2007. Engagement Quality Reviews: A Comparison of Audit Firm Practices", *Auditing: A Journal of Practice & Theory*, 26(2): 167–181.

Federation of European Accountants (FEE).2015. Overview of ISA Adoption in the European Union. FEE Survey April 2015.

Féres, J. & A. Reynaud. 2006. Does Formal or Informal Environmental Regulation Have An Impact on Costs? An Empirical Analysis of the Brazilian Manufacturing Industry. *LERNA,* University of Toulouse Working Papers, 6: 209.

Fey, C.F. & D.R. Denison. 2003. Organizational Culture and Effectiveness: Can American Theory Be Applied in Russia? *Organization Science*, 14 (6): 686–706.

Field, A. 2013. *Discovering Statistics Using IBM SPSS Statistics.*4th Edition, SAGE Publications Ltd.

Fischer, M.J. & M.W. Dirsmith. 1995. Strategy, Technology, and Social Processes Within Professional Cultures: A Negotiated Order, Ethnographic Perspective. *Symbolic Interaction*, 18(4): 381–412.

Fontes, A., L.L. Rodrigues & R. Craig. 2005. Measuring Convergence of National Accounting Standards with International Financial Reporting Standards. in *Accounting Forum* (Vol. 29, No. 4, Pp. 415–436). Taylor & Francis.

Fornell, C. & D.F. Larcker. 1980. The Use of Canonical Correlation Analysis in Accounting Research", *Journal of Business Finance & Accounting*, 7(3): 455–474.

Fortin, H., A.C. Hirata Barros & K. Cutler. (2010). *Accounting for Growth in Latin America and the Caribbean: Improving Corporate Financial Reporting to Support Economical Development*. The World Bank.

Fuerman, R.D. 2000. Auditors and the Post-Litigation Reform Act Environment. *Research in Accounting Regulation*, 14:199–220.

Greenwood, R. & C.R. Hinings. 1996. Understanding Radical Organizational Change: Bringing Together the Old and the New Institutionalism. *Academy of Management Review*, 21(4): 1022–1054.

Greenwood, R. & R. Suddaby. 2006. Institutional Entrepreneurship in Mature Fields: The Big Five Accounting Firms. *Academy of Management Journal*, 49(1): 27–48.

Grindley, P. 1995. *Standards, Strategy and Policy: Cases and Stories*. Oxford University Press, Oxford.

Habib, M.M. & B. Victor. 1991. Strategy, Structure, and Performance of US Manufacturing and Service MNCS: A Comparative Analysis. *Strategic Management Journal*, 12(8): 589–606.

Hair, J.F. Black. W.C., B.J. Babin & R.E. Anderson. 2010. Multivariate Data Analysis: A Global Perspective, 7th Edition, Pearson, NJ.

Hopkins, K. D. 1982. The Unit of Analysis: Group Means Versus Individual Observations. *American Educational Research Journal*. 19(1): 5–18.

Hopper, T. & M. Major. 2007. Extending Institutional Analysis Through Theoretical Triangulation: Regulation and Activity-Based Costing in Portuguese Telecommunications. *European Accounting Review*, 16(1): 59–97.

Horley, J. 1988. The Units of Analysis Problem in Psychology: An Examination and Proposed Reconciliation. in *Recent Trends in Theoretical Psychology*: 177–187). Springer, New York.

House of Commons BEIS. 2019. The Future of Audit. Nineteenth Report of Session 2017–2019, 26 March 2019.

Hsu, Y.H. & W. Fang. 2009. Intellectual Capital and New Product Development Performance: The Mediating Role of Organizational Learning Capability. *Technological Forecasting and Social Change,* 76(5): 664–677.

Humphrey, C., A. Loft & A. Samsonova-Taddei. 2014. Not Just a Standard Story: The Rise of International Standards on Auditing. in the *Routledge Companion to Auditing* (pp. 183–200). Routledge.

Huss, H.F. & F.A. Jacobs. 1991. Risk Containment: Exploring Auditor Decisions in the Engagement Process. *Auditing: A Journal of Practice & Theory*, 10(2):16–32.

Institute of Chartered Accountants in England and Wales (ICAEW). 2020 (February, 16). Knowledge Guide to International Standards on Auditing (ISA).Retrieved from https://www.icaew.com/library/subject-gateways/auditing/knowledge-guide-to-international-standards-on-auditing.

International Federation of Accountants (IFAC). 2012. Basis of ISA Adoption by Jurisdiction. IFAC Compliance Progam. Retrieved from https://www.ifac.org/system/ files/uploads/ MBD/Basis-of-ISA-Adoption-by-Jurisdiction-August-2012.pdf

—. 2016. The Role of SMPs in Providing Business Support to SMEs, New Evidence: A Review of the Literature.

—. 2019. International Standards: 2019 Global Status Report.

Jones III, A. & C.S. Norman. 2006. Decision Making in a Public Accounting Firm: An Instructional Case in Risk Evaluation, Client Continuance, and Auditor Independence Within the Context of the Sarbanes-Oxley Act of 2002. *Issues in Accounting Education*, 21(4): 431–447.

Jonnergård, K., A. Stafsudd & U. Elg. 2010. Performance Evaluations as Gender Barriers in Professional Organizations: A Study of Auditing Firms. *Gender, Work & Organization*, 17(6): 721–747.

King, C. G. 1999. The Measurement of Harmonization in the Form and Content of the Auditor's Report in the European Union. *Journal of International Accounting, Auditing and Taxation*, *8*(1): 23–42.

Kinney Jr, W.R. 1986. Audit Technology and Preferences for Auditing Standards. *Journal of Accounting and Economics*, 8(1): 73–89.

Kitindi, E. 2000. The Small and Micro Enterprise Audit in Tanzania: Is It Worth the Efforts? Evidence from An Exploratory Study. The *African Journal of Finance and Management*, 8(2): 1–10.

Kleinman, G., B.B. Lin & D. Palmon. 2014. Audit Quality: A Cross-National Comparison of Audit Regulatory Regimes. *Journal of Accounting, Auditing & Finance*, 29(1): 61–87.

Knapp, T. R. 1977. The Unit-Of-Analysis Problem in Applications of Simple Correlation Analysis to Educational Research. *Journal of Educational Statistics*, 2(3): 171–186.

Knechel, W. R. 2013. Do Auditing Standards Matter? *Current Issues in Auditing*, *7*(2): A1-A16.

Köhler, A.G. 2009. Evaluation of the Possible Adoption of International Standards on Auditing (ISAs) in the EU. Report by the University of Duisberg-Essen to the European Commission. (Markt/2007/15/F), available at: http://ec.europa.eu/internal_market/ auditing/ isa/index_ en.htm#isastudy

Kumar, S. 2018. Understanding Different Issues of Unit of Analysis in a Business Research. *Journal of General Management Research*, 5(2): 70–82

Lennox, C. & J. Pittman. 2010. Auditing the Auditors: Evidence on the Recent Reforms to the External Monitoring of Audit Firms. *Journal of Accounting and Economics*, 49(1–2): 84–103.

Lin, K. Z. & K.H. Chan. 2000. Auditing Standards in China—A Comparative Analysis With Relevant International Standards and Guidelines. The *International Journal of Accounting*, *35*(4): 559–577.

Maijoor, S. & A. Van Witteloostuijn. 1996. An Empirical Test of the Resource-Based Theory: Strategic Regulation in the Dutch Audit Industry. *Strategic Management Journal*, 17(7): 549–569.

Mair, J. & C. Rata. 2004. Corporate entrepreneurship: Linking strategic roles to multiple dimensions of performance. Available at: http://ideas.repec.org/p/ebg/ iesewp/d-0551.html (accessed 18 February 2017).

Mautz, R.K. 1972. Toward a Philosophy of Auditing. In: Howard Stettler(ed.). *Auditing Looks Ahead*. (University of Kansas Printing Service.

Mautz, R. K. & H.A. Sharaf. 1961. The *Philosophy of Auditing* (No. 6). American Accounting Association.

Mayhew, B.W. & M.S. Wilkins. 2003. Audit Firm Industry Specialization as a Differentiation Strategy: Evidence from Fees Charged to Firms Going Public. *Auditing: A Journal of Practice & Theory*, 22(2): 33–52.

Mckinnon, C. C. 2014. Auditing the Auditors: Antitrust Concerns in the Large Company Audit Market. *NYUJL & Bus.*, *11*, 533.

Mennicken, A. 2008. Connecting Worlds: The Translation of International Auditing Standards into Post-Soviet Audit Practice. *Accounting, Organizations and Society*, 33(4–5): 384–414.

Miles, R.E. & C.C. Snow. 2003. *Organizational Strategy Structure and Process*. Stanford University Press, CA.

Morris, T. & L. Empson. 1998. Organisation and Expertise: An Exploration of Knowledge Bases and the Management of Accounting and Consulting Firms. *Accounting, Organizations and Society*, 23(5–6): 609–624.

Needle, D. 2010. *Business in Context: An Introduction to Business and Its Environment*. Cengage Learning EMEA.

Needles Jr, B. E., S. Ramamoorti & S.W. Shelton. 2002. The Role of International Auditing in the Improvement of International Financial Reporting. *Advances in International Accounting*, 15; 181–201.

Newbert, S.L. 2008. Value, Rareness, Competitive Advantage, and Performance: A Conceptual-Level Empirical Investigation of the Resource-Based View of the Firm. *Strategic Management Journal*, 29(7): 745–768.

Nguyen, A.T. & G. Gong. 2014. Measurement of Formal Convergence of Vietnamese Accounting Standards With IFRS. *Australian Accounting Review*, 24(2): 182–197.

Nutt, P.C. & D.C. Wilson. 2010. Crucial Trends and Issues in Strategic Decision Making. In *Handbook of Decision Making*. John Wiley, West Sussex, 3–29.

Offermanns, M. & A. Vanstraelen. 2014. Oversight and Inspection of Auditing. In D. Hay, W.R. Knechel & M. Willekens (eds.). *Routledge Companion to Auditing*. Routledge.

Phua, L.K., A.H. Lau & C. Patel. 2011. Competitive Advantages of Audit Firms in the Era of International Financial Reporting Standards: An Analysis Using the Resource-Based View of the Firm. In *International Conference on E-Business, Management and Economics,* Hong Kong.

Pinsonneault, A. & K. Kraemer. 1993. Survey Research Methodology in Management Information Systems: An Assessment. *Journal of Management Information Systems*, 10(2): 75–105.

Podsakoff, P. M. & D.W. Organ. 1986. Self-Reports in Organizational Research: Problems and Prospects. *Journal of Management*, 12(4): 531–544.

Pratt, J. & P. Beaulieu. 1992. Organizational Culture in Public Accounting: Size, Technology, Rank, and Functional Area. *Accounting, Organizations and Society*, 17(7): 667–684.

Qu, X. & G. Zhang. 2010. Measuring the Convergence of National Accounting Standards with International Financial Reporting Standards: The Application of Fuzzy Clustering Analysis. *International Journal of Accounting*, 45(3): 334–355.

Ragland, R.E. 1967. On Some Relations Between Canonical Correlation, Multiple Regression, and Factor Analysis. Doctoral Dissertation, University of Oklahoma.

Ramanna, K. 2015. *Political Standards: Corporate Interest, Ideology, and Leadership in the Shaping of Accounting Rules for the Market Economy*. University of Chicago Press, Chicago, IL.

Robinson, W. S. 1950. Ecological Correlations and the Behavior of Individuals. *American Sociological Review*, 15(3): 351–357.

Robson, K., H. Willmott, D. Cooper & T. Puxty. 1994. The Ideology of Professional Regulation and the Markets for Accounting Labour: Three Episodes in the Recent History of the UK Accountancy Profession. *Accounting, Organizations and Society*. 19(6): 527–553.

Schwartz, R. 1998. Auditors' Liability, Vague Due Care, and Auditing Standards. *Review of Quantitative Finance and Accounting*, 11(2): 183–207.

Schwartz, S. 1994. The Fallacy of the Ecological Fallacy: The Potential Misuse of a Concept and the Consequences. *American Journal of Public Health*, 84(5): 819–824.

Selvin, H. C. 1958. Durkheim's Suicide and Problems of Empirical Research. *American Journal of Sociology*, 63(6): 607–619.

Shafto, M.G., A. Degani & A. Kirlik. 1997. Canonical Correlation Analysis of Data on Human-Automation Interaction. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting,* 41(1): 62-65, SAGE Publications, Los Angeles, CA.

Sherry, A. & R.K. Henson. 2005. Conducting and Interpreting Canonical Correlation Analysis in Personality Research: A User-Friendly Primer. *Journal of Personality Assessment*, 84(1): 37–48.

Shields, K. E. (2014). *International Accounting Standard Setting: Lobbying and the Development of Financial Instruments Accounting*. PhD thesis, University of Leeds.

Silverman, S. & M. Solmon. 1998. The Unit of Analysis in Field Research: Issues and Approaches to Design and Data Analysis. *Journal of Teaching in Physical Education,* 17(3): 270–284.

Simnett, R. 2007. A Critique of the International Auditing and Assurance Standards Board. *Australian Accounting Review*, 17(42): 28–36.

Simunic, D.A. 2014. The Market for Audit Services. In D. Hay, W.R. Knechel & M. Willekens (eds.). *Routledge Companion to Auditing*, Routledge: 33–42.

Simunic, D.A., M. Ye & P. Zhang. 2015. Audit Quality, Auditing Standards, and Legal Regimes: Implications for International Auditing Standards. *Journal of International Accounting Research*, 14(2): 221–234.

—. 2017. The Joint Effects of Multiple Legal System Characteristics on Auditing Standards and Auditor Behaviour. *Contemporary Accounting Research*, 34(1): 7–38.

Singh, H. 2013. Anticompetitive Behaviour in the Audit Services Market by the Big Audit Firms: Evidence Over Time. *Corporate Ownership and Control*, *10*(2): 177.

Spicker, P. 2001. Poor Areas and the 'Ecological Fallacy'. *Radical Statistics*, 76: 38–49.

Stigler, G.J. 1971. The Theory of Economic Regulation. *Bell Journal of Economics and Management Science*, 2: 3–21.

Stowe, J.D., C.J. Watson & T.D. Robertson. 1980. Relationships Between the Two Sides of the Balance Sheet: A Canonical Correlation Analysis. *Journal of Finance*, 35(4): 973–980.

Svanström, T. 2016. Time Pressure, Training Activities and Dysfunctional Auditor Behaviour: Evidence from Small Audit Firms. *International Journal of Auditing*. 20(1): 42–51.

Tainton, B. E. 1990. The Unit of Analysis 'Problem' in Educational Research. *Journal of Educational Research*, 6(1): 4–19.

Thorndike, R. M. & D.J. Weiss. 1973. A Study of the Stability of Canonical Correlations and Canonical Components. *Educational and Psychological Measurement*, 33(1): 123–134.

Thurmond, V.A. 2001. The Point of Triangulation. *Journal of Nursing Scholarship*, 33(3): 253–258.

Van Auken, H.E., B.M. Doran & K.J. Yoon. 1993. A Financial Comparison Between Korean and US Firms: A Cross Balance Sheet Canonical Correlation Analysis. *Journal of Small Business Management*, 31(3): 73.

Van Der Tas, L. G. 1988. Measuring Harmonisation of Financial Reporting Practice. *Accounting and Business Research*, *18*(70): 157–169.

Venkatraman, N. 1989. Strategic Orientation of Business Enterprises: The Construct, Dimensionality, and Measurement. *Management Science*, 35(8): 942–962.

Weinberg, S. L. & R.B. Darlington. 1976. Canonical Analysis When Number of Variables Is Large Relative to Sample Size. *Journal of Educational Statistics*, 1(4): 313–332.

Ye, M. & D. Simunic. 2013. The Economics of Setting Auditing Standards. *Contemporary Accounting Research*, 30(3): 191–1215.

Yong, A.S. 2013. Adoption of Clarified International Standard of Auditing (ISAs) and International Standard of Quality Control (ISQC) in Small and Medium Practice (SMP) in Malaysia. Doctoral Dissertation, University of Malaya.

Yurdusev, A. N. 1993. 'Level of Analysis' and 'Unit of Analysis': A Case for Distinction. Millennium, 22(1): 77–88.

Zheng, W., B. Yang & G.N. Mclean. 2010. Linking Organizational Culture, Structure, Strategy, and Organizational Effectiveness: Mediating Role of Knowledge Management. *Journal of Business Research*, 63(7): 763–771

APPENDIX

Table A1: Definition of Independent and Dependent Variables

Variable	Definition/Measurement
Independent	
FINRES	A score taking a value between 10 and 50 based on responses provided to ten statements: a) amount of capital employed by the firm, b) low fee pressure, c) late payment of fees by client, d) adoption costs, e) training costs related to adoption, f) interpretation costs associated with new ISAs g) implementation costs of adopted ISA, h) human resource costs, i) cost of computer-assisted audit tools and techniques (CAATTs), j) cost-benefit analysis.
HUMRES	A score taking a value between 8 and 40 based on responses to eight statements: a) availability of an adequate pool of qualified staff, b) availability of training for auditors, c) availability of experienced auditors, d) availability of professionally qualified staff (with CPAs, ACCA etc), e) availability of in-house expertise to support adoption and implementation of ISA, f) availability of additional guidance on audit methodology, g) availability of staff with technical skills, h) availability of technical support for implementation after adoption.
CLICA	A score taking a value between 6 and 30 based on responses to six statements: a) size of client firms, b) types of client, c) level of ISA understanding by clients, d) clients perceptions of the usefulness of audit reports prepared in accordance to ISA requirements, e) pressure from government on clients to avail of audit reports based on auditing standards, f) capacity of clients to meet the cost of engagement.
REGEF	A score taking a value between 10 and 50 based on responses to ten statements: a) availability of professional support from NBAA, b) NBAA provides timely interpretative guidance and additional translation materials, c) NBAA provides quality interpretative guidance and additional translation materials, d) NBAA pressure on quality control, e) NBAA pressure on processing sufficient and appropriate audit evidence, f) legal requirements to file audit reports which have been audited according to ISA, g) legal requirements to file audit reports as per the Companies Act Section 170, h) legal requirements to employ a CPA to certify annual returns as per the Income Tax Act, i) legal requirements for the procurement of audit services, j) legal requirements to file audit reports as per the Auditors and Accountants Act of 1995.
TECHNO	A score taking a value between 4 and 20 based on responses to four statements: a) type of CAATTs utilised by the firm, b) level of utilisation of CAATTs, c) CAATTs linked to the auditor´s performance, d) suitability of CAATTs used by the firm.
ORGANCUL	A score taking a value between 6 and 30 based on responses to six statements: a) firm is results-oriented. not process-oriented, b) firm is employee-oriented and not job-oriented, c) firm is more professional than parochial, d) firm is more of an open system than a closed system, e) firm is more inclined to tight control than loose control, f) firm is more normative than pragmatic.

Variable	Definition/Measurement
ORGANSTRA	A score taking a value between 5 and 25 based on responses to five statements: a) building anticipation and excitement for change, b) firm sets specific adoption goals and communicates results, c) setting adoption as one of the KPIs of the firm, d) established guiding principles towards adoption, e) short-term and long-term adoption plans.
ORGANSTRU	A score taking a value between 6 and 30 based on responses to six statements: a) type of chain of command used, b) span of control applied by the firm, c) decision making style by the firm, d) extent of specialisation, e) extent of formalisation, f) extent of departmentalisation.
Dependent	
QUALRE	A score taking a value between 5 and 25 based on responses to five statements from ISAs and ISQC 1: a) established policies to promote internal culture recognising quality (ISQC 1.18, ISA 220), b) established procedures recognising quality, c) CEO/Managing Board Partner assumes responsibility for quality control system (ISQC 1.19), d) firm has documented quality control policies (ISA 200, ISQC 1.20), e) firm has documented quality control procedures.
ETHIRE	A score taking a value between 9 and 45 based on responses to nine statements from ISAs and ISQC 1: a) policies to provide reasonable assurance on compliance with IFAC code of ethics, b) procedures to provide reasonable assurance on compliance with IFAC code of ethics, c) policies on integrity are clear and well circulated, d) policies on objectivity are clear and well circulated, e) policies on professional competence and due care are clear and well circulated, f) everybody signs a confidentiality agreement, g) each auditor signs a declaration form every year, h) policies on professional behaviour are clear and well circulated, i) ensure compliance with independence requirements such as maintenance of adequate annual records.
ACCECORE	A score taking a value between 5 and 25 based on responses to five statements from ISAs and ISQC 1: a) established policies and procedures for the acceptance and continuance of engagements (ISA 315, ISA 230, ISA 240, ISQC 1.18), b) firm undertakes engagements for which it has reasonable assurance of competence to perform, c) firm undertakes engagements for which it has reasonable assurance of capabilities (in terms of time and resources) to perform, d) firm undertakes engagements for which it has reasonable assurance of knowledge about clients, e) firm rejects engagements for which it has reasonable assurance of knowledge about clients.
HUMREQ	A score taking a value between 8 and 40 based on responses to eight statements from ISAs and ISQC 1: a) staff are considered to be real assets and essential for ISA adoption, b) firm has well-documented professional development policies and procedures communicated to all staff, c) firm maintains files that record career development, d) firm maintains files that record staff competencies, e) firm maintains files that record professional development courses attended by staff, f) firm maintains files on the qualifications obtained by staff, g) firm maintains files on the work experience (including industry experience) of staff, h) firm maintains files that record performance appraisals for each individual.

Variable	Definition/Measurement
ENGAPERE	A score taking a value between 9 and 45 based on responses to nine statements from ISAs and ISQC 1: a) firm has established a system of quality control according to ISQC 1, ISA 300, 320 and 330, b) firm maintains a system of quality control according to ISQC 1, ISA 300, 320 and 330, c) firm has designed policies to provide reasonable assurance that engagements are performed in accordance with professional standards, d) firm has established policies to provide reasonable assurance that engagements are performed in accordance with professional standards, e) policies and procedures setting out the nature of engagement quality reviews (EQRs) are clear and well circulated, f) policies and procedures setting out the timing of (EQRs are clear and well circulated, g) policies and procedures setting out the extent of EQRs are clear and well circulated, h) policies and procedures addressing differences of opinion within the engagement team are clear and well circulated.
MONIRE	A score taking a value between 5 and 25 based on responses to five statements from ISAs and ISQC 1: a) established monitoring process designed to provide reasonable assurance that policies and procedures are relevant in accordance with standards, b) established monitoring process designed to provide reasonable assurance that policies and procedures relating to the system of quality control operate effectively, c) a sample of completed engagements are inspected, d) monitoring undertaken by person / people with sufficient experience, e) monitoring undertaken by person / people with sufficient authority in the firm.