Diffusion Theory, Transnational Antecedents and ISAs Adoption Around the World

Ibrahim K. Elmghaamez[a•], Mohamed H. Elmagrhi[b]

[a]School of Economics, Finance and Accounting
Coventry Business School
Coventry University
Coventry, UK

[b]Hawkes Centre for Empirical Finance
Department of Accounting and Finance
School of Management
Swansea University
Swansea, UK

[•]Corresponding author. Address for correspondence. School of Economics, Finance and Accounting, Coventry Business School, Coventry University, Coventry, CV1 5ED, UK. E-mail: ad0030@coventry.ac.uk.

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Abstract

This paper investigates the impact of four key transnational factors (i.e., cultural, educational, legal, and political factors) on the diffusion and early adoption of International Standards on Auditing (ISAs). Using data for 162 countries over 1995-2014 (i.e., 3,240 observations) and drawing on distinctive insights from diffusion theory, we found that common law countries tend to adopt ISAs faster than civil law countries. Our findings also show that vigorous legal enforcement and shareholder protection regimes promote the early adoption of ISAs, while robust judicial efficiency systems constrain the early adoption of ISAs. In addition, our results show that higher literacy rates and educational attainment simulate the earlier diffusion of ISAs. We also find that higher levels of individualism and uncertainty avoidance, but low levels of power distance cultural values boost the early adoption of ISAs. Finally, our results report that countries with strong political stability and control of corruption tend to adopt ISAs faster than those with solid government effectiveness.

1. Introduction

Following the recent global financial scandals, international bodies such as the World Bank and the International Organization of Securities Commissions have applied significant pressure to encourage many countries worldwide to adopt the International Standards on Auditing (ISAs) (Wong, 2004). Specifically, it has been argued that poor national auditing standards have partially contributed to the recent financial scandals in many countries worldwide (Haapamäki & Sihvonen, 2019; Monfardini & Von Maravic, 2019). Additionally, the need for adopting ISAs has recently increased as a result of the rapid growth of financial markets, as well as the increasing pressure from multinational corporations and foreign investors to adopt good practices that improve the accuracy, comparability, and reliability of the disclosed information (Boolaky & Omoteso, 2016; Boolaky & Soobaroyen, 2017; Krishnan & Zhang, 2019). Further, the adoption of ISAs can bring various economic benefits to countries and companies by integrating capital markets internationally and facilitating the work of accountants and auditors, hence reducing auditing costs (Zaidi & Huerta, 2014). Consequently, many countries have adopted ISAs around the world at different times. For example, and as shown in Appendix 'A', while only six countries adopted ISAs in 1995, by 2014, the figure had dramatically increased to over 100 countries.

Despite the substantial growth and the increasing importance of adopting ISAs, there is a surprising lack of studies investigating the antecedents of ISAs adoption around the world (Boolaky & O'Leary, 2012; Boolaky & Soobaroyen, 2014; Boolaky & Omoteso, 2016; Boolaky & Soobaroyen, 2017; Elmghaamez, 2019). As will be explained further below, these limited studies have mainly investigated some institutional/markets factors. Their findings have poor generalizability due to the small samples they have included in their research and because some of these studies are mainly applied to test the assumption of institutional theory. Hence, these limitations, arguably, can impair the generalisability of their findings. Due to these limitations, there have been several recent calls to conduct further research on issues relating to ISAs adoption (e.g., Coram et al., 2021; Haapamäki & Sihvonen, 2019; Monfardini & Von Maravic, 2019). Therefore, this study directly responds to such calls by examining the key transnational antecedents of the worldwide diffusion of ISAs. Notably, this research investigates the impact of four critical transnational antecedents, namely cultural, educational, legal, and political factors, on the diffusion and early adoption of ISAs worldwide. This study, therefore, seeks to address the following research questions empirically:

- Do the legal, political, cultural, and educational national antecedents influence the diffusion of ISAs?
- To what extent do the legal, political, cultural, and educational national antecedents influence the early adoption of ISAs?

Theoretically, some prior studies have either been descriptive, by not employing any theoretical framework to explain the diffusion of ISAs (Fakhfakh et al., 2008; Roussey, 1996), while others primarily relied on insights from institutional theory or Gray cultural theory to explain the diffusion of ISAs (Boolaky & Soobaroyen, 2017; Boolaky & Cooper, 2015; Boolaky & O'Leary, 2011; Boolaky, 2011; Boolaky et al., 2013; Boolaky & Omoteso, 2016). However, and given that the adoption of accounting innovations can vary among countries based on the adopter-specific characteristics and the time of adoption (Rogers, 2003), we rely on the Diffusion of Innovation (DOI) theory to develop our hypotheses and interpret our findings. Noticeably, previous studies have mainly applied DOI to explain the rapid diffusion of management accounting innovations (Jackson & Lapsley, 2003; Sisaye & Birnberg, 2010; Tucker & Lowe, 2014) and to illustrate International Financial Reporting Standards (IFRS) adoption (El-Helaly et al., 2020; Dayyala et al., 2020; Elmghaamez et al., 2021). To the best of our knowledge, very few empirical studies have employed DOI theory to explain the diffusion and early adoption of ISAs (Elmghaamez et al., 2020). Further, and following prior studies (e.g., Boolaky & Soobaroyen 2017; Boolaky & Cooper, 2015), we also employ institutional theory to explain the extent to which institutional factors (i.e., cultural, educational, legal, and political transnational antecedents) can impact the adoption of ISAs. We, therefore, integrate DOI theory with institutional theory to better understand the extent to which cultural, educational, legal, and political transnational antecedents can influence the diffusion and early adoption of ISAs.

Empirically, significant attention has been devoted by scholars to investigate institutional antecedents that can influence the diffusion of accounting innovations, including the adoption of corporate governance codes (Zattoni & Cuomo, 2008; Elmghaamez, 2021), corporate social responsibility practices (Ntim & Soobaroyen, 2013), and compliance with IFRS (Alon & Dwyer, 2014; De Lima et al., 2018; Judge et al., 2010; Houqe et al., 2012). Few studies, however, have investigated the transnational antecedents of ISAs adoption (e.g., Boolaky and O'Leary, 2012; Boolaky & Soobaroyen, 2017; Boolaky & Omoteso, 2016). These few ISAs studies are impaired in that: (i) they have only investigated a small number of institutional legal factors (i.e., legal origin or investor protection rights) and educational factors (i.e., educational attainment), and (ii) they have included a small number of countries in their analysis, and this consequently may limit the

generalisability of their findings (Haapamäki & Sihvonen, 2019). Further, and despite increasing suggestions that committing to high-quality standards is more beneficial in achieving long-term goals (e.g., promoting investors' confidence in the credibility of financial reports) (Levitt, 1998), most of previous studies have been conducted over a short period of time (Boolaky and O'Leary, 2012; Boolaky & Soobaroyen, 2017; Boolaky & Omoteso, 2016). Arguably, these weaknesses, together, can impair the current understanding of the extent to which legal, political, cultural, and educational institutional factors can influence the diffusion and early adoption of ISAs. Therefore, our study not only contributes to the extant literature by using different proxies, but also by examining the impact of a large number of institutional factors, which have not widely been studied in the previous auditing literature (i.e., cultural, educational, legal, and political factors) on the diffusion and early adoption of ISAs. Further, our study contributes to the extant literature by using one of the most extensive datasets to date relating to 162 countries over 20 years (i.e., 3,240 country-year observations), by using insights from both institutional and DOI theories to understand better the influence of these factors on ISAs adoption[1].

Our findings reveal that countries with English common legal origin and strong shareholder protection rights tend to adopt ISAs earlier than those countries with civil law legal systems and weak shareholder protection rights. Surprisingly, we find that counties with solid legal enforcement are more prone to adopt ISAs earlier than those countries with solid judicial efficiency. Similarly, our findings indicate that countries with strong political stability and control of corruption tend to adopt ISAs faster than those with substantial government effectiveness. Our results also show that countries with Anglo-Saxon culture values (i.e., characterised by high levels of individualism, low levels of power distance and uncertainty avoidance) tend to adopt ISAs more quickly than those countries with continental European cultural values (i.e., characterised by high levels of power distance and uncertainty avoidance and low levels of the individualism culture values).

The rest of this paper is organised as follows. The following section provides historical background about the development of ISAs and discusses the global events that increased the need for adopting ISAs. The third section reviews the theoretical framework, which includes insights from DOI and institutional theories. The fourth section offers a review of the previous empirical

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[1]Sections 3 and 4 provide a detailed discussion about the limitations of the previous theoretical and empirical literature and highlight the main contributions of our research.

literature. The fifth and sixth sections outline research design discusses the empirical results and findings, respectively. The final section summarises the main findings and concludes the paper.

2. ISAs Adoption and Transnational Factors

International Standards on Auditing (ISAs) are professional standards issued by the International Auditing and Assurance Standards Board (IAASB) to enhance transparency and provide internationally agreed auditing standards. The structure of ISAs includes three key components: objectives, requirements, and applications (IFAC, 2017). Establishing ISAs helps in identifying the extent to which national auditing standards in countries with similar characteristics are comparable to the international auditing standards. Further, ISAs offer concrete guidance for developing and implementing high-quality auditing standards (Hegarty et al., 2004). Every international standard has specific objectives, which are linked with certain stated requirements. The ISAs requirements are clearly defined to ensure that a country's existing national auditing standards fulfil the minimum requirements of implementing the ISAs. For example, training staff on applying ISAs is one of the main ISAs requirements to conduct audit services under ISAs (Fraser, 2010). A balanced combination of incentives and capacity leads to achieving the successful application of ISAs. Therefore, the application of ISAs requires certain levels of abilities, such as qualified staff, suitable cultural value, high educational level, solid legal enforcement, and a stable political situation (Hegarty et al., 2004).

The adoption of ISAs has gradually increased over time due to the external pressures that have emerged from different international bodies and the occurrence of several global financial crises. Specifically, the International Standards on Auditing (ISAs) were issued in 1991 by the IAASB through the International Federation of Accountants (IFAC) (Fraser, 2010). By 1995, only six countries, which arguably have had weak national auditing standards, have adopted ISAs, including Malta, Slovenia, the Netherlands, Jordan, Peru, and Sri Lanka. Following the Asian financial crisis in 1997, many international bodies, such as IFAC, have relied on this matter by emphasising the need to adopt ISAs (Kelly, 1998). Consequently, to mitigate the effects of the Asian financial crisis on their economies and prevent the future occurrence of a similar situation in Europe, the number of IASs' adopters increased to 21 countries, mainly from Asia and Europe, over the period spanning from 1996 to 2000. Further, following the occurrence of Enron and WorldCom financial scandals in 2001, partly due to poor auditing practices, many companies have

embraced ISAs to improve their auditing standards (Alabede, 2012; Collings, 2011). Therefore, 45 countries have adopted ISAs during 2001 and 2006 to enhance their local auditing standards.

Furthermore, during and after the 2008 financial crisis, many other countries have decided to implement ISAs as a response to the pressure that is exerted by many international bodies, such as the World Bank and IMF, to remedy the impact of the global financial crisis and to prevent the future occurrence of similar crisis (Laeven & Valencia, 2010). For example, in Europe, the European Parliament and Council have issued the Directive 2006/43/EC to harmonise the European countries' audit standards by adopting ISAs. Consequently, 57 countries have embraced ISAs, most of which are from Europe, in line with the Directive 2006/43/EC on statutory audits of annual accounts. Despite the considerable adoption of ISAs, there are still 33 countries that have not adopted ISAs yet, and most of them are from the Middle East and African regions.

The large auditing firms have also played and continue to play a leading role in spreading the adoption of ISAs. Specifically, it is argued that the large auditing firms are more inclined to perform high-quality audit services since they often have the financial ability, experience, expertise and are more concerned about their reputation/image (Kleinman et al., 2014). Hence, the large auditing firms may influence audit practices in countries with fewer audit professions by transferring their expertise and knowledge into those countries and increasing the adoption of ISAs voluntarily (Kleinman et al., 2014). Although many countries may be encouraged to voluntarily adopt ISAs due to the increasing pressure from large auditing firms (Joshi et al., 2010), there is apparent diversity in the implementation of ISAs by the large auditing firms across different countries (Kleinman et al., 2014). This is because the global application of ISAs can be influenced by several transnational antecedents of countries where the large auditing firms operate, such as culture, educational, legal, and political situations (Smith et al., 2008). Therefore, a country's environmental factors must be taken into consideration when evaluating the adoption of ISAs.

For example, it is suggested that the adoption of ISAs can be influenced by four accounting values of the adopting nations, including professionalism, transparency, flexibility, and confidentiality, which are tightly linked with the cultural dimensions of the adopting countries (Gray, 1988; Heidhues & Patel, 2011). Specifically, Anglo-Saxon, and Nordic countries tend to have the most professional and flexible accounting and auditing standards since they culturally possess higher levels of individualism and lower levels of power distance and uncertainty avoidance than those countries with continental European cultural values (Borker, 2012). This is because Anglo-Saxon and Nordic countries are argued to be among the most transparent and

publicly accountable nations in the world (Gray, 1988). However, European developed countries tend to delay their ISAs adoption because they tend to be politically conservative. Further, prior studies (e.g., Borker, 2012; Borker, 2014) also suggest that Asian and African emerging economies tend to prefer using their local accounting and auditing standards due to the highest level of confidentiality in these countries.

Additionally, the quality of the national educational system can impact its adoption and implementation of accounting innovations (Wong, 2004). For example, countries that suffer from a lack of accounting education often delay adopting new accounting innovations due to the shortage of skills, expertise, and knowledge (Sawan & Alsaqqa, 2013). In contrast, countries with developed accounting education systems tend to benefit more from adopting new accounting innovations since such countries often can provide high levels of training necessary to implement such accounting innovations (Weaver & Woods, 2015). Similarly, countries with higher educational attainment and literacy rates tend to have strong accounting and auditing standards to respond to these nations' higher quality of accounting education systems (Boolaky & Omoteso, 2016; Boolaky et al., 2013).

Furthermore, the adoption of new accounting innovations has widely been affected by the national legal antecedents of the adopting countries, including legal origin, judicial efficiency, and shareholder protection laws (Puri, 2009). It is argued that English common law counties are more prone to adopt new accounting innovations, since they often have high levels of judicial efficiency and robust legal enforcement systems to protect shareholders' rights (Beck et al., 2003). In contrast, civil law countries usually tend to be late adopters of new accounting innovations, since they often need to adjust their legal systems based on the requirements of international accounting and auditing standards before they can adopt them (Narasimham, 2010). Finally, a country's political status can also affect its adoption of new accounting and auditing innovations (Wejnert, 2002). For example, countries with higher levels of political stability tend to have strong political institutions that facilitate the diffusion of new accounting innovations to improve the quality of their financial reporting (Houqe et al., 2012). Similarly, countries with higher corruption control levels tend to be early adopters of new accounting innovations to attract more foreign investments (Uchenna & Iyoha, 2016).

However, and despite the considerable adoption of ISAs and acknowledging that the cultural, educational, legal, and political environment can affect the diffusion and early adoption of such

standards. As will further be discussed in section 4, there seems to be a lack of empirical evidence on the antecedents of ISAs adoption. Prior studies have primarily included a small number of countries in their sample and explored limited factors with little theoretical insights. This study, therefore, seeks to examine the impact of cultural (power distance, individualism, and uncertainty avoidance), educational (educational attainment and literacy rate), legal (legal origin, shareholder protection right and judicial efficiency), and political (political stability, government effectiveness and control of corruption) factors on the diffusion and early adoption of ISAs among 162 countries.

3. Theoretical Framework

As discussed in the introduction, prior studies examining ISAs adoption have either: (i) been descriptive, by not employing specific theoretical framework to explain the diffusion of ISAs (Fakhfakh et al., 2008; Roussey, 1996); or (ii) relied mainly on insights from institutional (Boolaky & Soobaroyen, 2017; Boolaky & Cooper, 2015) or Gray cultural theory (Boolaky & O'Leary, 2011; Boolaky & Omoteso, 2016). However, and given that the adoption of accounting innovations can vary among countries based on the adopter-specific characteristics and the time of adoption (Rogers, 2003), we rely on the Diffusion of Innovation (DOI) theory to develop our hypotheses and interpret our findings. Further, and following prior studies (e.g., Boolaky & Soobaroyen 2017; Boolaky & Cooper, 2015), we also employ institutional theory to explain the extent to which institutional factors (i.e., cultural, educational, legal, and political transnational antecedents) can impact the adoption of ISAs. Therefore, our study distinctively relies on the theoretical insights drawn from DOI and institutional theories to explain: (i) the dynamic diffusion of ISAs; and (ii) the impact of four institutional antecedents (i.e., legal, political, educational, and cultural factors) on the diffusion and early adoption of ISAs among 162 countries.

DOI theory suggests that adopters of innovations can be divided into five major groups according to their adoption time: innovators, early adopters, early majority, late majority, and laggards (Rogers, 2003). Accordingly, we relied on the global financial crises to classify our sample into five categories as suggested by DOI theory. These financial crises, arguably, have encouraged many countries to adopt high-quality auditing standards to prevent the future occurrence of similar situations. Since ISAs were issued in 1991, this study classified those countries that have adopted ISAs by 1995 as experiments. Further, the event of 1997 Asian financial crisis has encouraged many countries to adopt ISAs. Therefore, we categorised those countries that have adopted ISAs from 1996 to 2000 as early adopters. In 2001, the Enron financial

scandal forced many countries to adopt ISAs. Hence, we classified those countries that have adopted ISAs between 2001 and 2005 as the early majority. In 2006, the European Parliament and Council issued the Directive 2006/43/EC on statutory audits to encourage EU members to adopt ISAs. Therefore, we categorised those countries that have adopted ISAs from 2006 to 2014 as the late majority. Finally, we classified the rest of the countries that have not adopted ISAs by 2014 as laggards.

Each group of those five adopters' categories has specific characteristics (e.g., innovation features, actor's attributes, environmental context, geographical environment, societal culture, political status, and global consolidation) (Wejnert, 2002), and these characteristics are argued to have a substantial impact on the dynamic diffusion of international accounting innovations (Pelucio-Grecco et al., 2016; Iyoha & Jimoh, 2011). DOI also suggests that innovations usually cannot be accepted straightway after being invented, but they are most often adopted after being improved in favour of specific needs and depending on the adopters' national circumstances (Rogers, 2003). For example, it has been argued that English common law countries tend to have more developed legal and educational systems. Hence, they are more prone to adopt international accounting innovations to satisfy the expectations of local and foreign investors (Siems, 2008). Therefore, understanding each groups' characteristics will help identify the essential antecedents for each adopter category, and it will also help understand the transnational factors that might hinder the global adoption of ISAs.

In addition, DOI theory suggests that three features can influence the diffusion of new innovations: the characteristics of the invention itself (complexity, cost, and advantages), the characteristics of innovators (people, organisations, and states), the features of the environmental context (societal culture, geographical settings, political conditions, and global uniformity) (Wejnert, 2002). In this study, we mainly focus on the characteristics of innovators and context. In contrast, innovation characteristics (e.g., complexity, cost, and advantages) are not part of this research. Such characteristics cannot be easily/objectively observed and measured (Damanpour & Schneider, 2009). Concerning the characteristics of innovators and context, DOI theory suggests that the diffusion and adoption of ISAs differ among countries according to their legal, political, cultural, and educational characteristics (Rogers, 1995; Wejnert, 2002). For example, countries with common law legal origins tend to have higher judicial independence and stronger shareholders' protection laws (La Porta et al., 2008). Thus, such countries are likely to adopt ISAs earlier than those with legal civil law origins. Additionally, DOI theory indicates that adopters'

socio-cultural factors play a crucial role in influencing the adoption and diffusion of new innovations (Wejnert, 2002). Similarly, this theory suggests that early adopters of new innovations tend to have different legal, cultural, political, and educational characteristics than those who embrace the same innovations later (Tolbert & Zucker, 1983; Rogers 2003; Wejnert, 2002). This implies that the diffusion and early adoption of ISAs are related to, and can be influenced by, the adopters' legal, political, cultural, and educational characteristics. We, therefore, have employed DOI to explain the impact of adopters' legal, political, cultural, and educational characteristics on the diffusion and early adoption of ISAs.

Although DOI is useful in explaining the dynamic diffusion of ISAs, it does have some limitations. For example, it does not provide a clear explanation about the extent to which institutional factors (cultural, educational, legal, and political transnational antecedents) can influence the adoption of ISAs. According to Kostova (1997, p. 180), the institutional theory goes beyond describing the dynamic diffusion of new innovations to capture "various aspects of the national environment including cultural norms, social knowledge, rules and regulations," and thus institutional theory offers a better understanding on how country-level institutional differences can influence the diffusion and early adoption of ISAs. Therefore, and following prior studies (e.g., Boolaky & Soobaroyen 2017; Boolaky & Cooper, 2015), institutional theory has also been employed in this research to deal with this limitation. According to institutional theory, three institutional pressures can encourage organisations to adopt high-quality auditing standards, namely coercive (regulative), mimetic (Cultural/cognitive), and normative pressures (DiMaggio & Powell 1983). Coercive isomorphism refers to the force that emerges from laws and regulations established by legal and political parties to gain institutional legitimacy (Boolaky et al., 2018). Cultural/cognitive isomorphism refers to the pressure that emerges from peers to imitate the decision of adopting high-quality auditing practices to reduce decision ambiguity and uncertainty for early adopters (Tingling & Parent, 2002). Normative isomorphism refers to the pressures from professional and educational organizations to enhance their professionalization to gain institutional legitimacy (Lasmin, 2011).

Within the ISAs adoption context, it has been argued that coercive pressures may arise from political and regulatory bodies in a country to enforce its institutions to adopt high-quality accounting standards to acquire more organisational legitimacy (Lasmin, 2011; Pricope, 2016). Similarly, it has been argued that cultural/cognitive pressures may arise from successful multinational corporations and trade partners to adopt the international auditing standards, and this

may encourage the other organisations to mimic the behaviour of those successful multinational corporations and trade partners (Judge et al., 2010; Kossentini & Ben Othman, 2014). In addition, it has been suggested that normative pressure, which emerges from accounting professional bodies, can encourage many countries to adopt high-quality auditing standards to develop and maintain high levels of auditing professionalism (Irvine, 2008). Therefore, our study seeks to contribute to the existing ISAs literature by distinctively combining DOI theory and institutional theories to provide a more comprehensive understanding of the impact of major transnational factors (i.e., cultural, educational, legal, and political factors) on the diffusion and early adoption of ISAs worldwide.

4. Empirical literature and Hypotheses Development

Prior studies have identified several individual transnational (institutional) antecedents that influence the diffusion of international accounting innovation (Boolaky and Omoteso, 2016; Boolaky & Soobaroyen, 2017; Wong, 2004; Judge et al., 2010). These institutional antecedents include cultural, educational, legal, and political factors. Therefore, we draw on these empirical studies and the above theories (DIO and institutional theories) to develop our hypotheses in the following sub-sections.

4.1. *Transnational legal antecedents*

From DOI theory viewpoint, countries with similar characteristics, such as English common law countries, tend to have advanced judicial systems. Hence, such countries are more prone to adopt high-quality auditing standards earlier to satisfy the needs of their shareholders (La Porta et al., 2008). This is also consistent with the theoretical suggestion of institutional theory, which indicates that English common law countries tend to adopt high-quality auditing standards earlier than civil law countries. This is due to the coercive pressures that can emerge from legal institutions to meet the expectations of their local/foreign shareholders and gain more institutional legitimacy (Boolaky et al., 2018; Kossentini & Ben Othman, 2014; Pricope, 2016).

Empirically, prior empirical studies have primarily examined the impact of a few legal factors on the adoption of ISAs. For example, Al-Awaqleh (2010) has only examined the influence of legal origin on the adoption of ISAs in Jordan. Similarly, Boolaky and Soobaroyen (2017) have mainly focused on exploring the impact of shareholder protection rights on ISAs adoption among 89 countries, whereas Boolaky (2011) has only investigated the effect of judicial efficiency on the strength of auditing standards. Therefore, our study seeks to contribute to the existing ISAs

literature by examining the collective impact of these three factors (legal origin, shareholder protection rights, and judicial efficiency) on the diffusion and early adoption of ISAs.

Regarding the legal origin factor, previous studies have largely focused on examining the effect of this factor on the adoption of IFRS. Thereby, this provides an excellent opportunity to contribute to the current ISAs research. For example, and consistent with the findings of previous studies (Kossentini & Ben Othman, 2014), Zehri and Chouaibi (2013) report that emerging countries with common law legal systems are more likely to adopt IFRS than those with civil law legal systems. However, and to the best of our knowledge, only one study conducted by Al-Awaqleh (2010) has used a survey and examined the impact of legal origin on the ISAs diffusion in Jordon. This study reports that the ISAs adoption in Jordan is influenced by its French and Islamic law legal origins. Al-Awaqleh's study, however, is impaired in that it: (i) relied only on using surveys; (ii) used the classification provided by La Porta et al. (2008) for the legal origin; and (iii) ignored the time of ISAs adoption. Therefore, our study aims to extend and contribute to the current literature by: (i) using the legal origin classification provided by the World Factbook instead of using only five legal origins supplied by the La Porta website; (ii) covering a large sample of 162 countries; and (iii) considering the time of ISAs adoption. Specifically, and rather than only using the five legal origins that La Porta Website provides (i.e., British, French, Socialist, German, and Scandinavian legal bases), our study employs the classification that is provided by the Central Intelligence Agency (CIA) on the World Factbook website, which distinguishes between different legal system categories, and offers more comprehensive information about the worldwide legal origins. We have included the most common 11 legal origins provided by the CIA World Factbook, which are: English law, French civil law, Spanish civil law, Socialist civil law, German civil law, Portuguese civil law, English and religious, English and Islam, English and Roman-Dutch, French and Islam, and mixed English and civil law. This classification of legal origin has also been employed by Elmghaamez (2021).

Additionally, few studies have examined the impact of shareholder protection rights on the adoption of ISAs (e.g., Boolaky & Soobaroyen, 2017; Boolaky & Omoteso, 2016). These studies, however, have included a small number of countries in their sample. Further, these studies have only examined the influence of shareholder protection rights on the strength of auditing standards rather than the diffusion and early adoption of ISAs. For example, and in line with the findings of past studies (Boolaky & Soobaroyen, 2017; Boolaky & Omoteso, 2016), Boolaky and O'Leary (2011) report a positive and statistically significant relationship between the strength of auditing

standards and the protection of minority shareholder rights using a sample of 28 developing countries. Therefore, our study contributes to the existing literature by examining the effect of shareholder protection rights on the diffusion and early adoption of ISAs among 162 countries over 20 years.

Finally, and in terms of judicial efficiency, there is a relative paucity of studies investigating the association between judicial efficiency and the adoption of ISAs (e.g., Boolaky and O'Leary, 2012; Boolaky, 2011; Boolaky et al., 2013). These few studies are impaired: (i) they mainly focus on the impact of judicial efficiency on the strength of auditing standards rather than the adoption of ISAs: and (ii) ignored the time of ISAs adoption. Besides, these studies have collected data relevant to the legal framework's efficiency from the La Porta website, which provides information for only 49 countries. For example, Boolaky (2011) has investigated the relationship between the efficiency of the legal system and the strength of auditing standards among 41 European countries and report that countries with high levels of judicial efficiency tend to have strong auditing standards. Therefore, this paper proposes the following hypothesis:

H1. *English common law countries with high levels of judicial efficiency and strong shareholders protection rights are more likely to adopt ISAs earlier than civil and mixed law countries.*

4.2. *Transnational political antecedents*

According to institutional theory, coercive pressures from political parties can influence accounting choices relating to adopting new auditing standards (Pricope, 2016; Lasmin, 2011). The coercive isomorphism of a country, which can arise from its different political groups, including governments, regulators, and policymakers, may encourage institutions to adopt new practices to mitigate any asymmetric relationships within organisations and improve institutional legitimacy. This type of pressure can take the form of formal and informal laws and regulations (Boolaky et al., 2018). Therefore, coercive isomorphism of a country enforces its institutions to adopt high-quality auditing standards to respond to the pressures that emerge from political groups and gain more institutional legitimacy.

Empirically, much of the existing literature has examined the impact of worldwide governance indicators on adopting IFRS (e.g., Uchenna & Iyoha, 2016; Hoque et al., 2011; Zaidi &Huerta, 2014; Alon & Dwyer, 2014; Houqe et al., 2012). Surprisingly, only two studies (Boṭa-Avram, 2014; Bota-Avram et al., 2015) have examined the influence of worldwide governance indicators on the strength of auditing standards, but these studies have ignored the impact of worldwide

governance indicators on the early adoption of ISAs. Concerning political stability, much of the existing accounting innovations literature has examined political stability's effect on IFRS adoption (Hoque et al., 2011; Zaidi & Huerta, 2014; Pricope, 2016). The findings of these studies suggest that countries with high levels of political stability are more prone to adopt IFRS to improve their financial reporting quality. Similarly, prior studies have primarily examined the impact of government effectiveness on the adoption of IFRS (Houqe et al., 2012), with only one study conducted by Bota-Avram et al. (2015), which reveal that government effectiveness is positively and significantly associated with the strength of accounting and auditing standards among 132 countries. Further, existing literature on accounting innovations has mainly examined the relationship between corruption control and IFRS adoption (Uchenna & Iyoha, 2016; Amiram, 2012). The findings of these studies indicate that countries with high levels of corruption control are more likely to be early adopters of IFRS. Given that countries with high levels of political stability, government effectiveness, and corruption control are likely to be early adopters of international accounting innovations (IFRS), we propose the following hypotheses:

H2a. *Countries with higher political stability are more likely to adopt ISAs earlier than those with lower political stability.*

H2b. *Countries with higher government effectiveness are more likely to adopt ISAs earlier than those with lower government effectiveness.*

H2c. *Countries with higher control of corruption are more likely to adopt ISAs earlier than those with lower control of corruption.*

4.3 Transnational cultural dimensions

According to DOI theory, adopters with similar cultural values tend to adopt similar standards due to the social interactions with their peers (Yalcinkaya, 2008). Further, the institutional theory is also helpful in explaining the impact of national culture characteristics on the diffusion and early adoption of ISAs. Therefore, consistent with prior studies (Kostova, 1997; Scott, 2008), we employ Hofstede's three cultural dimensions (i.e., power distance, individualism, and uncertainty avoidance) to capture the cognitive component of institutional theory. Gray (1998) argues that the diversity of cultural values is important in explaining differences in adopting accounting and auditing standards among countries. Similarly, Hofstede et al. (2010) argue that four accounting values can facilitate the diffusion of new innovations: professionalism, optimism, flexibility, and transparency. These four accounting values are suggested to be aligned with the Anglo-Saxon

countries' cultural values (Borker, 2012). Hence, we argue that Anglo-Saxon nations are likely to adopt ISAs more quickly than those countries with continental cultural values. In this regard, countries with high individualism, masculinity, and indulgence levels are more likely to be among early adopters of ISAs (Borker, 2013). In contrast, countries with higher power distance, uncertainty avoidance, and long-term orientation are more likely to delay their ISAs' adoption since their cultural values align with the following four accounting values: uniformity, confidentiality, and conservatism (Borker, 2012).

Empirically, there is limited evidence relating to the impact of transnational cultural factors on the diffusion and early adoption of ISAs. Therefore, this provides a fertile opportunity to make original contributions to the existing accounting innovations literature. For example, most prior studies have mainly focused on examining the influence of national cultural values provided by Hofstede's website on the adoption of IFRS (Cardona et al., 2014; Neidermeyer et al., 2012; Lasmin, 2012). However, only one study was conducted by Boolaky and Soobaroyen (2017), which examines the impact of cultural factors on the adoption of ISAs. This study, however, is impaired in that it has merely used two of Hofstede's cultural dimensions, namely power distance and uncertainty avoidance, and examined their impact on ISAs adoption among only 89 countries. Consequently, our study contributes to the existing literature by utilising three of Hofstede's cultural dimensions: power distance, individualism, and uncertainty avoidance, and examine their influence on the diffusion and early adoption of ISAs among 162 countries over 20 years.

Prior empirical studies report that countries with high levels of power distance are less likely to adopt IFRS (Neidermeyer et al., 2012; Lasmin, 2012). Further, Neidermeyer et al. (2012) and Shima and Yang (2012) report a statistically positive association between countries' national cultural values (power distance, individualism, and uncertainty avoidance) and the adoption of IFRS. Similarly, Cardona et al. (2014) find that countries associated with high individualism cultural values are more likely to adopt IFRS than those with collectivist cultural values. Therefore, this paper posits the following hypothesis:

H3. *Countries with Anglo-Saxon cultural values are more likely to adopt ISAs earlier than those countries with continental cultural values.*

4.4 Transnational educational antecedents

Theoretically, institutional theory indicates that the normative isomorphism within a country, which can arise from the pressures of its professional institutions, may encourage organisations to

adopt new standards (DiMaggio &Powell, 1983). Accordingly, normative isomorphism, which can emerge from the forces of higher education institutions, may affect auditing professionalism (Pricope, 2016). In this matter, Turner (1993) reports that countries with high levels of educational development are likely to adopt and implement rigorous and strong international standards as they seek to acquire high levels of professionalism. Similarly, Lasmin (2011) suggests that embracing high-quality accounting standards (i.e., IFRS) can be influenced by the normative pressures of professional educational institutions. However, Irvine (2008) argues that the normative forces, which often arise from professional accounting firms, such as large international accounting firms, can encourage organizations to adopt rigorous standards to gain more accounting/auditing professionalism.

Empirically, studies that have examined the influence of educational factors on the diffusion and early adoption of ISAs are rare. This, consequently, limits the current knowledge about the extent to which national educational antecedents can influence the diffusion and early adoption of ISAs. For example, Boolaky et al. (2013), who has investigated the impact of tertiary education level on the strength of auditing standards using a sample of 133 countries, report that post-secondary education is positively and significantly associated with the strength of auditing standards. Similarly, Boolaky and Omoteso (2016) and Boolaky and Soobaroyen (2017) report a statistically positive association between tertiary educational attainment and ISAs adoption using a small sample of 50 and 89 countries, respectively. However, and to our best knowledge, the influence of literacy rate of the diffusion and early adoption of ISAs has not been empirically examined yet. Hence, our study seeks to make an original contribution to this limited area of research. Prior studies have primarily examined the impact of literacy rate on IFRS adoption (Zehri & Chouaibi, 2013; Shima & Yang, 2012) and report that countries with high literacy rates are more likely to adopt IFRS. Therefore, this study seeks to extend and contribute to the existing literature by examining the impact of educational attainment and literacy rate on the diffusion and early adoption of ISAs among 162 countries from 1995 to 2014. Hence, this paper proposes the following hypothesis:

H4. *Countries with high educational attainment and literacy rates are more likely to adopt the ISAs earlier than those with low levels of educational attainment and literacy rates.*

5. Research design

5.1. Data and Sampling

We targeted all 196 countries to be included in our sample; however, due to the limited availability of the required data, the final sample size has been reduced to 162 countries over the period 1995-2014. This final sample size is still relatively large compared to the population size, representing approximately 83% of the target population, and hence there is no serious sample selection bias. The list of countries included in our final study and their classifications based on their ISAs adoption date is presented in Appendix 'A'. Concerning data sources, Table 1 shows a summary of data sources for the ISAs adoption status. We collected our research data primarily from two reliable sources: (i) the Action Plan Template provided by IFAC; and (ii) and the Reports on the Observance of Standards and Codes (ROSC) provided by the World Bank. Legal factors were collected from three main sources: the World Factbook (CIA), the World Development Indicators WDI, and Economic Freedom Dataset. Moreover, the cultural dimensions were collected from the Hofstede Centre website, whereas political factors were gathered from the World Bank using the Worldwide Governance Indicators (WGI). Finally, educational factors were collected from the Barro-Lee Educational Attainment Dataset and the World Development Indicators (WDI) provided by the World Bank.

5.2. Research variables

The list of all variables used in our analysis and their definitions are presented in Table 1. First, and to test our research hypotheses (*H1-H4*), our main dependent variable is ISAs adopter category. In this paper, we follow DOI theory developed by Rogers in 1962 by categorising ISAs adopting countries into five main groups: (i) experimenters: (ii) early adopters; (iii) early majority; (iv) late majority; and (v) laggards. Accordingly, we identified six countries that have adopted ISAs during the first five years (1991 to 1995) after the IFAC issued ISAs in 1991. Hence, we have included these six countries in the experimenter's group. These six countries are Malta, Slovenia, the Netherlands, Jordan, Peru, and Sri Lanka. According to DOI theory (Wani & Ali, 2015), early adopters tend to have a higher risk appetite than their later adopters' counterparts. This risk tolerance enables them to adopt new innovations earlier than their late adopters' counterparts. Further, DOI theory indicates that late adopters are more risk-averse than early adaptors, and hence they tend to be cautious about their adoption choices (Rogers,1962). Therefore, we argue that these six ISAs early adopting countries (i.e., adopted ISAs during the first five years of issuing the standards in 1991) are risk-takers, and they tend to have a high tolerance for risks arising from adopting new ISAs. This is due to that such adaptors may seek to develop

and enhance the quality of their national auditing standards. Prior studies (Obaidat, 2007; Pineno & Gelikanova, 2010) suggest that countries with weak national auditing standards are likely to adopt ISAs earlier relative to other countries to create an environment that supports high-quality auditing. For example, Obaidat (2007) and Pineno and Gelikanova (2010) suggest that Jordan was among the early adopters of ISAs, since its national auditing standards were weak at the time of adoption. This implies risk-takers are likely to adopt new ISAs earlier than their risk-averse counterparts since complying with such standards can improve the quality of their national auditing practices. Therefore, we argue that these six ISAs early adopting countries (Jordan, Malta, Netherland, Peru, Slovenia, and Sri Lanka) seem to be risk-takers and adopted such standards to enhance the quality of their national auditing practices. Additionally, and according to Fraser (2010), most of the big economies, including Japan, Australia, India, and many EU countries, have adopted ISAs at late times since they have more developed and stronger national audit standards. Thus, there is less need for them to adopt ISAs at early stages.

Additionally, the Asian crisis in 1997-1998 has increased pressure in favour of adopting ISAs. Besides, many international bodies, such as the World Bank and IMF, have also encouraged many non-adopting countries to adopt ISAs, since adopting these high-quality auditing standards can reduce financial frauds and prevent similar crises from occurring in the future (Kelly, 1998). Accordingly, and as shown in Appendix A, all countries that have adopted ISAs between 1996 and 2000 are included in the early adopters' group. Using this criterion resulted in having 21 countries that have adopted ISAs during the interval spanning from 1996 to 2000. Similarly, many countries have adopted ISAs after the Enron and WorldCom financial scandals in 2001 (Collings, 2011). Therefore, we classified those countries that have embraced ISAs following the Enron and WorldCom financial scandals from 2001 to 2006 as early majority adopters. Based on this, we have identified 45 countries that have adopted ISAs during the interval spanning from 2001 to 2006. Interestingly, in 2006, the European Parliament and Council issued the Directive 2006/43/EC to harmonise auditing standards among EU countries by adopting ISAs. As a result of this, many EU countries have voluntarily embraced ISAs. Furthermore, new reforms have been emerged to encourage different countries to adopt ISAs after the recent financial crisis of 2007/08. Accordingly, we have classified those countries that have adopted ISAs from 2007 to 2014 as the late majority adopters of ISAs, and this group includes 57 countries. On the other hand, we have classified, which have not adopted ISAs by 2014 as laggards, and this group consists of 33 countries. The data for ISAs adopter groups have been coded using a 1-5 coding scheme as follows,

1 for experimenters, 2 for early adopters, 3 for early majority, 4 for the late majority, and 5 for laggards.

Insert Table 1 about here

Second, to test *H1*, our first independent variable is the legal antecedents (*LEGS*), which consist of three proxies: (i) legal origin, (ii) shareholder protection rights, and (iii) judicial efficiency. The legal origin is a categorical variable containing 11 legal origins based on the country's legal origin (*LEGORG*). These were coded as follows: English common law is awarded 0, civil law including French is awarded1, Spanish is awarded 2, Socialist is awarded 3, German is awarded 4, Portuguese is granted 5, mixed legal origins including English common and religious is awarded 6, English common and Islam is awarded 7, English common and Roman-Dutch is awarded 8, French civil law and Islam is awarded 9 and mixed common and civil law is awarded 10. Concerning shareholders' protection rights (*SHPRRI*), it measures the strength of the legal rights index that is provided by the World Bank, which ranges from 0 (implies weak shareholder protection rights) to 12 (indicates strong shareholder protection rights). Regarding judicial efficiency (*JUDEFF*), it captures the impartiality of courts in a country, and Economic Freedom provides this data. The data have a scale value between 0 and 9, where 0 denotes that a country has the lowest level of impartial courts, and 9 otherwise.

Third, and to test *H2*, our primary independent variable is the political antecedents (*POLS*), which contains three worldwide governance indicators, namely political stability (*POLSTB*), government effectiveness (*GOVEFF*), and control of corruption (*CONCOR*). The obtained data ranges from -2.5 to 2.5, where -2.5 denotes that a country has the lowest worldwide governance indicators, 2.5 otherwise. Fourth, and to test *our third hypothesis*, the independent variable is the cultural dimensions (*CULS*), which are measured using three cultural proxies, namely power distance (*POWDIS*), individualism (*INDIVI*), and uncertainty avoidance (*UNCAVO*). The cultural data ranges from 0 to 100, where 100 refers to the highest power distance (*POWDIS*), individualism (*INDIVI*), and uncertainty avoidance, 0 otherwise. Fifth, and to test *H4*, our main independent variable is the educational antecedents (*EDUS*). This variable is measured using two proxies: (i) educational attainment refers to the percentage of the population with tertiary education in a country. The population with tertiary education is defined as those having completed the highest level of education by the age of 25+ years; (ii) youth literacy rates refer to the number of people that are aged between 15 and 24 years old and who can read and write divided by the total

population in the same age group, and this is multiplied by 100. Finally, we included two control variables in our regression model: (i) official language (*OFFLAN*), since the translation of international auditing standards can affect ISAs adoption (Nobes, 2011); (ii) and colonial history (*COLHIS*), since accounting practices of a country can be influenced by the standards existing in their former colonisers (Nobes, 2006). Therefore, we estimated our logit model as follows:

$$Log[\frac{P_{it}}{(1-P_{it})}]=\alpha_0 + \sum_{i=1}^{3}\beta_1\ LEGS_{it} + \sum_{i=1}^{3}\beta_2\ POLS_{it} + \sum_{i=1}^{3}\beta_3\ CULS_{it} + \sum_{i=1}^{2}\beta_4\ EDUS_{it} +$$

$$\sum_{i=1}^{2}\beta_i\ CONTROLS_{it} + \varepsilon_{it} \tag{1}$$

Where l*og* is the natural log of the odds ratio, *Pit* is the probability of an ordinal response occurring in a country (i) in a year (t) to adopt ISAs, (1 – *Pit*) is the probability of not adopting ISAs, [*Pit /*1 – *P*it] is the proportional odds of ordinal responses. *LEGS* refers to three transnational legal antecedents: legal origin, judicial efficiency, and shareholders protection rights. *POLS* refers to three transnational political antecedents: political stability, government effectiveness, and corruption control. *CULS* refers to three global cultural dimensions: power distance, uncertainty avoidance, and individualism cultural values. *EDUS* refers to two transnational educational antecedents: educational attainment and literacy rates. Finally, *CONTROLS* refers to two control variables: official language and colonial history.

6. Empirical Results

6.1. Descriptive and bivariate statistical analysis

Panels '*A-D*' of table 2 represent the descriptive statistics of all continuous explanatory and control variables included in this study for 162 countries. Arguably, there is substantial variability in the data regarding the four transnational antecedents. Panel '*A*' of Table 2 displays the descriptive statistics of transnational legal proxies. For example, shareholder protection rights – *SHPRRI* (judicial efficiency –*JUDEFF)* range from 0 to 12(0 to 9.5), with an average of 5.22(4.55), implying that there is a considerable variation in legal antecedents among the investigated countries. This evidence is consistent with the findings of prior studies (Boolaky et al., 2013; Houqe et al., 2012). Panel '*B*' of Table 2 shows the descriptive statistics of the three transnational political proxies. As shown in Panel '*B*' of Table 2, political stability – *POLSTB*, government effectiveness – *GOVEFF*, and control of corruption – *CONCOR* values range between -3.18 to1.67; -2.32 to 2.43; and -2.06 to 2.59, for each of these proxies, respectively. This suggests a significant variation in the distribution of transnational political antecedents among the

examined countries. This result is in line with prior empirical literature (Uchenna & Iyoha, 2016; Alon & Dwyer, 2014), which reveals a considerable variation in the distribution of governance indicators among their examined countries. Similarly, Panel '*C*' of table 2 represents the descriptive statistics of the cultural antecedents, and their values range from 1 to 10, which exhibit wide variability in their distributions.

Panel '*D*' of Table 2 presents the descriptive statistics of the national educational variables, which suggest that there is a great variation among the examined national educational factors. For example, educational attainment – *EDUATT* (literacy rates – *LITRAT)* range from 0.02 to 62.02 (19.41 to 100) with an average of 12.93(85.77). This is consistent with the findings of Zehri and Chouaibi (2013). They report that developing countries have an average literacy rate of 76.19%, which is close to our average literacy rate for the laggard group (73.67%). Overall, the substantial variation across all variables included in our study suggests that our sample is less likely to suffer from sample selection bias.

Insert Table 2 about here

Panel '*A*' of Table 3 shows the frequency of our categorical independent variable, namely the legal origin across the examined 162 nations. It shows that the experimenters (*EXPR*) group includes six adopting countries, the early adopters (*ERAD*) group consists of 21 adopting countries, the early majority (*ERMJ*) group comprises 36 adopting countries, the late majority (*LTMJ*) group contains 66 adopting countries. In comparison, the laggards (*LGGR*) group includes 33 countries. Concerning official languages, Panel '*B*' of Table 3 presents the frequency of the first control variable, which is the official language (*OFFLAN*), and it captures the official spoken language in the examined countries. Table 3 shows that English language (*ENGLAN*) is the official spoken language in 38 adopting countries, French language (*FRNLAN*) is spoken in 19 adopting countries, Spanish language (*SPALAN*) is spoken in 19 adopting countries, Arabic language (*ARALAN*) is spoken in 17 adopting countries, German language (*GERLAN*) is spoken in 7 adopting countries, Russian language (*RUSLAN*) is spoken in 4 adopting countries. In comparison, other languages (*OTHLAN*) are expressed in 57 adopting countries around the world.

Panel '*C*' of Table 3 shows the frequency of our second control variable, namely colonial history (*COLHIS*). It shows that 10 out of 17 countries, which have never been colonised, have adopted ISAs at late times. Panel 'C' also reveals that 21 out of 49 countries occupied by the British colonial empire have adopted ISAs at initial stages. In comparison, the other 20 countries,

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which were colonised by the British colonial empire, have just adopted ISAs recently. Only 4 out of 24 countries occupied by the French colonial empire have adopted ISAs at the initial stages. In comparison, only eight countries occupied by the French colonial empire have adopted ISAs recently, and the rest are non-adopters. It also shows that 9 out of 17 countries occupied by the Spanish colonial empire have adopted ISAs at the initial stages. In comparison, only six countries occupied by the Spanish colonial empire have adopted ISAs recently, and the rest are still laggards by 2014.

Insert Table 3 about here

Finally, Table 4 shows the results of the Pearson and Spearman correlation coefficients for our study's variables. The reported results in Table 4 indicate that all our independent and control variables are significantly associated with ISAs adoption. Additionally, to test the multicollinearity problem between our variables, we employed two multicollinearity statistical tests in this study, namely the Tolerance and VIF. The reported results in Table 4 indicate there is no severe multicollinearity problem among all our variables. Additionally, both Pearson and Spearman correlation matrices provide relatively similar outcomes regarding the sign and the absolute value of correlation coefficients, implying that any remaining multicollinearity among our examined variables is not statistically harmful.

Insert Table 4 about here

6.2. Multivariate logistic regression models

Table 5 reports the Logit and Probit regression test results, which are beneficial in cases where the nature of the outcome variable is ordinal and has more than two potential responses. Similar results have been obtained from the ordered logit and Probit regression models with minor changes. McFadden (1977) suggests that if McFadden's Pseudo R2 value is more than 0.2, this implies that the fit of the logistic regression model is good, while the Pseudo R2 value is more than 0.4, indicating superior goodness of fit. Table 5 shows that McFadden's Pseudo R2 values for ordered Logit and Probit models were 0.18, implying that the two models' goodness of fit is comparatively good. However, the Likelihood ratio test shows a violation in the parallel line assumption of the ordinal logistic regression model. Therefore, we run cumulative binary logistic regression models, which offer similar results by running ordinal logistic regression.

Insert Table 5 about here

Table 6 presents the cumulative binary logistic estimates of the effect of cultural, educational, legal, and political transnational factors on the diffusion and early adoption of ISAs. Overall, the results indicate that these four institutional factors explain the observed differences in the diffusion and early adoption of ISAs. Specifically, Models 1-4 of Table 6 present the results of five contrasting groups, with a binary coding method for the four adoption categories, excluding the reference category (laggards) M =5-1 = 4. Mode 1 contrasts the experiments group against the other four adoption categories of ISAs. Model 2 compares the experiments and early adopter groups against the remaining three adoption categories of ISAs (the early majority, late majority, and laggards). We find that most countries included in Model 2 tend to have high levels of shareholders protection rights. After that, we run Model 3, where we contrasted early adopters (experiments, early adopters, and early majority groups) against the other adoption categories of ISAs (late majority and laggards). We find that most countries included in Model 3 tend to have high levels of judicial efficiency. Model 4 contrasts the four adoption categories of ISAs (experiments, early adopters, early majority, and late majority) against the laggards' group of ISAs. In this regard, Williams (2016) suggests that getting a significant positive coefficient means that any increase in the explanatory variable is influenced by the impact of the old groups (early adopters) groups, while negative coefficients suggest otherwise. The results are discussed in the following subsections.

6.2.1. *Legal antecedents of ISAs adoption:*

Table 6 displays cumulative binary logistic regression models for the four response categories, excluding the base category using contrasting binary groups for each separate model. In terms of legal antecedents, Model 2 of Table 6 shows that shareholders protection rights (*SHPRRI*) have a strong positive association with the early adoption of ISAs (0.28, p<.001), and therefore *H1* is empirically supported. The positive link between ISAs early adoption and shareholder protection rights supports the findings of previous empirical studies (Boolaky & Soobaroyen, 2017; Boolaky & Soobaroyen, 2017; Boolaky & Omoteso, 2016; Houqe et al., 2012). Theoretically, this finding lends support to the predictions of institutional theory, which indicates that countries with strong shareholder protection rights tend to adopt high-quality auditing standards earlier than those countries with weak shareholder protection rights, and this may due to the increased coercive pressures of their legal systems to meet the expectations of their shareholders and gain more institutional legitimacy (Boolaky et al., 2018; Pricope, 2016). However, Model 3 of Table 6 shows that *SHPRRI* is negatively associated with ISAs early adoption (-0.09, p<.0002). This adverse

effect may be due to the inclusion of the early majority group in the regression model, since this group consists of many civil law countries that adopted ISAs between 2001and 2006.

Insert Table 6 about here

Model 2 of Table 6 shows that the coefficient of judicial efficiency (*JUDEFF*) is negatively and significantly associated with ISAs early adoption (-0.42, p<.001), thereby *H1* is empirically rejected. However, Model 3 of Table 6 reports that judicial efficiency (*JUDEFF*) has a strong positive association with ISAs early adoption (0.18, p<.001). This result may occur due to the impact of the early majority group, which includes many civil law countries that adopted ISAs over the period from 2001to 2006. Empirically, the negative link between ISAs early adoption and judicial efficiency is inconsistent with the past evidence provided by Boolaky (2011). Theoretically, the negative effect of judicial efficiency on the ISAs adoption does not support institutional theory assumptions, which assumes that countries with solid judicial efficiency are more prone to adopt strong accounting and auditing standards due to the coercive pressures emerging from their legal systems. Our findings indicate that issuing regulations that protect shareholder rights is more important than having higher levels of judicial efficiency to improve institutional legitimacy and efficiency (Kossentini & Ben Othman, 2014). The reported results in Model 3 of Table 6 also indicate that English common law legal origin (*ENGCOM)* is positively and significantly associated with ISAs early adoption (0.52, p<.05), thereby providing empirical support for *H1*. Empirically, the positive effect of English common law legal origin on the early adoption of ISAs supports the findings of prior IFRS studies (Zehri & Chouaibi, 2013; Kossentini & Ben Othman, 2014). This positive result is also consistent with predictions of institutional theory, which suggest that English common law countries are more prone to adopt high-quality standards earlier than those countries with civil law legal origins to meet the expectations of their shareholders (La Porta et al., 2008; Siems, 2008).

6.2.2. *Political antecedents of ISAs adoption:*

Model 3 of Table 6 reports that political stability (POLSTB) has a strong positive association with ISAs early adoption (0.26, p<.001), and therefore H2a is empirically supported. The positive link between ISAs early adoption and POLSTB supports the findings of prior IFRS studies (Hoque et al., 2011; Zaidi & Huerta, 2014). Similarly, the reported results in Model 2 of Table 6 indicate that control of corruption (CONCOR) is positively and significantly associated with ISAs early

adoption (0.62, p<.001), implying that H2c is empirically supported. The positive link between ISAs early adoption and CONCOR also supports the findings of past IFRS studies (Amiram, 2012; Uchenna & Iyoha, 2016). Theoretically, this finding offers support to institutional theory, suggesting that countries with strong governance indicators tend to adopt high-quality standards to improve their institutional legitimacy (Pricope, 2016; Lasmin, 2011). By contrast, Model 2 of Table 6 shows that government effectiveness (GOVEFF) is negatively and significantly associated with the early adoption of ISAs (-0.61, p<.001), and thus H2b is rejected. The negative link between ISAs early adoption and GOVEFF contradicts the findings of prior studies (Bota-Avram et al., 2015). Theoretically, this negative evidence is not consistent with institutional theory predictions, which expect government effectiveness to positively impact the early adoptions of ISAs (Kossentini & Ben Othman, 2014; Bota-Avram et al., 2014).

6.2.3. *Cultural antecedents of ISAs adoption:*

Model 2 of Table 6 reports that the power distance cultural value (POWDIS) has a strong negative association with the early adoption of ISAs (-0.31, p<.001), and thus H3 is empirically supported. The negative association between ISAs early adoption and POWDIS endorses the results of prior IFRS studies (Neidermeyer et al., 2012; Lasmin, 2012). Similarly, the reported results in Model 2 of Table 6 indicate that the uncertainty avoidance cultural value (UNCAVO) is positively and significantly associated with ISAs early adoption (0.20, p<.001), and thereby H3 is accepted. The positive link between ISAs early adoption and UNCAVO also supports the findings of the previous IFRS studies (Neidermeyer et al., 2012; Shima & Yang, 2012). Similarly, Model 3 of Table 6 shows that countries with high individualism cultural values (INDIVI) are among early adopters of ISAs (0.08, p<.001), and hence H3 is empirically supported. The positive link between ISAs early adoption and INDIVI is consistent with the findings of past IFRS studies (Neidermeyer et al., 2012; Cardona et al., 2014). This result supports the expectations of DOI theory, which indicates that adopters with similar cultural values tend to adopt similar standards at the same time, which may be due to their social interactions with their peers (Yalcinkaya, 2008). Overall, our findings support the expectations of the institutional theory, which suggests that national cultural values have a significant influence on the diffusion and early adoption of new accounting practices (Scott, 2008).

6.2.4. *Educational antecedents of ISAs adoption:*

Model 3 of Table 6 shows that educational attainment score (EDUATT) is positively and significantly associated with the early adoption of ISAs (0.04, p<.001), and thus H4 is empirically supported. The positive association between ISAs early adoption and EDUATT endorses the findings of prior ISAs studies (Boolaky & Omoteso, 2016; Boolaky et al., 2013; Boolaky & Soobaroyen, 2017). Similarly, the reported results in Model 3 of Table 6 indicate that literacy rate score (LITRAT) has a positive and significant association with ISAs early adoption (0.02, p<.001), and thereby H4 is empirically supported. The positive effect of LITRAT on ISAs early adoption endorses the findings of past IFRS studies (Neidermeyer et al., 2012; Shima & Yang, 2012). It is also in line with the assumptions of institutional theory, which suggests that countries with high levels of educational development are more prone to adopt and implement more rigorous and strong international standards. This result happened because such countries often seek to acquire higher levels of auditing professionalism (Turner, 1993).

Regarding control variables, their coefficients are presented in Models 1-4 of Table 6. Table 6 shows that countries with English (ENGLAN) and Russian (RUSLAN) spoken languages tend to adopt ISAs earlier than countries with other spoken languages. The positive association between ISAs early adoption and ENGLAN supports the findings of Nobes (2011), who suggests that countries that do not speak the English language tend to adopt accounting innovations at late stages. This is because the translation from the English language into domestic languages usually takes a long-time. We also find that countries with Arabic (ARALAN) and French (FRNLAN) spoken languages are likely to delay their decisions to adopt ISAs, and most of them are included in the laggards group. Additionally, our findings indicate that countries with Spanish (SPALAN) spoken language tend to delay the adoption of ISAs.

Concerning the impact of colonial history on the ISAs adoption, our results reveal that countries colonised by certain empires are more likely to adopt ISAs earlier than countries colonised by the other colonial empires. These explicit empires that led to imposing their accounting and auditing standards to their colonies are the British (BRICOL), French (FRNCOL), and Dutch (DUTCOL) empires, in addition to those countries that have never been occupied before by any colonial empire (NEVCOL). The positive association between ISAs early adoption and the former colonizers supports prior studies' findings (Nobes, 2006). We also find that countries, which were colonised by the Russian (RUSCOL) empire, are likely to delay their ISAs' adoption. Nevertheless, we did not find any association between ISAs early adoption and Spanish (SPACOL), Portuguese (PORCOL), and German (GERCOL) colonial empires.

Additionally, and as discussed above, most countries that speak the Russian (RUSLAN) language are less likely to delay their ISAs' adoption. At the same time, this was not the case for countries colonised by the Russian (RUSCOL) empire. One clarification for this result is that the number of countries occupied by the Russian empire was not equal to the number of countries that spoke the Russian language when the early ISAs adoption took place. Additionally, and although colonisers may impose their language on their occupied countries, this is not the case for all occupied countries since such significant transformations cannot happen in the absence of appropriate legal and political changes required to impose the coloniser's language (Bernhard et al., 2004).

6.3. Additional analysis

We conducted multinomial probit-regression as an additional analysis to check the robustness of our obtained results from cumulative binary logistic regression. Table 7 presents the obtained results of multinomial probit regression for the first four response categories: experimenters, early adopters, early majority, and late majority groups against the laggards' group, which was chosen as a base category. Although minor changes in the magnitude and the statistical significance levels for some variables included in our models, the coefficients of most variables reported in columns 1–4 of Table 7 generally remain similar to those reported in Table 6. For example, and as shown in Model 1 of Table 7, the coefficients on UNCAVO (Model 1: 0.64, p>.010), EDUATT (Model 1: 0.08, p>.010), and LITRAT (Model 1: 0.09, p>.010) for the experimenter's group remains positive and statistically significant, implying that our results hold for the usage of multinomial probit regression. Similarly, Model 2 of Table7 shows that the coefficients on all the following variables for the early adaptors group remain statistically significant, including SHPRRI (Model 2: 0.17, p>.010), ENGCOM (Model 2: 1.60, p>.100), GERCIV (Model 2: 11.2, p>.010), SOCCIV (Model 2: 22.7, p>.010) UNCAVO (Model 2: 0.48, p<.010), and LITRAT (Model 2: 0.04, p>.010). Similarly, Model 3 of Table 7 reports the results for ISAs early majority group. The coefficients on SHPRRI (Model 3: 0.07, p>.100), JUDEFF (Model 3: 0.20, p>.010), GOVEFF (Model 3: 0.72, p>.010), POWDIS (Model 3: 0.15, p>.010), UNCAVO (Model 3: 0.30, p>.010) and LITRAT (Model3: 0.03, p>.010) are positive and statistically significant. Further, Model 4 of Table 7 contains the findings for ISAs late majority group. The coefficients on JUDEFF (Model 4: 0.19, p>.010), GOVEFF (Model 4: 1.11, p>.010), POWDIS (Model 4: 0.26, p>.010), UNCAVO

(Model 4: 0.41, p>.010) and LITRAT (Model 4: 0.01, p<.010), are statistically significant implying that our findings hold for the usage of alternative models.

Insert Table 7 about here

7.   Conclusions

A considerable number of empirical studies have investigated the transnational antecedents of IFRS adoption. By contrast, studying the impact of transnational factors on the diffusion and early adoption of ISAs has not sufficiently been examined. Therefore, this paper seeks to investigate the association between four key institutional (i.e., cultural, educational, legal, and political) factors on the diffusion and early adoption of ISAs among 162 countries over 1995-2014. Our results indicate that ISAs early adoption is more likely to happen in countries with English common legal systems, which tend to have strong laws that protect shareholders' rights. We also find that ISAs early adoption is more susceptible to occur in countries with high levels of political stability, control of corruption, individualism, education attainment, and literacy rates. Additionally, we find that ISAs early adoption is more likely to happen in countries with low power distance, uncertainty avoidance, and government effectiveness. Our evidence supports DOI theory, which indicates that countries with similar characteristics (transnational antecedents) are more prone to follow each other by adopting similar practices standards at the same time. Our results also support the expectations of institutional theory, which suggests that the early ISAs adoption can significantly be affected by three isomorphic pressures, namely: (i) coercive pressures emerging from legal and political parties; (ii) mimetic pressures arising from cultural influence; and (iii) normative pressures stemming from educational institutions (DiMaggio & Powell 1983; Judge et al., 2010).

Our findings reveal several academic and practical implications as follows. First, and in terms of the academic implications, we have linked DOI theoretical framework to the adoption speed of ISAs, which answers the question raised by the current ISAs research "Do the transnational antecedents (characteristics) facilitate the adoption speed of ISAs?". This helps to understand how national antecedents (legal, political, cultural, and educational considerations) can affect the early adoption of ISAs. Additionally, our study offers an important implication for academic researchers. Specifically, our study provides early evidence on the impact of four institutional factors on the diffusion and adoption speed of ISAs. Thus, future studies can build on this research to further understand the impact of the institutional environment on the diffusion and early adoption of new accounting innovations.

Second, and in terms of the practical implications, in this study, we have discussed how the transnational institutional antecedents can influence the early adoption of ISAs. Our findings suggest that strong enforcement of legal systems, such as the enforcement of laws relating to shareholder protection rights, can increase the speed of ISAs. Similarly, our findings indicate that strong political power, such as high political stability and control of corruption, can encourage "the early ISAs adoption." Again, our results suggest that countries with strong legal and political powers tend to adopt ISAs earlier than those countries with weak strong legal and political forces since adopting such standards can bring additional transparency to their financial reports. This result has a significant implication for setting auditing standards in countries with low transparency under their local auditing standards by issuing judicial reforms aimed at strengthening audit quality and enhancing the accountability and effectiveness of their institutions. Besides, an important practical implication of this study is the possibility of incorporating international auditing standards into a country's accounting and auditing curriculum to boost local acquisition of ISAs knowledge and competencies.

Although our study has important implications for different parties, it also suffers from several limitations, including using only four critical transnational antecedents and examining their impact on the diffusion and early adoption of ISAs. Therefore, as data become available, future studies can include other institutional factors that can influence the adoption of ISAs (e.g., technological, social, environmental, and economic factors). Moreover, and due to the limited data availability, our analysis is based only on 162 countries. Hence, further research can expand our findings by including more other countries excluded from our sample. Additionally, in this study, we used the 1-5 coding scheme to code our dependent variable, representing ISAs adopters' groups over time. This coding scheme has mainly been derived from DOI theory. We have also relied on the international economic and global financial scandals to categorize countries into five main ISAs adopting groups. However, the results may change if new coding schemes are created. Therefore, future studies may expand our analysis using different coding techniques (e.g., adopter =1 or non-adopter =0). Besides, this study has investigated the adoption level of ISAs. Still, it did not examine whether an adopting country has practically implemented ISAs or not, which might be helpful for further research. Additionally, this study has mainly adopted the classification suggested by DOI theory, which refers to whether a country has adopted ISAs early or later. However, there are alternative ISAs adoption levels that can also be taken into consideration by future research, such as whether ISAs are required by law, permitted, or required for some and permitted for others.

Therefore, further studies might look at different adoption levels, which may better understand how transnational antecedents can impact global ISAs adoption. Finally, our regression models are based on examining the impact of each institutional factor on ISA adoption. Therefore, future studies may investigate the interactive effect of institutional factors (e.g., the combination of legal and political systems) on ISAs adoption.

Appendix A. Classification of study's sample according to their adoption year of the ISAs[2]

Experimenters (1991-1995)	Early adopters (1996-2000)	Early majority (2001-2006)		Late majority (2007-2014)		Laggards (non-adopters up to 2014)	
Jordan	Armenia	Azerbaijan	New Zealand	Argentina	Japan	Afghanistan	Syria
Malta	Bangladesh	Bahrain	Nicaragua	Albania	Kuwait	Algeria	Tonga
Netherlands	Dominican Republic	Bosnia and Herzegovina	Norway	Australia	Liberia	Angola	USA
Peru	Denmark	Bolivia	Panama	Austria	Madagascar	Burkina Faso	Yemen
Slovenia	El Salvador	Bulgaria	Papua New Guinea	Barbados	Malaysia	Burundi	
Sri Lanka	Fiji	Cambodia	Philippines	Belgium	Mexico	Cape Verde	
	France	Cameroon	Russia	Belize	Morocco	Central African Republic	
	Georgia	Canada	Serbia	Benin	Namibia	Chad	
	Kenya	Chile	Singapore	Botswana	Nigeria	Colombia	
	Latvia	China	South Africa	Brazil	Pakistan	Congo, Democratic	
	Lesotho	Costa Rica	Tanzania	Brunei Darussalam	Portugal	Congo, Republic	
	Macedonia	Czech Republic	Turkey	Burma (Myanmar)	Rwanda	Cuba	
	Moldova	Ecuador	Ukraine	Cote d'Ivoire	Saudi Arabia	Ethiopia	
	Mongolia	Guyana	United Kingdom	Croatia	Senegal	Gabon	
	Paraguay	Haiti	Vietnam	Cyprus	Sierra Leone	Gambia, The	
	Poland	Hong Kong	Zambia	Dominica	Slovakia	Germany	
	Romania	Hungary		Egypt	Spain	Guinea	
	South Korea	Iraq		Estonia	Swaziland	Guinea-Bissau	
	Trinidad and Tobago	Ireland		Finland	Sweden	Laos	
	Uganda	Jamaica		Ghana	Switzerland	Libya	
	Uruguay	Kazakhstan		Greece	Taiwan	Maldives	
		Kyrgyzstan		Guatemala	Tajikistan	Mali	
		Lebanon		Honduras	Thailand	Mauritania	
		Lithuania		Iceland	Togo	Mozambique	
		Luxembourg		India	Tunisia	Niger	
		Malawi		Indonesia	United Arab Emirates	Oman	
		Mauritius		Iran	Venezuela	Qatar	
		Montenegro		Israel	Zimbabwe	Sudan	
		Nepal		Italy		Suriname	

[2]The International Standards on Auditing (ISAs) was issued in 1991 by the International Federation of Accountants IFAC. Therefore, the data were collected for twenty years from 1995 to 2014.

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Table 1. Research variables and definitions.

Variable name	Variable definition	Data sources
Dependent Variable - ISAs adopters' categories		
ISAADOP	The ISAs adopters' categories including five groups, namely experimenters (adopted the ISAs between1991 and1995), early adopters (adopted the ISAs between1996 and 2000), early majority (adopted the ISAs between2001and 2006), late majority (adopted the ISAs between2007 and 2014), and laggards (non-adopters). The data for ISAs adopters' categories have been coded using 1-5 coding scheme as follows, 1 for experimenters, 2 for early adopters, 3 for early majority, 4 for late majority, and 5 for laggards.	The Action Plan Template – IFAC The Reports on the Observance of Standards and Codes (ROSCs).
Independent Variables – legal antecedents (LEGS)		
LEGORG	legal origin is a categorical variable, containing 11 legal origins based on a country legal origin (LEGORG), which were coded as following: English common law =0, civil law including French=1, Spanish =2, Socialist =3, German =4 and Portuguese =5, mixed legal origins including English common and religious =6, English common and Islam =7, English common and Roman-Dutch =8, French civil law and Islam =9 and mixed common and civil law = 10	The World Factbook - Field Listing - Legal system – CIA (2016).
SHPRRI	Refers to the strength of legal rights index provided by the World Bank. The index ranges from 0 to 12, where 12 means that country laws are better designed to expand the access to credit, 0 otherwise.	The World Development Indicators WDI (2016).
JUDEFF	The efficiency of the judicial system of a country has been measured by ranking the impartial courts to calculate the court performance within a given country. The data has been provided by the Economic Freedom of the World. The data have a scale value between 0 and 9, where 0 denotes that a country has the lowest level of impartial courts, 9 otherwise.	Economic Freedom Dataset, published in Economic Freedom of the World: 2014 Annual Report, Fraser Institute.
Independent Variables – political antecedents (POLS)		
POLSTB	Political Stability refers to the degree to which a country has a high or low level of political instability and violence. The data were provided for 215 countries over the period 1996–2014, ranging from around -2.5 to 2.5 where -2.5 denotes that a country has the lowest level of political stability, 2.5 otherwise.	Kaufmann, Kraay, & Zoido-Lobaton, (1999; Kaufmann, Kraay, & Mastruzzi, 2009). The Worldwide Governance Indicators (WGI).
GOVEFF	Government effectiveness denotes the extent to which the government in a given country commits to the policies that aimed at enhancing the quality of public services. The data is available for 215 countries over the period 1996–2014, ranging from around -2.5 to 2.5 where -2.5 denotes that a country has the lowest level of government effectiveness, 2.5 otherwise.	Kaufmann, Kraay, & Zoido-Lobaton, (1999; Kaufmann, Kraay, & Mastruzzi, 2009). The Worldwide Governance Indicators (WGI).
CONCOR	Control of corruption refers to the degree to which the government in a given country can control different forms of corruption, including bribes and deliberate wrongdoing. The data is available for 215 countries over the period 1996–2014, ranging from around -2.5 to 2.5 where -2.5 denotes that a country has the lowest level of control of corruption, 2.5 otherwise.	Kaufmann, Kraay, & Zoido-Lobaton, (1999; Kaufmann, Kraay, & Mastruzzi, 2009). The Worldwide Governance Indicators (WGI).

Continuation: Table 1.

Variable name	Variable definition	Data sources
Independent Variables – cultural antecedents (CULS)		
POWDIS	Power distance refers to the degree to which the power within an organisation is equally distributed between all members. The data have a scale value ranging between 0 and 100. Where 0 score refers to the lowest level of power distance, 100 otherwise.	Geert Hofstede Centre website: cultural dimensions (2016)[3].
INDIVI	Individualism level refers to the extent to which individuals, who live in a given country, are combined into groups. The data have a scale value ranging between 0 and 100. Where 0 score refers to the lowest level of Individualism, 100 otherwise.	Geert Hofstede Centre website: cultural dimensions (2016).
UNCAVO	Uncertainty avoidance is referring to how people address uncertain incidents and ambiguous events that are expected to occur in a given country. The data have a scale value ranging 0 and 100. Where 0 score refers to the lowest level of uncertainty avoidance, 100 otherwise.	Geert Hofstede Centre website: cultural dimensions (2016).
Independent Variables – educational antecedents (EDUS)		
EDUATT	Educational attainment refers to the percentage of the population with tertiary education in a country. The population with tertiary education is defined as those having completed the highest level of education by the age of 25+ years. The data are spanning from 1970 to 2010 with 5-year intervals	Barro-Lee Dataset (2014) presented at the World Data Bank Website.
LITRAT	Youth literacy rates refer to the number of people that are aged between 15 and 24 years old and who can read and write divided by the total population in the same age group and this is multiplied by 100.	UNESCO Institute for Statistics (UIS) presented at World Development Indicators (2016).
Control Variables		
OFFLAN	The World Factbook provides information about the official languages for all countries worldwide and occasionally includes the percent of people who speak a specific language. The languages are coded as following: 1 for English, 2 for French, 3 for Spanish, 4 for Arabic, 5 for German, 6 for Russian and 7 for other languages =7.	The World Factbook -Field Listing - Languages – CIA (2016).
COLHIS	The World Factbook provides information about the colonial history for all countries worldwide and the intervals when some countries gained independence from their colonial empires. The data of colonial empires have been coded as the following: 0 for never colonised countries, 1 for British colonialised countries, 2 for French colonialised countries, 3 for Spanish colonialised countries, 4 for Portuguese colonialised countries, 5 for Dutch colonialised countries, 6 for German colonialised countries, 7 for Russian colonialised countries, 8 for Soviet (Yugoslavia) colonialised countries and 9 for other colonialism.	The World Factbook -Field Listing - Natural resources – CIA (2016)

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[3]The Hofstede Centre Website provides data only for 102 countries ranging between 0 and 100. Therefore, and to deal with this data missing problem, we have awarded countries with missing data identical scores to those countries located in the same geographical region. This is because the cultural dimensions of countries located in the same geographic location tend usually to be very similar.

Table 2. Summary descriptive statistics.

Variables	ISAADOP	%	Mean	Std. D	Min	Max
Panel A: Legal antecedents						
SHPRRI	*EXPR*	3.7%	3.78	1.66	0.00	8.00
	ERAD	13.0%	6.39	2.03	1.00	10.00
	ERMJ	22.2%	6.04	2.55	0.00	12.00
	LTMJ	40.7%	5.25	2.25	0.00	11.00
	LGGR	20.4%	3.78	1.88	0.00	12.00
JUDEFF	*EXPR*	3.7%	5.39	1.65	2.30	9.50
	ERAD	13.0%	4.09	1.44	1.30	9.50
	ERMJ	22.2%	4.56	1.80	1.20	9.20
	LTMJ	40.7%	5.04	1.75	0.50	9.40
	LGGR	20.4%	3.71	1.68	0.00	9.20
Panel B: Political antecedents						
POLSTB	*EXPR*	3.7%	0.17	1.08	-1.93	1.67
	ERAD	13.0%	-0.06	0.74	-1.84	1.44
	ERMJ	22.2%	-0.17	0.84	-3.18	1.50
	LTMJ	40.7%	0.02	0.97	-2.81	1.66
	LGGR	20.4%	-0.57	1.12	-2.99	1.32
GOVEFF	*EXPR*	3.7%	0.60	0.80	-0.60	2.12
	ERAD	13.0%	0.01	0.78	-1.17	2.36
	ERMJ	22.2%	0.02	0.91	-1.95	2.43
	LTMJ	40.7%	0.26	1.03	-2.03	2.26
	LGGR	20.4%	-0.60	0.82	-2.32	1.93
CONCOR	*EXPR*	3.7%	0.59	0.87	-0.59	2.32
	ERAD	13.0%	-0.12	0.88	-1.49	2.55
	ERMJ	22.2%	-0.11	1.02	-1.58	2.46
	LTMJ	40.7%	0.20	1.06	-1.82	2.59
	LGGR	20.4%	-0.51	0.83	-2.06	2.16
Panel C: Cultural antecedents						
POWDIS	*EXPR*	3.7%	6.50	1.30	4.00	8.00
	ERAD	13.0%	6.69	1.66	2.00	9.00
	ERMJ	22.2%	6.83	2.02	2.50	9.50
	LTMJ	40.7%	6.58	2.00	1.50	10.00
	LGGR	20.4%	7.15	1.27	3.50	9.50
INDIVI	*EXPR*	3.7%	4.25	2.09	2.00	8.00
	ERAD	13.0%	3.76	1.97	1.50	7.50
	ERMJ	22.2%	3.68	2.17	1.50	9.00
	LTMJ	40.7%	3.96	2.06	1.50	9.00
	LGGR	20.4%	2.91	1.65	1.50	9.50
UNCAVO	*EXPR*	3.7%	7.42	2.04	4.50	10.00
	ERAD	13.0%	6.93	2.25	2.50	10.00
	ERMJ	22.2%	6.22	2.64	1.00	10.00
	LTMJ	40.7%	6.62	1.78	3.00	10.00
	LGGR	20.4%	5.82	1.45	1.50	9.50
Panel D: Educational antecedents						
EDUATT	*EXPR*	3.7%	16.91	6.62	7.08	32.74
	ERAD	13.0%	12.93	8.26	0.97	39.80
	ERMJ	22.2%	16.18	13.55	0.19	62.02
	LTMJ	40.7%	12.58	9.82	0.02	47.67
	LGGR	20.4%	9.37	10.71	0.33	57.28
LITRAT	*EXPR*	3.7%	95.94	4.86	85.55	99.86
	ERAD	13.0%	92.03	10.58	63.62	100.00
	ERMJ	22.2%	90.66	10.50	64.05	100.00
	LTMJ	40.7%	86.24	15.54	42.36	99.95
	LGGR	20.4%	73.67	23.90	19.41	99.96

Note: Full definition of all variables is shown in table 1.

Table 3. Frequency of all variables.

Variables	EXPR	ERAD	ERMJ	LTMJ	LGGR	Total
Panel A: Independent variable (Legal origin)						
ENGCOM	0	60	200	180	40	480
FRNCIV	20	40	0	200	240	500
SPACIV	20	40	100	140	40	340
PORCIV	0	0	0	40	80	120
GERCIV	0	40	0	220	20	280
SOCCIV	20	160	220	140	0	540
ENGREL	0	0	20	40	0	60
ENGDUT	20	20	40	80	0	160
FRNISL	20	0	40	140	140	340
ENGISL	0	40	20	80	100	240
ENGCIV	20	20	80	60	0	180
Total	120	420	720	1320	660	3240
Panel B: Control Variable (language)						
ENGLAN	20	100	260	320	60	760
FRNLAN	0	20	20	140	200	380
SPALAN	20	80	100	140	40	380
ARALAN	20	0	60	120	160	360
GERLAN	0	20	0	100	20	140
RUSLAN	0	0	40	40	0	80
OTHLAN	60	200	240	460	180	1140
Total	120	420	720	1320	660	3240
Panel C: Control variable (Colonialism)						
NEVCOL	20	40	80	200	0	340
BRICOL	60	120	240	400	160	980
FRNCOL	0	0	80	160	240	480
SPACOL	20	60	100	120	40	340
PORCOL	0	0	0	20	100	120
DUTCOL	0	0	0	60	20	80
GERCOL	0	0	20	40	20	80
RUSCOL	0	80	80	100	0	260
YUGCOL	20	20	60	20	0	120
OTHCOL	0	100	60	200	80	440
Total	120	420	720	1320	660	3240

Notes: The ISAs adopters' categories (*ISAADOP*) which include five main categories, namely experimenters' group (*EXPR*); early adopters' group (*ERAD*); early majority group (*ERMJ*); late majority group (*LTMJ*); laggards' group (*LGGR*). Legal origin variable consists of English common law (*ENGCOM*); French civil law (*FRNCIV*); Spanish civil law (*SPACIV*); Portuguese civil law (*PORCIV*); German civil law (*GERCIV*); Socialist civil law (*SOCCIV*); English and religious law (*ENGREL*); English and Dutch law (*ENGDUT*); French and Islamic law (*FRNISL*); English common and Islamic law (*ENGISL*). Control variables involve firstly the official language which includes English language (*ENGLAN*); French language (*FRNLAN*); Spanish language (*SPALAN*); Arabic language (*ARALAN*); German language (*GERLAN*); Russian language (*RUSLAN*); other languages (*OTHLAN*). The second control variable is the colonial history which comprises never colonised countries (*NEVCOL*); British colonial (*BRICOL*); French colonial (*FRNCOL*); Spanish colonial (*SPACOL*); Portuguese colonial (*PORCOL*); Dutch colonial (*DUTCOL*); German colonial (*GERCOL*); Russian colonial (*RUSCOL*); other colonists (*OTHCOL*).

Table 4. Pearson and Spearman correlation matrices.

Variables	ISAADOP	LEGORG	SHPRRI	JUDEFF	POLSTB	GOVEFF	CONCOR	POWDIS	INDIVI	UNCAVO	EDUATT	LITRAT	OFFLAN	COLHIS	Tolerance	VIF
ISAADOP		-.053***	-.289***	-.081***	-.100***	-.217***	-.139***	.059***	-.133***	-.123***	-.224***	-.310***	-.027	.003		
LEGORG	-.056***		-.123***	-.057***	-.142***	-.036**	-.098***	.279***	-.031*	.137***	-.050***	.257***	.303***	.023	0.77	1.29
SHPRRI	-.245***	-.113***		.334***	.306***	.404***	.331***	-.169***	.210***	-.176***	.224***	.034*	-.064***	-.066***	0.72	1.39
JUDEFF	-.077***	-.044**	.376***		.602***	.720***	.721***	-.318***	.309***	-.145***	.267***	-.017	-.134***	-.313***	0.30	3.34
POLSTB	-.133***	-.135***	.304***	.601***		.769***	.796***	-.298***	.364***	-.026	.362***	.170***	.060***	-.038**	0.36	2.75
GOVEFF	-.182***	-.077***	.427***	.781***	.763***		.810***	-.338***	.492***	.068***	.533***	.281***	.083***	-.149***	0.09	9.08
CONCOR	-.119***	-.146***	.369***	.799***	.763***	.809***		-.360***	.462***	.024	.474***	.187***	.025	-.149***	0.09	9.83
POWDIS	.058***	.266***	-.215***	-.414***	-.311***	-.462***	-.512***		-.406***	.103***	-.206***	.041**	.070***	.030*	0.56	1.80
INDIVI	-.114***	-.134***	.258***	.421***	.400***	.576***	.563***	-.554***		.112***	.358***	.168***	.044**	-.061***	0.53	1.87
UNCAVO	-.144***	.102***	-.187***	-.166***	-.016	.016	-.048***	.163***	.053***		.295***	.343***	.280***	.206***	0.75	1.34
EDUATT	-.163***	-.091***	.277***	.313***	.303***	.505***	.466***	-.269***	.399***	.224***		.450***	.239***	.124***	0.62	1.62
LITRAT	-.344***	.235***	.076***	.097***	.241***	.309***	.209***	-.011	.200***	.273***	.320***		.398***	.165***	0.69	1.46
OFFLAN	-.062***	.238***	-.025	-.104***	.078***	.075***	.003	.045**	-.012	.245***	.183***	.334***		.375***	0.66	1.52
COLHIS	-.068***	.002	.044**	-.203***	.027	-.052***	-.082***	-.013	-.008	.208***	.139***	.158***	.452***		0.71	1.40

Notes: The bottom left part of the table represents the Pearson correlation matrix, while the upper right part represents the Spearman correlation matrix.

*** Correlation is significant at the 0.01 level (2-tailed).

** Correlation is significant at the 0.05 level (2-tailed).

* Correlation is significant at the 0.10 level (2-tailed).

Table 5. The results of ordered logit and probit regressions.

Transnational antecedents	The ISAs adoption					
	Ordered logit			Ordered probit		
Cumulative binary Logit	Coef.	z	P>z	Coef.	z	P>z
Legal antecedents						
SHPRRI	-0.02	-1.07	(0.283)	-0.01	-0.68	(0.495)
JUDEFF	-0.10***	-2.66	(0.008)	-0.07***	-3.10	(0.002)
Legal origins						
ENGCOM	0.04	0.21	(0.830)	0.20*	1.73	(0.083)
FRNCIV	1.59***	7.17	(0.000)	0.76***	6.07	(0.000)
SPACIV	3.87***	10.80	(0.000)	2.19***	10.55	(0.000)
PORCIV	1.57***	3.92	(0.000)	1.02***	4.18	(0.000)
GERCIV	1.33***	5.76	(0.000)	0.81***	6.07	(0.000)
SOCCIV	-1.25***	-5.56	(0.000)	-0.68***	-5.18	(0.000)
ENGREL	0.93***	2.84	(0.005)	0.62***	3.50	(0.000)
ENGDUT	-0.08	-0.34	(0.730)	-0.11	-0.87	(0.385)
FRNISL	1.52***	5.63	(0.000)	0.80***	5.12	(0.000)
ENGISL	1.58***	6.48	(0.000)	0.92***	6.79	(0.000)
Political antecedents						
POLSTB	0.14**	2.05	(0.041)	0.10***	2.81	(0.005)
GOVEFF	-0.47***	-3.80	(0.000)	-0.29***	-4.00	(0.000)
CONCOR	0.28**	2.33	(0.020)	0.15**	2.13	(0.033)
Cultural antecedents						
POWDIS	0.06**	2.24	(0.025)	0.04***	2.61	(0.009)
INDIVI	0.02	1.06	(0.288)	0.02	1.21	(0.225)
UNCAVO	-0.12***	-5.65	(0.000)	-0.06***	-5.34	(0.000)
Educational antecedents						
EDUATT	0.01*	1.75	(0.081)	0.01	1.57	(0.116)
LITRAT	-0.03***	-9.39	(0.000)	-0.01***	-8.03	(0.000)
Control variables						
Official language						
ENGLAN	-0.29*	-1.86	(0.062)	-0.01	-0.11	(0.909)
FRNLAN	-0.28	-1.33	(0.184)	0.05	0.38	(0.707)
SPALAN	-3.06***	-8.36	(0.000)	-1.49***	-7.05	(0.000)
ARALAN	0.40*	1.68	(0.093)	0.29**	2.13	(0.033)
GERLAN	0.21	0.98	(0.328)	0.22*	1.82	(0.069)
RUSLAN	1.23***	5.36	(0.000)	0.75***	5.20	(0.000)

Continuation table 5.	Ordered logit			Ordered probit		
	Coef.	z	P>z	Coef.	z	P>z
Colonial history						
NEVCOL	-0.30**	-2.05	(0.040)	-0.32***	-3.68	(0.000)
BRICOL	-0.29*	-1.81	(0.071)	-0.32***	-3.35	(0.001)
FRNCOL	0.16	0.89	(0.375)	0.17	1.61	(0.108)
SPACOL	-0.52	-1.42	(0.156)	-0.49**	-2.31	(0.021)
PORCOL	2.13***	5.18	(0.000)	1.26***	5.02	(0.000)
DUTCOL	1.17***	4.54	(0.000)	0.79***	5.01	(0.000)
GERCOL	0.30	1.18	(0.238)	0.12	0.77	(0.439)
RUSCOL	0.62***	3.72	(0.000)	0.36***	3.63	(0.000)
Constant 1	-6.98***	-14.15	(0.000)	-3.55***	-12.65	(0.000)
Constant 2	-5.12***	-10.55	(0.000)	-2.60***	-9.34	(0.000)
Constant 3	-3.61***	-7.50	(0.000)	-1.75***	-6.29	(0.000)
Constant 4	-0.89*	-1.87	(0.062)	-0.20	-0.72	(0.472)
Number of observations	3240			3240		
LR chi2(34)	1642.7***		(0.000)	1590.8***		(0.000)
McFadden's Pseudo R2	0.180			0.174		
McFadden (adjusted)	0.171			0.166		
Cox & Snell R Square	0.398			0.388		
Nagelkerke R-Square	0.423			0.413		
Log-likelihood (Model)	-3750.60			-3776.55		
Likelihood-ratio test	3129.4***		(0.000)			

Note: Statistical significance level (p-values) is displayed in parentheses *** p<0.01, ** p<0.05, * p<0.10.

Table 6. The results of a series of cumulative binary logistic regressions.

Cumulative logit models	The ISAs adoption				
	Model 1 Coef.	Model 2 Coef.	Model 3 Coef.	Model 4 Coef.	Ordered logit Coef.
Legal antecedents					
SHPRRI	-0.87***	0.28***	-0.09***	0.05*	-0.02
	(0.000)	(0.000)	(0.002)	(0.059)	(0.283)
JUDEFF	0.08	-0.42***	0.18***	0.22***	-0.10***
	(0.666)	(0.000)	(0.001)	(0.000)	(0.008)
Legal origins					
ENGCOM	46.01	16.87	0.52**	0.03	0.04
	(0.974)	(0.988)	(0.034)	(0.912)	(0.830)
FRNCIV	14.98	16.34	-2.51***	0.28	1.59***
	(0.995)	(0.993)	(0.000)	(0.292)	(0.000)
SPACIV	12.62	-23.17	16.52	30.64	3.87***
	(0.995)	(0.998)	(0.990)	(0.973)	(0.000)
PORCIV	44.07	-9.58	18.09	15.96	1.57***
	(1.000)	(1.000)	(0.995)	(0.983)	(0.000)
GERCIV	6.08	32.93	-0.98***	0.85***	1.33***
	(0.998)	(0.983)	(0.001)	(0.002)	(0.000)
SOCCIV	21.01	34.16	-0.06	-1.47***	-1.25***
	(0.992)	(0.983)	(0.839)	(0.000)	(0.000)
ENGREL	14.31	-2.53	-0.14	1.70***	0.93***
	(0.997)	(0.1000)	(0.716)	(0.000)	(0.005)
ENGDUT	-16.70	16.51	-0.60**	0.46*	-0.08
	(0.992)	(0.988)	(0.033)	(0.072)	(0.730)
FRNISL	-52.74	-3.48	-19.99	1.39***	1.52***
	(0.994)	(0.999)	(0.977)	(0.000)	(0.000)
ENGISL	66.77	17.71	-16.76	0.16	1.58***
	(0.980)	(0.987)	(0.980)	(0.565)	(0.000)
Political antecedents					
POLSTB	-2.40***	0.01	0.26***	-0.03	0.14**
	(0.000)	(0.944)	(0.006)	(0.704)	(0.041)
GOVEFF	3.01***	-0.61***	0.30*	0.37**	-0.47***
	(0.000)	(0.008)	(0.074)	(0.015)	(0.000)
CONCOR	0.62	0.62***	-0.88***	-0.02	0.28**
	(0.250)	(0.007)	(0.000)	(0.909)	(0.020)
Cultural antecedents					
POWDIS	-1.09***	-0.31***	-0.02	0.27***	0.06**
	(0.000)	(0.000)	(0.566)	(0.000)	(0.025)
INDIVI	0.19	-0.04	0.08***	-0.03	0.02
	(0.187)	(0.426)	(0.006)	(0.288)	(0.288)
UNCAVO	0.34	0.20***	-0.11***	0.19***	-0.12***
	(0.101)	(0.000)	(0.000)	(0.000)	(0.000)
Educational antecedents					
EDUATT	0.12***	-0.05***	0.04***	-0.04***	0.01*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.081)
LITRAT	0.07**	0.04***	0.02***	-0.01*	-0.03***
	(0.019)	(0.000)	(0.000)	(0.076)	(0.000)

Continuation table 6	The ISAs adoption				
	Model 1 Coef.	Model 2 Coef.	Model 3 Coef.	Model 4 Coef.	Ordered logit Coef.
Control variables					
Official language					
ENGLAN	-37.30	0.42	0.40*	0.14	-0.29*
	(0.988)	(0.212)	(0.085)	(0.434)	(0.062)
FRNLAN	17.65	19.38	-0.25	-0.40*	-0.28
	(0.991)	(0.987)	(0.466)	(0.096)	(0.184)
SPALAN	-18.29	38.74	-33.37	-14.59	-3.06***
	(0.998)	(0.990)	(0.985)	(0.982)	(0.000)
ARALAN	16.08	17.38	17.67	-1.43***	0.40*
	(0.998)	(0.991)	(0.979)	(0.000)	(0.093)
GERLAN	2.02	0.65	-0.68**	0.27	0.21
	(0.999)	(0.120)	(0.024)	(0.255)	(0.328)
RUSLAN	22.77	20.89	1.28***	1.02***	1.23***
	(0.994)	(0.996)	(0.000)	(0.002)	(0.000)
Colonial history					
NEVCOL	1.86	1.38***	-0.20	0.20	-0.30**
	(0.153)	(0.000)	(0.357)	(0.265)	(0.040)
BRICOL	56.99	16.65	0.82***	-0.21	-0.29*
	(0.986)	(0.988)	(0.001)	(0.295)	(0.071)
FRNCOL	9.19	19.73	1.22***	-0.04	0.16
	(0.994)	(0.990)	(0.000)	(0.873)	(0.375)
SPACOL	22.68	17.17	16.56	-16.10	-0.52
	(0.997)	(0.995)	(0.990)	(0.980)	(0.156)
PORCOL	-46.02	-8.89	20.99	-16.55	2.13***
	(1.000)	(1.000)	(0.994)	(0.983)	(0.000)
DUTCOL	18.30	18.63	1.04***	0.01	1.17***
	(0.998)	(0.996)	(0.007)	(0.989)	(0.000)
GERCOL	-8.72	19.68	-0.14	0.43	0.30
	(0.998)	(0.996)	(0.719)	(0.154)	(0.238)
RUSCOL	22.28	0.10	-0.71***	1.09***	0.62***
	(0.990)	(0.662)	(0.001)	(0.000)	(0.000)
Constant	-23.50	-36.90	-2.64***	-3.87***	
	(0.991)	(0.981)	(0.000)	(0.000)	
Number of observations	3240	3240	3240	3240	3240
LR chi2	430.2***	542.7***	826.3***	639.7***	1642.7***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
McFadden's Pseudo-R2	0.561	0.261	0.221	0.152	0.180
McFadden (adjusted)	0.560	0.260	0.220	0.150	0.171
Log likelihood (Model)	-168.52	-770.55	-1454.43	-1781.57	-3.750.60

Note: Statistical significance level (p-values) display in parentheses *** $p<0.01$, ** $p<0.05$, * $p<0.10$.

Table 7. Results of the multinomial probit regression models.

Cumulative binary Logit	The ISAs adoption				
	Model 1 Coef.	Model 2 Coef.	Model 3 Coef.	Model 4 Coef.	Ordered logit Coef.
Legal antecedents					
SHPRRI	-0.62***	0.17***	0.07*	-0.10***	-0.02
	(0.000)	(0.000)	(0.068)	(0.005)	(0.283)
JUDEFF	0.20	-0.17**	0.20***	0.19***	-0.10***
	(0.180)	(0.032)	(0.003)	(0.001)	(0.008)
Legal origins					
ENGCOM	-56.98	1.60*	-10.66	-10.63	0.04
	(0.999)	(0.076)	(0.990)	(0.990)	(0.830)
FRNCIV	-4.37	-3.82***	-66.01	-11.83	1.59***
	(0.988)	(0.000)	(0.998)	(0.989)	(0.000)
SPACIV	-21.28***	-33.64	-17.80	-12.79	3.87***
	(0.000)	(0.986)	(0.989)	(0.988)	(0.000)
PORCIV	-25.97	-12.48	-32.98	-1.15	1.57***
	(1.000)	(1.000)	(1.000)	(0.999)	(0.000)
GERCIV	-36.19	11.18***	-56.09	-10.08	1.33***
	(1.000)	(0.000)	(0.998)	(0.991)	(0.000)
SOCCIV	12.77	22.69***	0.03	-0.30	-1.25***
	(0.971)	(0.000)	(1.000)	(1.000)	(0.000)
ENGREL	-30.96	-16.89	0.13	1.54	0.93***
	(1.000)	(1.000)	(1.000)	(1.000)	(0.005)
ENGDUT	-6.54	13.40	2.04	1.29	-0.08
	(0.999)	(0.996)	(0.999)	(1.000)	(0.730)
FRNISL	-38.73	-28.18	-29.98***	-10.89	1.52***
	(0.911)	(1.000)	(0.000)	(0.990)	(0.000)
ENGISL	-71.20	0.87	-28.81	-11.86	1.58***
	(0.999)	(0.316)	(0.925)	(0.989)	(0.000)
Political antecedents					
POLSTB	-2.14***	-0.21*	-0.21**	-0.28***	0.14**
	(0.000)	(0.082)	(0.044)	(0.001)	(0.041)
GOVEFF	2.92***	0.26	0.72***	1.11***	-0.47***
	(0.000)	(0.285)	(0.001)	(0.000)	(0.000)
CONCOR	0.25	0.34	-0.35**	-0.19	0.28**
	(0.545)	(0.141)	(0.087)	(0.287)	(0.020)
Cultural antecedents					
POWDIS	-0.69***	-0.04	0.15***	0.26***	0.06**
	(0.000)	(0.471)	(0.003)	(0.000)	(0.025)
INDIVI	0.08	-0.13***	-0.16***	-0.03	0.02
	(0.434)	(0.007)	(0.000)	(0.502)	(0.288)
UNCAVO	0.64***	0.48***	0.30***	0.41***	-0.12***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Educational antecedents					
EDUATT	0.08***	-0.05***	0.01	-0.04***	0.01*
	(0.000)	(0.000)	(0.451)	(0.000)	(0.081)
LITRAT	0.09***	0.04***	0.03***	0.01***	-0.03***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

	The ISAs adoption				
Continuation table 7	Model 1 Coef.	Model 1 Coef.	Model 1 Coef.	Model 1 Coef.	Model 1 Coef.
Control variables					
Official language					
ENGLAN	-19.43	0.98***	0.49	0.92***	-0.29*
	(0.838)	(0.001)	(0.108)	(0.000)	(0.062)
FRNLAN	-30.16	16.54	9.97	0.18	-0.28
	(0.999)	(0.989)	(1.000)	(0.506)	(0.184)
SPALAN	3.24	31.19***	-5.81	1.36	-3.06***
	(0.998)	(0.000)	(0.999)	(0.999)	(0.000)
ARALAN	6.18	-31.39	16.41	-2.09***	0.40*
	(0.994)	(1.000)	(0.985)	(0.000)	(0.093)
GERLAN	-16.36	-0.08	-48.76	-0.41	0.21
	(1.000)	(0.848)	(0.999)	(0.207)	(0.328)
RUSLAN	-35.12	-33.37	-0.01	0.46	1.23***
	(1.000)	(1.000)	(1.000)	(1.000)	(0.000)
Colonial history					
NEVCOL	13.23***	12.38	11.66***	11.64***	-0.30**
	(0.000)	(0.945)	(0.000)	(0.000)	(0.040)
BRICOL	32.19	10.21	0.01	0.42*	-0.29*
	(0.971)	(0.935)	(0.995)	(0.098)	(0.071)
FRNCOL	-23.51	-32.53	1.37***	0.83***	0.16
	(1.000)	(1.000)	(0.000)	(0.001)	(0.375)
SPACOL	16.60	12.95	12.35	0.45	-0.52
	(0.992)	(0.993)	(0.989)	(1.000)	(0.156)
PORCOL	-18.93	-22.24	-33.99	-11.36	2.13***
	(1.000)	(1.000)	(1.000)	(0.984)	(0.000)
DUTCOL	-27.94	-32.97	-33.78	-0.52	1.17***
	(1.000)	(1.000)	(1.000)	(0.190)	(0.000)
GERCOL	-5.85	-32.91	22.83	-0.48	0.30
	(1.000)	(1.000)	(0.998)	(0.309)	(0.238)
RUSCOL	-35.03	0.33	-0.36	1.22	0.62***
	(1.000)	(1.000)	(1.000)	(0.999)	(0.000)
Constant	-8.49**	-17.43	5.61	6.09	
	(0.018)	(0.971)	(0.995)	(0.994)	
Number of observations	3240	3240	3240	3240	3240
McFadden's Pseudo-R2	0.450	0.450	0.450	0.450	0.180
Wald Chi-Square	240000***	240000***	240000***	240000***	1642.7***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Log likelihood	-2553.13	-2553.13	-2553.13	-2553.13	0.398

Note: Statistical significance level (p-values) display in parentheses *** p<0.01, ** p<0.05, * p<0.10.