The causes and effects of IFRS adoption speed: diffusion of innovation theory perspective

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Abstract: This study investigates the drivers and economic benefits of adopting international financial reporting standards (IFRS) by applying the classification proposed by the diffusion of innovation theory. By employing multiple linear regression and a series of cumulative logistic regression for a large sample spanning 1995–2014, this paper shows that countries with Anglo-Saxon culture and substantial protection rights tend to accelerate their IFRS adoption decision to maintain their legal legitimacy. This paper also indicates that countries with lower governance indicators are more prone to hasten their IFRS adoption to improve the quality of their political systems. This research reports that countries with higher educational attainment and literacy rates but lower education quality levels are more likely to hasten their IFRS adoption to enhance their education systems quality. Results indicate a positive relationship between four economic indicators (i.e., economic growth, FDI, GDP and interest rates) and the rapid IFRS adoption speed.

Keywords: IFRS adoption speed; diffusion of innovation theory; causes; economic benefits.

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1 Introduction

Although IFRS adoption has been widely studied by many scholars, few empirical studies have investigated the country-level factors that can hasten or hinder the adoption speed of IFRS (i.e., Hope et al., 2006; Judge et al., 2010; Mita and Husnah, 2015; El-Helaly et al., 2020). This study, therefore, examines the impact of macroeconomic factors on the adoption of international financial reporting standards (IFRS). Specifically, this paper discusses the national reasons why some nations have adopted IFRS in the early times while others have adopted IFRS recently, or some have not embraced IFRS yet. This study offers a better understanding of the main socio-economic factors that determine IFRS diffusion worldwide. Additionally, even though some prior studies have studied the economic effects of IFRS adoption by focusing merely on a few economic indicators (Epstein, 2009; Gordon et al., 2012; Lungu et al., 2017), or by conducting their study in a particular developing country (Sharma et al., 2017; Bova and Pereira, 2012; Tran et al., 2019; Alon, 2013; Al-Htaybat, 2018; Ionascu et al., 2014). This paper, therefore, examines how adopting countries worldwide benefit economically from IFRS adoption. Many countries worldwide have adopted IFRS either mandatory by law or voluntarily as a response to various national and international factors. Although some scholars have tried to use the diffusion theory to explain why some countries adopted IFRS in the early times, while others slowed down or postponed their IFRS adoption decisions (Koning et al., 2018; El-Helaly et al., 2020; Dayyala et al., 2020; Elmghaamez et al., 2022), the main reasons for the global IFRS adoption are still ambiguous. Therefore, this paper uses the diffusion of innovation theory to explain the motivations behind the diversity of IFRS adoption speed and illustrates the economic benefits of rapid IFRS adoption brought to the adopting countries.

Prior theoretical studies have applied several theories to explain the causes of IFRS adoption. Some scholars have employed the legal origin theory developed by La Porta, Lopez-de-Silanes, Shleifer and Vishny (LLSV) in 1997 to clarify the influence of legal factors on hastening IFRS adoption (Narktabtee and Patpanichchot, 2011; Ben-Othman and Kossentini, 2015; La Porta et al., 2008). According to LLSV theory, common law countries with strong shareholder protection are more prone to have better accounting standards than civil law countries to satisfy investors' needs (La Porta et al., 1998). Therefore, different legal origins among countries may explain the diversity of time and speed of IFRS adoption (Lozada, 2014). Besides, some previous studies have employed Gray's cultural theory to explain the influence of cultural values on IFRS adoption (Borker, 2012a; Delcoure and Huff, 2015; Ding et al., 2005; Clements et al., 2010; Cardona et al., 2014; Shima and Yang, 2012; Lasmin, 2012). However, this study uses the six Hofstede cultural dimensions to investigate which cultural values can cause countries to facilitate their IFRS adoption.

Furthermore, prior research has also applied other theoretical frameworks to explain the effects of IFRS adoption. For example, other scholars have employed institutional theory to illustrate the impact of some institutional factors on IFRS adoption (Judge et al., 2010; Kim, 2016; Alon and Dwyer, 2014; Mantzari et al., 2017; Pricope, 2016). Institutional theory suggests that a country's accounting standards are due to coercive pressures from its political institutions to acquire legitimacy (Sudibyo and Jianfu, 2015). The institutional theory also emphasises normative pressure from educational institutions on IFRS adoption (DiMaggio and Powell, 1983). However, this study employs the DOI

theory to explain the evident diversity of global IFRS adoption among nations, which is hardly used by extant IFRS research (El-Helaly et al., 2020; Elmghaamez et al., 2022).

Despite the various efforts made by previous research, most prior studies have measured the adoption of IFRS using a binary dichotomous variable of whether a country has adopted IFRS at a particular time (e.g., Zeghal and Mhedhbi, 2006; Hope et al., 2006). However, and consistent with some existing research (Elmghaamez et al., 2020, 2022; El-Helaly et al., 2020), this study uses the adoption categories suggested by DOI theory to explain the causes and effects the global IFRS adoption. This study seeks to identify the impact of four institutional factors: legal, cultural, political, and educational, on the time and status of the global IFRS adoption. Most previous IFRS research has used data for small sample sizes and a short time horizon, and they found conflicting findings (e.g., Larson and Kenny, 1995; Zeghal and Mhedhbi, 2006). This study, therefore, examines the economic consequences of IFRS adoption by using a range of economic indicators for 185 countries over the period 1995–2014. Accordingly, this study investigates the causes and effects of IFRS adoption speed from an international comparison using the classification provided by DOI theory, which means that this paper contributes only to those empirical studies that examined the determinants and the economic consequences of IFRS adoption at the international level but not by country. Additionally, it is different from prior studies that have examined the impact of IFRS adoption on emerging capital markets' performance (Zeghal and Mhedhbi, 2012, 2016). This study examines the link between IFRS adoption and the economic performance of developing and developed economies categorised according to their first-time adoption.

Empirically, a variety of national legal factors are employed by prior studies to investigate their impact on the global IFRS adoption. These individual legal factors include legal origin (Dayanandan et al., 2016; Khurana and Michas, 2011; Yip and Young, 2012; Hope et al., 2006; Ahmed et al., 2013), shareholder protection rights (Houqe et al., 2012b; Soderstrom and Sun, 2007; Hope et al., 2006; Renders and Gaeremynck, 2007; Houqe et al., 2014), judicial independence (Houqe et al., 2012b, 2016; Albu and Albu, 2014; Kouki, 2018; Brown, 2013), and judicial efficiency (Cai et al., 2014; Chen et al., 2013; Mande, 2014; Wysocki, 2011). Therefore, this study examines the relationship between IFRS adoption and four legal determinants jointly: legal origin, shareholder protection rights, judicial independence, and judicial efficiency in providing a better understanding of the leading legal determinants that can influence the speed of IFRS adoption worldwide.

Moreover, previous empirical studies (e.g., Ramanna and Sletten, 2014; Alon and Dwyer, 2014; Houqe et al., 2016; Gordon et al., 2012; Cieslewicz, 2014; El-Helaly et al., 2020) have investigated the influence of worldwide governance indicators on the global IFRS adoption by using an aggregate governance index as a tool to measure the worldwide governance effectiveness rather than using the World Bank governance indicators (WGI). Unlike prior research that used an aggregate index for governance indicators, this study utilises four individual governance indicators to examine their impact on IFRS adoption speed, including political stability, voice and accountability, control of corruption, and regulatory quality. Furthermore, some scholars have studied the effect of some individual Hofstede cultural values on global IFRS adoption, and they found mixed findings (e.g., Tsakumis, 2007; Borker, 2012a, 2012b, 2013a, 2014; Cieslewicz, 2014; Clements et al., 2010; Ugrin et al., 2017; Ritsumeikan, 2012; Cardona et al., 2014). Hence, this study employs the six Hofstede cultural values for a large

sample of countries to explain the relationship between IFRS adoption and the individual cultural differences among countries, including power distance, uncertainty avoidance, individualism, masculinity, long-term orientation, and indulgence level.

Additionally, previous literature has studied the impact of literacy rates as a proxy to measure the influence of educational factors on IFRS adoption (e.g., Shima and Yang, 2012; Zehri and Chouaibi, 2013; Delcoure and Huff, 2015; Pricope, 2015; Zahid and Simga-Mugan, 2019; Albu and Albu, 2014). However, very few empirical studies have examined the association between IFRS adoption and the country's educational attainment level (Samaha and Khlif, 2016). There is a collective agreement that educational quality can accelerate IFRS adoption speed. This is because most adopting countries have updated their accounting curriculum to include subjects on IFRS implementation (Ayuba, 2012; Bova and Pereira, 2012). However, studying the impact of education quality on IFRS adoption speed has not yet been reviewed. This study, therefore, seeks to investigate the influence of three educational factors (literacy rates, educational attainment, and education quality) on the IFRS adoption speed.

Concerning the effect of economic factors on IFRS adoption, prior studies have investigated the influence of IFRS adoption on some economic indicators, namely GDP and FDI (Zehri and Abdelbaki, 2013; Zaidi and Huerta, 2014; Zehri and Chouaibi, 2013), export levels (Shima and Yang, 2012; Lasmin, 2012; Bruggemann, 2011). Whereas other empirical studies have compared the influence of IFRS adoption on the economic effects of countries located in specific geographical locations, such as Latin America and the Caribbean (Rathke et al., 2016; Birau et al., 2014), Asia and Africa (Chebaane and Ben-Othman, 2014), and the European Union (Soderstrom and Sun, 2007; Andre et al., 2015; Platikanova and Perramon, 2012; Bruggemann et al., 2013; Pascan, 2015). Nevertheless, almost no research has focused on studying the impact of global IFRS adoption on a wide range of macroeconomic effects. Hence, this study investigates the impact of global IFRS adoption on a range of economic indicators (economic growth, FDI, GDP, exports, and interest rates) for a large sample size relating to 185 countries worldwide and by using the new IFRS adoption classification suggested by DOI theory to fill the gap in the current literature and to provide a better understanding of the influence of IFRS adoption speed on the economic outcomes of adopting countries.

This study has several contributions to the extant literature. First, it differs from prior scholars who used several theories to explain IFRS adoption, such as legal origin theory (e.g., Ben-Othman and Kossentini, 2015; Narktabtee and Patpanichchot, 2011), Gray cultural theory (e.g., Borker, 2012a; Clements et al., 2010; Lasmin, 2012; Shima and Yang, 2012), and institutional theory (Judge et al., 2010; Pricope, 2016; Alon and Dwyer, 2014; Kim, 2016; Mantzari et al., 2017). This paper contributes to theoretical literature by employing the DOI theory to explain the apparent diversity of global IFRS adoption among nations over time, which is hardly used by the current IFRS research (Dayyala et al., 2020; El-Helaly et al., 2020; Elmghaamez et al., 2022). DOI theory provides a new classification of nations into five groups based on their IFRS adoption time: experimenters, early adopters, early majority, late adopters, and laggards. Second, prior studies used small sample sizes and mixed findings to investigate the relationship between IFRS adoption and some national antecedents. These factors include legal origin (e.g., Zehri and Chouaibi, 2013; Dimaa et al., 2013; Khurana and Michas, 2011), political stability index (Riahi and Khoufi, 2015; Pricope, 2015; Zaidi and Huerta, 2014), control of corruption index (Cai et al., 2014; Houqe and Monem, 2016), Hofstede's cultural dimensions (Lasmin, 2012; Neidermeyer et al., 2012; Cardona et al., 2014; Machado and

Nakao, 2014; Clements et al., 2010), educational attainment (Zehri and Chouaibi, 2013; Lasmin, 2011a; Judge et al., 2010), and literacy rates (Shima and Yang, 2012; Zehri and Chouaibi, 2013; Zeghal and Mhedhbi, 2006; Zehri and Abdelbaki, 2013). This study, therefore, contributes to the current IFRS studies by investigating the link between IFRS adoption speed and four institutional factors: legal, cultural, political, and educational factors, by using several proxies to examine the impact of each one of these institutional factors on IFRS adoption time to gain a better understanding of what are the main drivers of the global IFRS adoption speed.

Third, unlike previous empirical studies that used small samples and found mixed results to examine the impact of IFRS adoption on few economic factors, such as economic growth (e.g., Larson and Kenny, 1995; Ramanna and Sletten, 2014; Zeghal and Mhedhbi, 2006; Judge et al., 2010), FDI inflows (e.g., Márquez-Ramos, 2011; Chen et al., 2014; Nnadia and Soobaroyen, 2015; Lasmin, 2011b; Zeghal and Mhedhbi, 2006), GDP rate (e.g., Ramanna and Sletten, 2014; Clements et al., 2010; Lasmin, 2011a; Akpomi and Nnadi, 2017), export levels (Ramanna and Sletten, 2009; Márquez-Ramos, 2011; Pricope, 2017; Lasmin, 2012), and the level of interest rates (Bischof, 2009; Zhang, 2008; Choi and Lee, 2015; Kim et al., 2011), this paper contributes to the current empirical literature by examining the influence of IFRS adoption on a comprehensive set of economic factors (economic growth, FDI, GDP, exports, and interest rates) for a large sample of 185 countries and long-time-horizon from 1995 to 2014 to provide better understanding on the economic consequences of the global IFRS adoption. Fourth, different from previous research that has employed binary coding for IFRS adoption variables to examine the effects of global IFRS adoption (e.g., Zeghal and Mhedhbi, 2006; Hope et al., 2006; Pricope, 2016), this study has employed a series of cumulative binary logistic regression models to predict the relationship between the institutional factors and IFRS adoption speed.

The rest of this study is structured as follows. The following section presents the theoretical and empirical literature review alongside hypotheses development, followed by the research methodology and research findings and discussion. The final section outlines a brief conclusion.

2 Literature review

2.1 Theoretical framework

Previous studies have applied several theories to explain IFRS adoption, such as LLSV legal origins theory, to explain how the legal origin facilitates IFRS adoption (La Porta et al., 2008; Levine, 2008). According to LLSV theory, common law countries are more prone to adopt accounting innovations since they have vigorous legal enforcement to protect shareholder rights (La Porta et al., 1998; Rusu, 2012; Lozada, 2014; Elmghaamez and Elmagrhi, 2022). Furthermore, IFRS adoption is more likely to happen in countries with robust judicial efficiency and independence, which enhances the adopting country's economic development (Abouharb et al., 2013; Barth and Israeli, 2013; Daske et al., 2008).

Some scholars have applied institutional theory to explain the association between political factors and global IFRS adoption. According to institutional theory, coercive pressure emerges from political parties in a country that leads to adopting high-quality

accounting standards to satisfy international bodies' needs, such as the World Bank and IMF (Scott, 2013; DiMaggio and Powell, 1983; Langbein and Knack, 2010). Institutional theory suggests that countries with a higher level of corruption are more likely to adopt IFRS to control their corruption level (Houqe and Monem, 2013). Furthermore, the institutional theory suggests that IFRS adoption is more likely to happen as a response to normative pressure from professional and educational institutions to encourage organisations to adopt high-quality standards (DiMaggio and Powell, 1983; Judge et al., 2010; Lasmin, 2011b).

According to Gray's cultural theory, IFRS adoption is more prone to take place in countries with a higher score of individualism and indulgence indexes alongside lower levels of power distance, uncertainty avoidance, masculinity, and long-term orientation indexes (Gray, 1988; Neidermeyer et al., 2012; Clements et al., 2010). The cultural values in these countries are consistent with accounting values needed for IFRS adoption, namely professionalism, confidence, flexibility, and transparency (Zeghal and Mhedhbi, 2006; Borker, 2012a, 2012b; Perera and Mathews, 1990).

Based on institutional theory, countries with lower levels of economic indicators are more likely to adopt IFRS as a response to mimetic pressure that emerges from international and professional bodies to improve their economic situation and attract more forging investors (Wu and Patel, 2015; Lasmin, 2011a, 2011b; Pricope, 2016; Judge et al., 2010). Drawing on institutional theory, countries with higher international trade levels tend to adopt IFRS to respond to mimetic pressures from foreign investors (Irvine, 2008). The IFRS adoption is expected to increase the international trade measured by import and export levels among trading countries. It reduces information asymmetries and enhances the economic performance among trading countries (Márquez-Ramos, 2011; Neel, 2017).

However, some scholars have suggested employing the DOI theory to explain IFRS diffusion (e.g., Pelucio-Grecco et al., 2016; Alon, 2010; Ball, 2016; Jayeoba et al., 2016; Dayyala et al., 2020; El-Helaly et al., 2020; Elmghaamez et al., 2022). According to DOI theory, there are five adopters of innovations: experimenters, early adopters, early majority, late adopters, and laggards (Rogers, 1995). Drawing on the DOI theory, adopters' national characteristics have significantly influenced the diffusion of innovations, such as economic, cultural, political, and legal systems (Zanello et al., 2016; Elmghaamez, 2020). Adopting accounting innovations has been dramatically influenced by the characteristics of the invention itself alongside adopters' socioeconomic status (Wejnert, 2002; Elmghaamez, 2019). This study, therefore, employs the DOI theory as the leading theory to explain IFRS adoption speed since it provides a precise classification for describing and explaining the potential adopters of innovations in different groups based on their IFRS adoption time.

2.2 Empirical literature related to the causes of IFRS adoption and hypotheses development

Previous studies have merely investigated the impact of some individual legal factors on global IFRS adoption, such as legal origin (e.g., Dimaa et al., 2013; Zehri and Chouaibi, 2013; Khurana and Michas, 2011), shareholder protection laws (e.g., Renders and Gaeremynck, 2007; Houqe et al., 2012b; Hope et al., 2006), judicial independence (Houqe et al., 2012a, 2016; Albu and Albu, 2014; Kouki, 2018), and judicial efficiency (Hope, 2003; Cai et al., 2014; Chen et al., 2013; Mande, 2014; Wysocki, 2011). For

example, prior empirical research found a positive association between English common legal origin and IFRS adoption (Dimaa et al., 2013; Zehri and Chouaibi, 2013). Furthermore, previous studies also found a positive link between strong investor protection laws and IFRS adoption (Renders and Gaeremynck, 2007; Houqe et al., 2012b).

However, other scholars stated that countries with weak shareholder protection laws are more prone to adopt accounting innovations to facilitate their chance to access global financial markets (Hope et al., 2006; Francis et al., 2008; Elmghaamez and Elmagrhi, 2022). Moreover, very little empirical research has investigated the relationship between IFRS adoption and judicial independence and efficiency, and they reported different results. For instance, extant studies said that accounting innovations are more likely to happen in countries with solid judicial efficiency (Hope, 2003; Cai et al., 2014; Elmghaamez and Elmagrhi, 2022). Likewise, prior studies show a positive and significant association between IFRS adoption and legal independence (Houqe et al., 2012b; Avram et al., 2015; Ozcan, 2016; Zaidi and Huerta, 2014). Therefore, this paper employs four legal factors (shareholders protection laws, legal origin, judicial independence, and judicial efficiency) to predict their impact on IFRS adoption speed. Based on most prior studies' results, this study posits the following hypothesis:

H1 There is a positive relationship between an Anglo-Saxon legal origin and IFRS adoption speed.

Prior studies have employed individual governance indexes to examine the impact of some worldwide governance indicators on global IFRS adoption as proxies for political factors. For instance, various scholars found mixed results investigating the relationship between voice and accountability index and IFRS adoption. Some scholars found a positive and significant association between IFRS adoption and the voice and accountability index (Houqe et al., 2012b; Houqe and Monem, 2013, 2016). However, very few studies found a significant negative link between the voice and accountability index and IFRS adoption (Alon and Dwyer, 2014). Others did not find any relationship between IFRS adoption and the voice and accountability index (Ben-Othman and Zeghal, 2008).

Similarly, the relationship between the political stability index and IFRS adoption has been studied by previous studies, and they found mixed results. For instance, prior literature found a significant positive association between political stability and IFRS adoption (Zaidi and Huerta, 2014; Riahi and Khoufi, 2015; Pricope, 2015). In contrast, other studies revealed a negative and significant association between the political stability index and the likelihood of IFRS adoption (Pricope, 2014). Other scholars found an insignificant association between them (Ozcan, 2016). Likewise, previous research studied the impact of a regulatory quality index on increasing the desire for IFRS adoption, and they found mixed findings. For instance, some scholars found a significant positive link between IFRS adoption and the regulatory quality index (Wieczynska, 2016; Houqe et al., 2012a; Christensen et al., 2013). However, other studies show a significant negative association between IFRS adoption and the regulatory quality index (Ramanna and Sletten, 2009; Kaya and Koch, 2015). Similarly, prior studies reported mixed outcomes regarding the association between control of corruption index and IFRS adoption. For example, previous literature reports a significant positive link between IFRS adoption and the corruption of corruption index (Houqe and Monem, 2013;

Amiram, 2012; Riahi and Khoufi, 2015; Rahman, 2016). However, others found a significant negative association between IFRS adoption and control of the corruption index (Cai et al., 2014; Houqe and Monem, 2016). Drawing on the results reported by most previous research, this paper posits the following hypothesis:

H2 There is a positive link between strong worldwide governance indicators and IFRS adoption speed.

Existing IFRS literature examined the impact of Hofstede's cultural dimensions on IFRS adoption, and they reported mixed findings. For instance, some empirical studies reported a negative and significant association between power distance and IFRS adoption (Neidermeyer et al., 2012; Lasmin, 2012), while others found an insignificant association between them (Cardona et al., 2014; Clements et al., 2010). Similarly, previous studies showed a positive association between the individualism cultural index and IFRS adoption (Neidermeyer et al., 2012; Cardona et al., 2014; Machado and Nakao, 2014). However, very few studies found a significant negative link between the two variables (Lasmin, 2012; Clements et al., 2010). Likewise, some prior studies investigated the association between uncertainty avoidance and IFRS adoption, and they found a significant positive link between them (Machado and Nakao, 2014; Neidermeyer et al., 2012). However, other studies report a meaningful negative link between the uncertainty avoidance index and IFRS adoption (Yurekli, 2016; Shima and Yang, 2012; Fearnley and Gray, 2015; Lasmin, 2012). At the same time, the rest of researchers did not find any link between uncertainty avoidance and IFRS adoption (Cardona et al., 2014; Clements et al., 2010).

Besides, very few empirical studies have examined the relationship between the masculinity index and IFRS adoption. Although some studies show a significant positive association between the masculinity index and IFRS adoption (Fearnley and Gray, 2015), other scholars found a significant negative association between the two variables (Yurekli, 2016). However, other prior scholars could not find any association between the masculinity index and IFRS adoption (Clements et al., 2010; Cardona et al., 2014; Lasmin, 2012). Furthermore, very few studies examined the link between IFRS adoption and the long-term orientation cultural index. Some studies show a negative association between them (Tsui and Windsor, 2001; Ge and Thomas, 2008).

Nevertheless, Erkan and Agsakal (2013) found a positive and significant association between long-term orientation and high-quality accounting standards. In the same vein, few prior studies have examined the relationship between IFRS adoption indulgence cultural index. Most of them found a significant positive link between the two variables (Erkan and Agsakal, 2013; Borker, 2013a; Gierusz et al., 2014). However, Zeghal and Mhedhbi (2006) have merely investigated the impact of the Anglo-American culture measured by two cultural proxies (familiarity and language) on IFRS adoption. However, they did not examine the impact of culture by using Hofstede's cultural values on IFRS adoption in their study. Most previous studies have shown that countries with Anglo-Saxon cultural values are more prone to adopt IFRS quickly. Therefore, this study assumes the following hypothesis:

H3 There is a positive relationship between Anglo-Saxon cultural values and IFRS adoption speed.

Most existing IFRS literature shows a significant positive association between IFRS adoption and the level of educational attainment in a country (Lasmin, 2011a; Judge et al., 2010; Zehri and Chouaibi, 2013). At the same time, others found a significant negative relationship between IFRS adoption and the educational attainment level in a country (Ben-Othman and Kossentini, 2015). Similarly, some previous research reports a significant positive association between IFRS adoption and the level of literacy rates (Pricope, 2015; Archambault and Archambault, 2009; Zehri and Chouaibi, 2013; Shima and Yang, 2012; Zehri and Abdelbaki, 2013). In contrast, some studies found an insignificant association between the literacy rate and the likelihood of IFRS adoption (Mita and Husnah, 2015; Delcoure and Huff, 2015). Additionally, previous literature has not yet examined the relationship between the quality of the education system in a country and IFRS adoption. Nevertheless, there is a contextual consensus on the positive relationship between IFRS adoption and the level of education system quality (Ayuba, 2012; Bova and Pereira, 2012; Dowa et al., 2017; Masoud, 2014). Relying on the findings of most prior IFRS research, this study proposes the following hypothesis:

H4 There is a positive relationship between the education system quality and IFRS adoption speed.

2.3 The empirical literature on economic effects of IFRS adoption and hypotheses development

Some economic indicators measure economic development, such as economic growth and the earnings from foreign investments. Previous research has studied the influence of IFRS adoption on several individual economic factors. Specifically, current studies examined the relationship between economic growth and the decision of IFRS adoption, and they found a significant positive association between them (Larson, 1993; Stainbank, 2014; Zehri and Abdelbaki, 2013; Zehri and Chouaibi, 2013). Nonetheless, others show a significant negative relationship between the two variables (Larson and Kenny, 1995; Ramanna and Sletten, 2014). However, some scholars report an insignificant link between economic growth and IFRS adoption (Zaidi and Huerta, 2014; Zeghal and Mhedhbi, 2006; Judge et al., 2010).

Furthermore, most current empirical studies show a significant positive link between IFRS adoption and FDI inflows in emerging and developed countries alike (e.g., Akpomi and Nnadi, 2017; Gordon et al., 2012; Okpala, 2012; Chen et al., 2014; Márquez-Ramos, 2011). However, some scholars report a significant negative association between IFRS adoption and FDI inflows in emerging countries (e.g., Zehri and Chouaibi, 2013; Nnadia and Soobaroyen, 2015; Lasmin, 2012). Others did not find any association between the IFRS adoption and FDI inflows in emerging countries (Lasmin, 2011b; Adetula et al., 2014; Zeghal and Mhedhbi, 2006; Pricope, 2016). Foreign direct investment (FDI) has significantly driven economic growth than domestic investment (Borensztein et al., 1998). Since most of the prior studies found a positive link between IFRS adoption and economic growth level, this study, therefore, suggests the following hypothesis:

H5 There is a positive link between IFRS adoption speed and the economic development of a country.

Additionally, economic trading is measured using several economic indicators, such as GDP, export levels, and interest rates. Specifically, prior research investigated the

association between IFRS adoption and GDP rates, finding mixed findings. For example, few IFRS studies reported a significant positive relationship between GDP rates and IFRS adoption (Masoud, 2014), while others show an important negative link between the two variables (Gordon et al., 2012; Clements et al., 2010; Efobi, 2015; Ramanna and Sletten, 2014). However, the rest of the studies found insignificant link between GDP rates and IFRS adoption (Zeghal and Mhedhbi, 2006; Akpomi and Nnadi, 2017; Lasmin, 2011a).

Regarding the impact of IFRS on import and export levels, prior studies suggest a significant positive link between IFRS adoption and export levels (Ramanna and Sletten, 2009; Márquez-Ramos, 2011; Neel, 2017), while others report a significant negative association between the two variables (Pricope, 2017; Lasmin, 2012). Previous empirical research shows a crucial positive link between IFRS adoption and import levels (Shima and Yang, 2012; Pricope, 2016; Gordon et al., 2012; Archambault and Archambault, 2009; Judge et al., 2010). At the same time, others report a significant negative correlation between IFRS adoption and import levels (Lasmin, 2012).

Regarding the impact of IFRS on the interest rate, prior research found a significant positive association between IFRS adoption and interest rates (Zhang, 2008; Chen et al., 2015; Bischof, 2009). Nevertheless, others suggest a significant negative relationship between IFRS adoption and interest rates (Palea, 2007; Kim et al., 2011; Choi and Lee, 2015; Gordon et al., 2012). However, previous research has not sufficiently examined the economic benefits of IFRS adoption speed. This study, therefore, proposes the following hypothesis:

H6 There is a positive link between IFRS adoption speed and the trading indicators of a country.

3 Research methodology

This section discusses the sampling methods, data collection, and data analysis techniques.

3.1 Sampling methods

This subsection reviews the sampling techniques used in this paper. Specifically, this study employs a non-probability sampling method, namely the convenience sampling method applied by prior accounting research (e.g., Chimtengo, 2016; Preetham and Mahadevappa, 2014). The non-probability sampling techniques can be primarily used by quantitative studies, especially if there are limited resources to collect data or limited availability of needed data (Etikan et al., 2016). Consistent with prior empirical studies (e.g., Chimtengo, 2016; Preetham and Mahadevappa, 2014; Bandi, 2016; Matero and Matero, 2011), this paper employs the convenience sampling method because having a large sample size can lead to obtaining strong statistical power (Suen et al., 2014). However, due to the limited availability of required data related to national antecedents, the research sampling began with 185 countries and ended with 162 countries. Although the sample size has included 162 countries, it is still relatively large compared to the population size, representing approximately 56% of the entire population, which means that sampling error is still deficient (Reis et al., 2000).

Accordingly, the sample selected for this study was divided into two separate models due to the limited availability of data related to the causes of IFRS adoption. Therefore, the first sample included 162 countries classified into five adopter groups according to their IFRS adoption time, as suggested by the DOI theory developed by Rogers in 1962. The second sample comprises 185 countries categorised into five adopter groups according to their IFRS adoption time due to the data availability related to 185 adopting nations' economic consequences. Furthermore, the time horizon covered by this study included the period between 1995 and 2014 because the data were available up to 2014 by the time of gathering data needed for this study. Consistent with the classification of IFRS adoption categories suggested by El-Helaly et al. (2020), who relied on the adoption categories proposed by DOI theory to classify IFRS adopters. They classify those countries that adopted IFRS by 2003 as early adopters. They also rank those countries that adopted IFRS from 2004 to 2006 as the early majority group. They classified those countries that adopted IFRS by 2007 as late majority adopters and those that had not adopted IFRS by 2014 as laggards. This study, therefore, employs the classification suggested by DOI theory to categorise the adopting countries over time from 1995 to 2014. Table 1 shows the sampling for 185 countries that have adopted IFRS by 2014, as suggested by DOI theory, to investigate what causes them to adopt IFRS and the economic benefits of IFRS adoption.

3.2 Data collection methods

This section explains the data collection method used for this study gathered from various sources. Most quantitative research relies on secondary data prepared by a reliable body to collect the data needed for conducting their research (Kothari, 2004). Hence, this paper has also relied on various reliable secondary data sources to collect the necessary secondary data for this study. Specifically, Table 2 shows the data sources for all variables included in the two regression models related to the causes and effects of the global IFRS adoption. The secondary data needed for this study have been collected from various publicly reliable sources, as shown in Tables 2 and 3. The financial year 2014 was the last year for the data collected because it was the previous year for which the data was available to conduct this study. Unlike the IFRS adoption status employed by previous studies (Felski, 2017; Bhattacharjee and Islam, 2009; Ben-Othman and Kossentini, 2015), some countries have embraced IFRS without amendment, while others have adopted IFRS, but with modifications to meet some local requirements. This study, therefore, has mainly relied on the Deloitte IAS Plus website to collect data about the global IFRS status, which only provides information on whether IFRS is required or permitted for some or all domestic listed and unlisted companies.

Table 1 The classification of 185 countries that adopted the international financial reporting standards (IFRS) over the period from 1995–2014

Experimenters	*Early adopters*	*Early majority*		*Late majority*		*Laggards*
(1991–1995)	*(1996–2000)*	*(2001–2004)*		*(2005–2014)*		*(Non-adopters up to 2014)*
Bahamas, The	Bahrain	Albania	Afghanistan	Guinea-Bissau	Paraguay	Algeria	Kiribati
Bangladesh	Bolivia	Antigua and Barbuda	Argentina	Hong Kong	Philippines	Angola	Mali
Barbados	El Salvador	Armenia	Australia	Hungary	Poland	Benin	Marshall Islands
Gambia, The	Georgia	Azerbaijan	Austria	Iceland	Portugal	Burkina Faso	Mauritania
	Guyana	Bosnia and Herzegovina	Belarus	India	Romania	Burundi	Micronesia
	Jamaica	Botswana	Belgium	Ireland	Russian Federation	Cameroon	Niger
	Jordan	Costa Rica	Belize	Israel	Rwanda	Cape Verde	Palau
	Kenya	Dominica	Bhutan	Italy	Samoa	Central African	Puerto Rico
	Kuwait	Dominican Republic	Brazil	Japan	Seychelles	Republic	Sao Tome and
	Lebanon	Grenada	Brunei	Latvia	Serbia	Chad	Principe
	Macedonia	Guatemala	Darussalam	Liberia	Sierra Leone	Colombia	Senegal
	Mongolia	Haiti	Bulgaria	Libya	Slovakia	Comoros	Solomon Islands
	Nepal	Honduras	Cambodia	Lithuania	Slovenia	Congo,	Sudan
	Oman	Iraq	Canada	Luxembourg	South Africa	Democratic	Thailand
	Panama	Kazakhstan	Chile	Madagascar	South Korea	Republic	Timor-Leste
	Papua New Guinea	Kyrgyzstan	China	Malaysia	Spain	Congo, Republic of the	Togo
	Peru	Laos	Croatia	Maldives	Suriname	Cote d'Ivoire	Tonga
	Qatar	Lesotho	Cyprus	Malta	Swaziland	Djibouti	Tunisia
	Tajikistan	Malawi	Czech Republic	Mexico	Sweden	Equatorial Guinea	USA
	Trinidad & Tobago	Mauritius	Denmark	Moldova	Switzerland	Ethiopia	Vietnam
	Uganda	Myanmar	Ecuador	Montenegro	Syria	Gabon	
	United Arab Emirates	Saint Kitts and Nevis	Egypt	Morocco	Turkmenistan	Guinea	
	Uzbekistan	Saint Lucia	Eritrea	Mozambique	Ukraine	Indonesia	
	Zimbabwe	Saint Vincent and	Estonia	Namibia	UK	Iran	
		Grenadines	Fiji	Netherlands	Uruguay		
		Saudi Arabia	Finland	New Zealand	Vanuatu		
		Singapore	France	Nicaragua	Venezuela		
		Sri Lanka	Germany	Nigeria	Yemen		
		Tanzania	Ghana	Norway	Zambia		
		Turkey	Greece	Pakistan			

Table 2 Summary of variables definitions, measurements, and data sources of the causes of IFRS adoption

Variables	*Definitions and measures*	*Sources of data*
	Dependent variables	
IFRSAC	IFRS adopter categories are based on the first-time adoption derived from DOI:	IFRS by jurisdiction from Deloitte Touche Tohmatsu website, https://www.iasplus.com/en/resources/ifrs-topics/use-of-ifrs
EXPRF	'1' = Experiments refer to countries that adopted the IFRS before 1995	IFRS adoption by country provided by PWC available online at https://www.pwc.com/us/en/issues/ifrs-reporting/publications/assets/pwc-ifrs-by-country-2014.pdf
ERADF	'2' = Early adopters refer to countries that adopted the IFRS 1995–2000	
ERMJF	'3' = Early majority refer to countries that adopted the IFRS 2001–2004	The use of IFRS Standards around the world, available at http://www.ifrs.org/use-around-the-world/use-of-ifrs-standards-by-jurisdiction/
LTMJF	'4' = Late majority refer to countries that adopted the IFRS 2005–2014	
LGGRF	'5' = Laggards refer to countries that haven't adopted the IFRS up to 2014	
	Independent variables	
SHPR	The strength of the legal rights index ranges from 0 to 12, where 0 = weak legal rights score, while 12 = strong legal rights score.	The World Development Indicators WDI provided by the World Bank, available at http://data.worldbank.org/indicator/IC.LGL.CRED.XQ
JUEF	The judicial efficiency index ranges from 0 to 10, where 10 indicates that a country has the highest levels of impartial courts, and 0 otherwise.	Economic Freedom Dataset provided by the Fraser Institute in 2015, available at https://www.fraserinstitute.org/economic-freedom/dataset
JUIN	The judicial independence index ranges from 0–10, where 10 indicates that a country has a higher level of judicial independence, while 0 otherwise.	Economic Freedom Dataset provided by the Fraser Institute in 2015, available at https://www.fraserinstitute.org/economic-freedom/dataset
LSIN	The integrity of the legal system of a country. The data is ranked from 0–10, where 10 denotes the highest level of integrity in a country, and 0 otherwise.	Economic Freedom Dataset provided by the Fraser Institute in 2015, available at https://www.fraserinstitute.org/economic-freedom/dataset
LEOR	Legal origin provided by the World Factbook website:	World Factbook website established by the Central Intelligence Agency (CIA) of the US Federal Government, available at https://www.cia.gov/library/publications/the-world-factbook/fields/2100.html Rafael La Porta website available at http://faculty.tuck.dartmouth.edu/rafael-laporta/research-publications
ENCM	'0' = if a country has an English common law legal system	
FRCV	'1' = if a country has a French civil law legal system	
SPCV	'2' = if a country has a Spanish civil law legal system	
POCV	'3' = if a country has a Portuguese civil law legal system	
GECV	'4' = if a country has a German civil law legal system	
SOCV	'5' = if a country has a Socialist civil law legal system	
ENRE	'6' = if a country has a mixed English and Religious legal system	
ENDU	'7' = if a country has a mixed English and Dutch law legal system	
FRIS	'8' = if a country has a French civil and Islamic law legal system	
ENIS	'9' = if a country has an English and Islamic law legal system	
ENCV	'10' = if a country has a mixed English and Civil law legal system	
VOAC	The voice and accountability index ranges from –2.5 to 2.5	The Worldwide Governance Indicators (WGI) project provided by the World Bank Group available at http://info.worldbank.org/governance/wgi/#doc Kaufmann, D., Kraay, A. and Mastruzzi, M. (2016) *The Worldwide Governance Indicators. Aggregated Indicators of Governance 1996–2014.*
POST	The political stability index ranges from –2.5 to 2.5	
REQU	The regulatory quality index ranges from –2.5 to 2.5	
COCU	The control of the corruption index from –2.5 to 2.5	

Table 2 Summary of variables definitions, measurements, and data sources of the causes of IFRS adoption (continued)

Variables	*Definitions and measures*	*Sources of data*
	Independent variables	
PWDS	The power distance cultural index ranges from 0–10.	Geert Hofstede website provides insights to the dimensions of cultural influences for a list of countries, available at http://geerthofstede.com/research-and-vsm/dimension-data-matrix/
INDV	The individualism cultural index ranges from 0–10.	
UNAV	The uncertainty avoidance cultural index ranges from 0–10.	
MASC	The masculinity cultural index ranges from 0–10.	
LTOR	The long-term orientation cultural index ranges from 0–10.	
INDU	The indulgence cultural index ranges from 0–10.	
EDAT	The educational attainment includes data about both sexes who both completed and did not complete the highest level of education.	Barro-Lee Dataset presented at the World Bank http://databank.worldbank.org/data/reports.aspx?source=Education-Statistics:-Education-Attainment
LITR	The youth literacy rates refer to the percentage of a population per country for people aged 15–24 years for both sexes.	United Nations Educational, Scientific, and Cultural Organization (UNESCO) Institute for Statistics in Canada https://data.worldbank.org/indicator/SE.ADT.1524.LT.ZS
QEDS	The quality of the education system index. The data ranges from 1–7, where 1 denotes that a country has a lower level of education quality, whereas 7 indicates that a country has a higher level of education quality.	The Global Competitiveness Index (GCI) Historical Dataset presented at the World Economic Forum, available online at http://reports.weforum.org/global-competitiveness-report-2014-2015/rankings/
	Control variables	
GERI	Geographical regions refer to the classification suggested by World Bank:	The classification of all countries by the continental regions presented at the World Bank website accessed on 27/12/2015, available at http://www.worldbank.org/en/where-we-work
EURO	'1' = the country is in Europe	
NLSA	'2' = the country is in North, Latin, and South America	
CSAS	'3' = the country is in Central and South Asia	
EASP	'4' = the country is in East Asia and the Pacific	
MENA	'5' = the country is in the Middle East and North Africa	
AFRC	'6' = the country is in Sub-Saharan Africa	
OFLN	The official language that is spoken in a specific country.	The World Factbook website established by the Central Intelligence Agency (CIA), accessed on 27/12/2015, available at https://www.cia.gov/library/publications/the-world-factbook/fields/2098.html
ENGL	'1' = English is an official language in the country	
FRNL	'2' = French is an official language in the country	
SPNL	'3' = Spanish is an official language in the country	
ARBL	'4' = Arabic is an official language in the country	
GRML	'5' = German is an official language in the country	
RUSL	'6' = Russian is an official language in the country	
OTLN	'7' = Other languages are official languages in the country	

Table 2 Summary of variables definitions, measurements, and data sources of the causes of IFRS adoption (continued)

Variables	*Definitions and measures*	*Sources of data*
	Control variables	
COHI	The colonial history refers to the former colonial empires for a country:	The World Factbook website established by the Central Intelligence Agency (CIA), accessed on 27/12/2015, available online at https://www.cia.gov/library/publications/the-world-factbook/fields/2088.html
NEVC	'0' = Never colonised countries	
BRTC	'1' = Countries colonised by the British Empire	
FRNC	'2' = Countries colonised by the French Empire	
SPNC	'3' = Countries colonised by the Spanish Empire	
PORC	'4' = Countries colonised by the Portuguese Empire	
DUTC	'5' = Countries colonised by the Dutch Empire	
GRMC	'6' = Countries colonised by the German Empire	
RUSC	'7' = Countries colonised by the Russian Empire	
OTCO	'8' = Countries colonised by other colonists	

Table 3 Summary of variables definitions, measurements, and data sources of the economic effects of IFRS adoption

Variables	*Definitions and measures*	*Sources of data*
	Dependent variables	
ECGR (%)	The annual percentage of growth rate changes of real gross domestic product (GDP) at market prices and is based on constant local currency.	The World Bank national accounts, and OECD National Accounts, https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG
FDI (%)	Foreign direct investments are the net inflows of new investments from foreign investors.	The World Bank, International Debt Statistics, World Bank and OECD GDP estimates, and International Monetary Fund (IMF), https://data.worldbank.org/indicator/BX.KLT.DINV.WD.GD.ZS
GDP ($)	The gross domestic product (GDP) is the total market value of the final goods and services produced in a specific year by governments, companies, or foreigners operating in a country.	The World Bank national accounts, and OECD National Accounts, https://data.worldbank.org/indicator/NY.GDP.MKTP.CD
EXPO ($)	The export of goods and services represents the total market value of goods and services produced in a country and shipped to the rest of the world's countries measured in current USD.	The World Bank national accounts data, and OECD National Accounts, available at https://data.worldbank.org/indicator/NE.EXP.GNFS.CD
INTR (%)	The real interest rate is the percentage of lending interest rates adjusted for the inflation rate.	The World Bank data, International Monetary Fund (IMF), and the International Financial Statistics, available at https://data.worldbank.org/indicator/FR.INR.RINR
	Independent variables	
IFRSAC	IFRS adoption categories are derived from the DOI theory.	Use of IFRS by jurisdiction from Deloitte Touche Tohmatsu website, available at https://www.iasplus.com/en/resources/ifrs-topics/use-of-ifrs
EXPRF	'1' = Experiment refers to countries that adopted the IFRS before 1995	
ERADF	'2' = Early adopter refers to countries that adopted the IFRS 1995–2000	Use of IFRS Standards by jurisdiction provided by the IFRS Foundation (IFRS.org), available at http://www.ifrs.org/use-around-the-world/use-of-ifrs-standards-by-jurisdiction/
ERMJF	'3' = Early majority refers to countries that adopted the IFRS 2001–2004	
LTMJF	'4' = Late majority refers to countries that adopted the IFRS 2005–2014	
LGGRF	'5' = Laggards refers to countries that haven't adopted the IFRS by 2014	
IFRSLF	The IFRS adoption status for domestic listed firms	Use of IFRS by jurisdiction from Deloitte Touche Tohmatsu website, available at https://www.iasplus.com/en/resources/ifrs-topics/use-of-ifrs
NOSE	'0' = there is no local stock exchange in the country	
NREQ	'1' = IFRS is not required for domestic listed companies	Use of IFRS Standards by jurisdiction provided by the IFRS Foundation (IFRS.org), available at http://www.ifrs.org/use-around-the-world/use-of-ifrs-standards-by-jurisdiction/
NPER	'2' = IFRS is not permitted for domestic listed companies	
RFAL	'3' = IFRS is required for all domestic listed firms	
PFAL	'4' = IFRS is permitted for all domestic listed companies	
RFBI	'5' = IFRS is required only for domestic banks and insurance firms	
EXBI	'6' = IFRS is required for listed firms except for banks and insurance firms	

Table 3 Summary of variables definitions, measurements, and data sources of the economic effects of IFRS adoption (continued)

Variables	*Definitions and measures*	*Sources of data*
	Independent variables	
IFRSUF	The IFRS status for domestic unlisted firms	Use of IFRS by jurisdiction from Deloitte Touche Tohmatsu website, available at: https://www.iasplus.com/en/resources/ifrs-topics/use-of-ifrs
NORQ	'0' = IFRS is not required for domestic unlisted firms	
NOTP	'1' = IFRS is not permitted for domestic unlisted firms	
RADF	'2' = IFRS is required for all domestic unlisted firms	Use of IFRS Standards by jurisdiction provided by the IFRS Foundation (IFRS.org), available at: http://www.ifrs.org/use-around-the-world/use-of-ifrs-standards-by-jurisdiction/
RBIP	'3' = IFRS is required for domestic unlisted banks and insurance firms	
PADF	'4' = IFRS is permitted for all domestic unlisted firms	
RFFI	'5' = IFRS is required for domestic unlisted financial institutions	
RPAF	'6' = IFRS is required for publicly accountable firms	
PEBI	'7' = IFRS is permitted for unlisted firms except for banks and insurance	
IFRSFF	The IFRS adoption status for foreign firms	Use of IFRS Standards by jurisdiction provided by the IFRS Foundation (IFRS.org), available at: http://www.ifrs.org/use-around-the-world/use-of-ifrs-standards-by-jurisdiction/
NOTA	'0' = IFRS is not applicable	
NOTR	'1' = IFRS is not required for foreign firms	
RAFC	'2' = IFRS is required for all foreign companies	
PAFC	'3' = IFRS is permitted for all foreign companies	
RSPO	'4' = IFRS is required for some foreign firms, permitted for others	
IFRSME	The IFRS adoption status for SMEs	IFRS by jurisdiction provided by the IFRS Foundation IFRS.org. http://www.ifrs.org/use-around-the-world/use-of-ifrs-standards-by-jurisdiction/
NSME	'0' = IFRS is not adopted by SMEs	
ASME	'1' = IFRS is adopted by SMEs	
	Control variables	
GERI	Geographical regions refer to the classification suggested by the World Bank	The classification of all presented at the World Bank website, http://www.worldbank.org/en/where-we-work
OFLN	The official language that is spoken in a specific country.	World Factbook website established by the (CIA), https://www.cia.gov/library/publications/the-world-factbook/fields/2098.html
COHI	Colonial history refers to the former colonial empires for a country.	The World Factbook website established by the CIA, available at https://www.cia.gov/library/publications/the-world-factbook/fields/2088.html
D08-09	Year dummy for the crisis period, where 1 = 2008–2009, 0 = otherwise	Year dummies for the research period spanning from 1995–2014

3.3 Data analysis techniques

Since this study uses secondary data, quantitative data analysis methods are the best techniques to address the questions raised in this research. Therefore, this study employs basic parametric data analysis methods to examine the cause and effect of global IFRS adoption by applying the core statistical techniques: descriptive statistics and correlational and multivariate analysis. The descriptive analysis explores the attributes of a single variable, such as central tendency and dispersion. Multivariate analysis can investigate the association between explanatory variables and continuous outcome variables (Singh, 2007). Therefore, this paper employs nonlinear regression models to examine the causes of the IFRS adoption model. The nature of the outcome variables of the first model applied in this study is categorical, including five adopter groups suggested by DOI theory. This study also applies parametric linear regression analysis for the effects model of IFRS adoption. The nature of the dependent variables for the model of the economic effects involved in this study is continuous.

Most previous studies have employed OLS linear regression models to examine the association between the causes and effects of IFRS adoption (e.g., Shima and Yang, 2012; Ramanna and Sletten, 2014; Judge et al., 2010; Kossentini and Ben-Othman, 2014). This study, therefore, has combined the parametric and non-parametric data analysis techniques to investigate the causes and effects of IFRS adoption. Specifically, the dependent variables included in the first regression model are categorical, including the five adopters suggested by DOI theory; IFRS adoption categories: experimenters, early adopters, early majority, late majority, and laggards. This study, therefore, employed a series of cumulative binary logistic regression models to predict the relationship between the institutional factors and IFRS adoption speed. Moreover, this study has also applied linear regression models because the second regression model's dependent variables are continuous (macro-country economic indicators). The best time to employ ordinary least squares regression (OLS) is when the data has continuous outcome variables (Williams et al., 2013). Accordingly, this study uses linear regression models to investigate the economic effects of IFRS adoption speed using the adoption classification provided by the DOI theory. This paper, therefore, contributes to the empirical IFRS studies that examined the causes and effects of the global IFRS adoption speed at the macro-country level.

3.4 Variables and model specification

This section discusses all variables included in the first model that examines the causes of global IFRS adoption. The five IFRS adoption groups suggested by DOI theory: experimenters (EXPRF), early adopters (ERADF), early majority (ERMJF), late majority (LTMJF), and laggards (LGGRF) are the dependent variables included in the cause model. Additionally, and consistent with studies, this study employs IFRS adoption status by country collected from the Deloitte and PWC websites (e.g., Ramanna and Sletten, 2014; Hope et al., 2006; Stainbank, 2014; Judge et al., 2010; Ben-Othman and Kossentini, 2015). This study has also used the IAS Plus website, which provides an alternative classification for IFRS adoption categories. IFRS adoption is not permitted, IFRS adoption is allowed, and IFRS adoption is required for some firms. IFRS adoption is necessary for all firms. Moreover, this paper used three reliable sources to gather data about IFRS adoption time, including IFRS adoption by country provided by the PWC

website, Deloitte IAS Plus website, and IFRS standards around the world provided by the IFRS Foundation. This study uses the classification provided by the Deloitte IAS Plus website, which includes information on whether IFRS is not permitted or permitted for some companies and whether IFRS is required for some or all domestic listed and unlisted companies.

The cause model of IFRS adoption includes categorical dependent variables with ordinal categories suggested by the DOI theory (e.g., experimenters, early adopters, early majority, late majority, and laggards). Therefore, the ordered logistic regression model predicts the relationship between the ordinal dependent variable and explanatory variables. However, because of the violation in the parallel lines assumption required for ordered logit regression, a series of cumulative binary logistic regressions is employed, providing comparable results to those obtained by an ordinal logistic regression (Borooah, 2002). Ordinal logistic regression is used when the outcome variable has more than two categories with ordinal data, and it is essential to account for it. Multinomial logistic regression is typically used when the outcome variable has more than two categories, but the order does not matter (Liang et al., 2020).

Accordingly, the causes of IFRS include five dependent variables (experiments, early adopters, early majority, late majority, and laggards) and four explanatory variables: legal, cultural, political, and educational. Columns 1–4 of Table 9 present the contrasting groups' results, with a binary coding method for four dependent variables, excluding the base category (laggards) M = 5 – 1 = 4. Model 1 contrasts the experiments group with the other IFRS adoption categories. Model 2 compares the experiments and early adopter groups against the different IFRS adoption categories. Model 3 matches the experiments, early adopters, and early majority groups against the different IFRS adoption categories (late majority and laggards). Model 4 contrasts IFRS adoption categories (experiments, early adopters, early majority, and late majority group) against the last IFRS adoption category (laggards' group). Zero refers to the lowest values of the IFRS category in each dichotomisation, while one refers to the highest values of other IFRS adoption categories. Following previous empirical research (Ramanna and Sletten, 2014; Lasmin, 2011b; Amiram, 2012), this paper employed three social factors as control variables: geographical regions, official language, and colonial history. Since the parallel assumption of ordered logistic regression was violated, this study employs a series of cumulative binary logistic models. Equation (1) below defines how the cause model of IFRS adoption was applied:

$$\begin{aligned} \mathrm{Log}\left[P_{it}(1-P_{it})\right] = \alpha_0 + \beta_1 \sum_{i=1}^{5} LEGA_{it} + \beta_2 \sum_{i=1}^{4} POLA_{it} + \beta_3 \sum_{i=1}^{6} CULA_{it} \\ + \beta_4 \sum_{i=1}^{3} EDUA_{it} + \sum_{i=1}^{3} \beta_i CONTROLS_{it} + \varepsilon_{it} \end{aligned} \quad (1)$$

where Log is the natural logarithm of the odds ratio of the event, P_{it} is the probability of a binary response occurring in a country (i) in a year (t) for IFRS adoption, $(1 - P_{it})$ is the probability of not happening, $[P_{it}/1 - P_{it}]$ is the proportional odds of binary responses, α_0 is the constant term, β_j are the coefficients on the independent variables, $LEGA_{it}$ refers to the national legal factors, including several legal proxies: shareholders protection rights, judicial independence, judicial efficiency, legal system integrity, and legal origin. $POLA_{it}$ refers to the national political factors, including the following four political proxies: political stability, voice and accountability, regulatory quality, and control of corruption. $CULA_{it}$ refers to the national cultural values, which include six of Hofstede's cultural

dimensions: uncertainty avoidance, power distance, individualism level, masculinity, indulgence level, and a long-term orientation, $EDUA_{it}$ refers to the national educational factors, which includes three educational proxies: literacy rates, educational attainment, and education systems quality. $CONTROLS_{it}$ refers to three control variables: geographical region, official language, and colonial history, ε_{it} refers to the error term and represents each country's (i) in a year (t).

This study used continuous dependent variables regarding the effects of IFRS, namely economic growth, foreign direct investment, gross domestic product, exports, and interest rate. Several explanatory variables are included in the model of economic benefits of IFRS: IFRS adoption time suggested by DOI theory, IFRS status for listed firms, IFRS status for unlisted firms, IFRS status for foreign firms, and IFRS adoption status for SMEs. Similarly, this model has also included the same control variables: geographical regions, official language, and colonial history, in addition to year dummies for the financial crisis of 2007–2008. This study, therefore, employed multiple linear regression models to investigate the economic impact of IFRS adoption. Model (2) shows the equation for the economic effects of the IFRS adoption model, which is specified below as follows:

$$\begin{aligned} ECIFRS_{it} = {} & \alpha_0 + \beta_1 IFRSAC_{it} + \beta_2 IFRSLF_{it} + \beta_3 IFRSUF_{it} + \beta_4 IFRSFF_{it} \\ & + \beta_8 IFRSME_{it} + \sum_{i=1}^{4} \beta_i CONTROLS_{it} + \varepsilon_{it} \end{aligned} \tag{2}$$

where $ECIFRS_{it}$ is the economic outcomes of IFRS adoption for a country (i) in a year (t), which involves five macroeconomic indicators: economic growth, foreign direct investment, gross domestic product, exports, and interest rate, α_0 is the constant term, β_j is the coefficients on the independent variables. The explanatory variables include the following: IFRS adoption time suggested by DOI theory, IFRS status for listed firms, IFRS status for unlisted firms, IFRS status for foreign firms, and IFRS adoption status for SMEs. $\sum_{i=1}^{4} \beta_i CONTROLS_{it}$ refers to three variables controlled by the economic effects of IFRS, which are identical to those used in model (1) and the year dummies to control for the financial crisis period (D08–09). ε_{it} refers to the error term for a country (i) in a year (t).

4 Empirical findings

This section presents the descriptive and empirical findings of this study.

4.1 Descriptive analysis of the cause model of IFRS adoption

This section describes the statistical summary of all variables included in the model of causes of IFRS adoption. Panel A of Table 4 summarises the frequency distribution for 162 countries that adopted or have not yet adopted IFRS from 1995–2014, as suggested by DOI theory. Panel A of Table 4 reports that 132 countries (roughly 67% of the world's countries) have adopted IFRS by 2014. Panel A of Table 4 shows that 10 out of 24 English common law countries (ENCM) adopted IFRS at the early stages, while 12 out of 24 common law countries are involved in the LAMJA group. It also shows that 2 out of 25 French civil law countries (FRCV) adopted IFRS during the initial stages,

whereas 9 out of 25 French civil law countries adopted IFRS recently. It reports that 6 out of 17 Spanish civil law countries (SPCV) adopted IFRS during the early times, while 9 out of the 17 nations have adopted IFRS recently. Panel A of Table 4 shows that 4 out of 6 Portuguese civil law countries (POCV) adopted IFRS recently, while 13 out of 14 German civil law countries (GECV) adopted IFRS recently. In contrast, only 10 out of 27 socialist civil law countries (SOCV) adopted IFRS at the initial stages, and the rest of them have adopted IFRS recently. Moreover, Panels B, C, and D of Table 4 show the frequency distribution of the three social factors: geographical location, language, and colonial history for 162 countries.

Table 4 Summary of categorical variables of the causes of IFRS for 162 countries 1995–2014

Independent variables	*EXPRF*	*ERADF*	*ERMJF*	*LAMJF*	*LGGRF*	*Frequency*	*Countries*
Panel A: Legal origin (LEOR)							
ENCM	20	80	100	240	40	480	24
FRCV	0	0	40	180	280	500	25
SPCV	0	60	60	180	40	340	17
POCV	0	0	0	80	40	120	6
GECV	0	0	20	260	0	280	14
SOCV	0	80	120	320	20	540	27
ENRE	0	20	0	40	0	60	3
ENDU	0	40	60	40	20	160	08
FRIS	0	100	40	100	100	340	17
ENIS	40	60	0	120	20	240	12
ENCV	0	20	20	100	40	180	9
Total	*60*	*460*	*460*	*1,660*	*600*	*3,240*	*162*
Panel B: Control variables							
Geographical region (GERI)							
EURO	0	20	40	700	0	760	38
NLSA	20	140	120	240	60	580	29
CSAS	20	60	120	100	0	300	15
EASP	0	40	40	260	80	420	21
MENA	0	140	40	120	80	380	19
AFRC	20	60	100	240	380	800	40
Total	*60*	*460*	*460*	*1,660*	*600*	*3,240*	*162*
Official language (OFLN)							
ENGL	40	140	120	420	40	760	38
FRNL	0	0	20	60	300	380	19
SPNL	0	80	80	180	40	380	19
ARBL	0	140	40	100	80	360	18
GRML	0	0	0	140	0	140	7
RUSL	0	20	40	20	0	80	4
OTLN	20	80	160	740	140	1,140	57
Total	*60*	*460*	*460*	*1,660*	*600*	*3,240*	*162*

Table 4 Summary of categorical variables of the causes of IFRS for 162 countries 1995–2014

Independent variables	*EXPRF*	*ERADF*	*ERMJF*	*LAMJF*	*LGGRF*	*Frequency*	*Countries*
Panel B: Control variables							
Colonial history (COHI)							
NEVC	0	0	40	280	20	340	17
BRTC	60	220	200	440	60	980	49
FRNC	0	20	20	100	340	480	24
SPNC	0	80	60	160	40	340	17
PORC	0	20	0	60	40	120	6
DUTC	0	0	0	60	20	80	4
GRMC	0	20	0	40	20	80	4
RUSC	0	40	100	120	0	260	13
OTCO	0	60	40	400	60	560	28
Total	*60*	*460*	*460*	*1,660*	*600*	*3,240*	*162*

Table 5 summarises the descriptive statistics of continuous independent variables in the causes model of IFRS adoption for 162 countries from 1995–2014. For example, Table 5 shows that the late majority and early adopter groups have the highest and second-highest dispersion scores for SHPR with a mean of 5.69, 4.84, and higher standard deviation values of 2.48 and 2.42, respectively. Consistent with previous IFRS studies (Renders and Gaeremynck, 2007; Houqe et al., 2012b, 2014). Panel A of Table 5 shows that judicial efficiency data relevant to the EXPRF group ranges between 2.5 and 7.7, with an average of 5.31 and a standard deviation of 1.61. While the data pertinent to the LTMJF group ranges between 0.5 and 9.5 with a mean of 4.91 and a higher standard deviation of 2.03, indicating that there is a substantial variation in the judicial efficiency among countries, especially for the late majority groups, and these results are consistent with those reported by previous IFRS studies (Cai et al., 2014; Lantto and Sahlström, 2009).

Panel B of Table 5 summarises the descriptive analysis of the worldwide governance indicators as proxies for political factors. For instance, Table 5 shows that the experimenters and late majority groups of voice and accountability index have greater dispersion values among the other adopters of IFRS. The data relevant to the experimenters' group range from 1.32 to 1.47, with an average of –0.04 and a standard deviation of 0.98, which implies considerable variation in the importance of voice and accountability among countries, and this result supports the previous research (Houqe and Monem, 2013, 2016; Houqe et al., 2012a; Ben-Othman and Zeghal, 2008).

Table 5 summarises the descriptive statistics for Hofstede's cultural dimensions. Table 5 shows that the late majority group exhibits the highest variability score of the power distance index. The data relevant to the late majority group ranges from 1.50 to 10.0, with an average of 6.37 and a standard deviation of 2.14. This result implies a significant variation in countries' power distance cultural index. This result supports the findings reported by some prior IFRS literature (Clements et al., 2010; Neidermeyer et al., 2012; Lasmin, 2012; Borker, 2012a; Cardona et al., 2014).

Table 5 Summary of continuous variables in the causes of IFRS for 162 countries 1995–2014

Variables	*IFRSAC*	*N*	*%*	*Mean*	*Std. D*	*Variance*	*Min*	*Max*
Panel A: Legal factors (LEGF)								
SHPR	EXPRF	60	1.9%	6.60	1.34	1.80	4.00	9.00
	ERADF	460	14.2%	4.84	2.42	5.88	0.00	10.00
	ERMJF	460	14.2%	5.20	2.29	5.24	1.00	10.00
	LTMJF	1,660	51.2%	5.69	2.48	6.16	0.00	12.00
	LGGRF	600	18.5%	4.08	1.66	2.76	1.00	12.00
JUEF	EXPRF	60	1.9%	5.31	1.61	2.60	2.50	7.70
	ERADF	460	14.2%	4.34	1.44	2.09	1.70	7.50
	ERMJF	460	14.2%	4.27	1.50	2.25	0.90	8.70
	LTMJF	1,660	51.2%	4.91	2.03	4.10	0.50	9.50
	LGGRF	600	18.5%	3.87	1.17	1.37	0.00	9.00
JUIN	EXPRF	60	1.9%	1.00	0.82	0.68	0.00	2.00
	ERADF	460	14.2%	0.96	0.65	0.42	0.00	2.00
	ERMJF	460	14.2%	0.85	0.80	0.64	0.00	2.00
	LTMJF	1,660	51.2%	1.22	0.78	0.61	0.00	2.00
	LGGRF	600	18.5%	0.52	0.65	0.42	0.00	2.00
LSIN	EXPRF	60	1.9%	5.07	1.24	1.53	1.70	7.00
	ERADF	460	14.2%	5.39	1.78	3.15	0.80	8.30
	ERMJF	460	14.2%	5.07	1.96	3.85	1.70	10.00
	LTMJF	1,660	51.2%	6.59	2.50	6.26	0.00	10.00
	LGGRF	600	18.5%	4.63	1.81	3.29	0.00	10.00
Panel B: Political factors (POLF)								
VOAC	EXPRF	60	1.9%	–0.04	0.98	0.96	–1.32	1.47
	ERADF	460	14.2%	–0.32	0.57	0.32	–1.66	0.83
	ERMJF	460	14.2%	–0.37	0.81	0.65	–2.22	1.17
	LTMJF	1,660	51.2%	0.31	0.97	0.95	–2.04	1.83
	LGGRF	600	18.5%	–0.73	0.75	0.56	–1.88	1.37
POST	EXPRF	60	1.9%	0.07	0.97	0.94	–1.84	1.35
	ERADF	460	14.2%	–0.38	0.79	0.62	–2.24	1.21
	ERMJF	460	14.2%	–0.30	0.85	0.72	–3.18	1.34
	LTMJF	1,660	51.2%	0.15	0.96	0.91	–2.81	1.67
	LGGRF	600	18.5%	–0.70	0.98	0.96	–2.99	1.12
	EXPRF	60	1.9%	–0.16	0.83	0.68	–1.11	1.29
	ERADF	460	14.2%	–0.06	0.63	0.39	–2.21	1.12
REQU	ERMJF	460	14.2%	–0.17	0.81	0.65	–2.34	2.25
	LTMJF	1,660	51.2%	0.38	1.00	0.99	–2.19	2.08
	LGGRF	600	18.5%	–0.65	0.67	0.45	–2.41	1.74

Table 5 Summary of continuous variables in the causes of IFRS for 162 countries 1995–2014

Variables	*IFRSAC*	*N*	*%*	*Mean*	*Std. D*	*Variance*	*Min*	*Max*
COCU	EXPRF	60	1.9%	–0.06	1.06	1.12	–1.49	1.76
	ERADF	460	14.2%	–0.31	0.64	0.40	–1.39	1.72
	ERMJF	460	14.2%	–0.35	0.85	0.73	–1.82	2.42
	LTMJF	1,660	51.2%	0.32	1.11	1.24	–1.91	2.59
	LGGRF	600	18.5%	–0.59	0.63	0.40	–2.06	2.01
				Panel C: Cultural factors (CULF)				
PWDS	EXPRF	60	1.9%	7.17	0.63	0.40	6.50	8.00
	ERADF	460	14.2%	7.39	1.54	2.37	4.00	9.50
	ERMJF	460	14.2%	7.13	1.46	2.14	3.50	9.50
	LTMJF	1,660	51.2%	6.37	2.14	4.60	1.50	10.00
	LGGRF	600	18.5%	7.03	0.91	0.83	4.00	8.50
UNAV	EXPRF	60	1.9%	5.33	0.63	0.40	4.50	6.00
	ERADF	460	14.2%	6.65	2.13	4.54	1.50	9.50
	ERMJF	460	14.2%	6.28	2.11	4.44	1.00	10.00
	LTMJF	1,660	51.2%	6.84	2.16	4.68	2.50	10.00
	LGGRF	600	18.5%	5.40	1.17	1.36	1.50	8.00
INDV	EXPRF	60	1.9%	2.50	0.41	0.17	2.00	3.00
	ERADF	460	14.2%	2.96	1.58	2.50	1.50	9.00
	ERMJF	460	14.2%	2.98	1.29	1.67	1.50	6.50
	LTMJF	1,660	51.2%	4.48	2.17	4.72	1.50	9.00
	LGGRF	600	18.5%	2.63	1.55	2.40	1.50	9.50
MASC	EXPRF	60	1.9%	5.50	0.82	0.68	4.50	6.50
	ERADF	460	14.2%	5.26	1.12	1.26	4.00	8.00
	ERMJF	460	14.2%	4.80	1.54	2.37	1.00	8.00
	LTMJF	1,660	51.2%	4.87	1.82	3.31	1.00	10.00
	LGGRF	600	18.5%	4.92	1.37	1.89	1.50	7.00
LTOR	EXPRF	60	1.9%	3.00	1.48	2.20	1.50	5.00
	ERADF	460	14.2%	3.43	1.84	3.38	1.50	9.00
	ERMJF	460	14.2%	3.72	1.69	2.87	1.50	7.50
	LTMJF	1,660	51.2%	4.60	2.18	4.75	1.00	10.00
	LGGRF	600	18.5%	3.08	1.20	1.44	1.50	6.50
INDU	EXPRF	60	1.9%	3.83	1.45	2.09	2.00	5.50
	ERADF	460	14.2%	5.11	2.55	6.51	0.00	10.0
	ERMJF	460	14.2%	4.98	2.60	6.79	0.00	10.0
	LTMJF	1,660	51.2%	4.95	2.39	5.73	0.00	10.0
	LGGRF	600	18.5%	4.90	1.97	3.86	2.00	8.50

Table 5 Summary of continuous variables in the causes of IFRS for 162 countries 1995–2014

Variables	*IFRSAC*	*N*	*%*	*Mean*	*Std. D*	*Variance*	*Min*	*Max*
Panel D: Educational factors (EDUF)								
EDAT	EXPRF	60	1.9%	2.65	1.17	1.37	1.06	4.58
	ERADF	460	14.2%	13.36	9.84	96.82	0.19	35.99
	ERMJF	460	14.2%	12.14	10.82	117.14	0.02	36.97
	LTMJF	1,660	51.2%	15.28	10.98	120.58	0.03	62.02
	LGGRF	600	18.5%	7.76	9.71	94.21	0.56	57.28
LITR	EXPRF	60	1.9%	61.76	6.87	47.15	52.55	81.08
	ERADF	460	14.2%	93.39	8.52	72.57	66.68	99.87
	ERMJF	460	14.2%	91.09	11.66	136.02	50.55	100.00
	LTMJF	1,660	51.2%	87.76	13.96	194.76	46.97	100.00
	LGGRF	600	18.5%	72.77	24.62	606.09	19.41	99.96
	EXPRF	60	1.9%	4.18	0.87	0.76	2.62	5.38
	ERADF	460	14.2%	3.69	0.80	0.63	2.09	5.82
QEDS	ERMJF	460	14.2%	3.34	0.89	0.79	1.97	6.22
	LTMJF	1,660	51.2%	3.82	1.02	1.04	1.72	6.24
	LGGRF	600	18.5%	2.97	0.79	0.62	1.72	5.25

Table 5 provides a summary of the descriptive statistics for educational factors. For example, Table 5 reports that the educational attainment rate related to late majority and experimenter's groups exhibits the first and second highest variable values among IFRS groups. The data relevant to the late majority group ranges from 0.03 to 62.02, with an average of 15.28 and a standard deviation of 10.98. However, the data pertinent to the early adopter's group ranges from 0.02 to 36.97, with an average of 12.14 and a standard deviation of 10.82, suggesting considerable variation in the educational attainment level among countries. This result supports the findings reported by the current IFRS studies (Lasmin, 2011a; Zehri and Chouaibi, 2013; Judge et al., 2010; Ben-Othman and Kossentini, 2015).

4.2 Descriptive analysis of the effects of IFRS adoption

This section describes the summary of all variables included in the model of the economic effects of IFRS adoption speed. Table 6 reports the outline of the continuous dependent variables included in the effects model of IFRS adoption for 185 countries from 1995–2014 based on their first-time adoption across the five IFRS adopter groups proposed by DOI theory. For example, Table 6 reports that economic growth data relevant to the laggards group exhibit the highest variable values of the economic growth among the other adopter groups of IFRS, ranging from –36.05 to 149.97, with a higher average of 4.39 and a standard deviation of 7.84. This result aligns with the findings reported by prior studies (Zaidi and Huerta, 2014; Woolley, 1998; Delcoure and Huff, 2015; Ozcan, 2016; Paknezhad, 2017; Pricope, 2016; Zeghal and Mhedhbi, 2006; Judge et al., 2010).

Table 6 Summary of continuous variables of the effects of IFRS for 185 countries over 1995–2014

Dep var	*IFRSAC*	*N*	*%*	*Mean*	*Std. D*	*Variance*	*Min*	*Max*
ECGR (%)	EXPRF	80	2.2%	2.88	3.58	12.80	–15.26	7.14
	ERADF	480	13.0%	4.45	4.53	20.56	–17.67	30.01
	ERMJF	560	15.1%	4.88	6.69	44.72	–33.10	88.96
	LTMJF	1,780	48.1%	3.70	5.85	34.24	–62.08	106.28
	LGGRF	800	21.6%	4.39	7.84	61.40	–36.05	149.97
FDI (%)	EXPRF	80	2.2%	4.00	3.82	14.61	–0.34	15.05
	ERADF	480	13.0%	4.37	4.85	23.55	–2.50	45.27
	ERMJF	560	15.1%	6.31	7.04	49.52	–5.01	55.08
	LTMJF	1,780	48.1%	5.20	12.55	157.51	–82.89	255.42
	LGGRF	800	21.6%	4.54	13.56	183.84	–56.46	217.92
GDP ($)	EXPRF	80	2.2%	23.30	39.15	0.15	0.49	173.82
	ERADF	480	13.0%	31.02	54.66	0.30	0.62	402.34
	ERMJF	560	15.1%	52.95	126.84	1.61	0.22	823.24
	LTMJF	1,780	48.1%	362.61	869.76	75.65	0.13	10,360.11
	LGGRF	800	21.6%	351.70	2,006.13	402.46	0.06	17,419.00
EXPO ($)	EXPRF	80	2.2%	4.49	6.89	0.05	0.10	34.34
	ERADF	480	13.0%	17.11	43.83	1.92	0.41	399.53
	ERMJF	560	15.1%	27.85	79.46	6.31	0.11	578.96
	LTMJF	1,780	48.1%	111.84	227.35	51.69	0.03	2,342.54
	LGGRF	800	21.6%	50.89	236.48	55.92	0.01	2,262.22
INTR (%)	EXPRF	80	2.2%	9.96	8.52	7.25	–20.74	33.47
	ERADF	480	13.0%	15.14	44.95	202.04	–32.00	572.28
	ERMJF	560	15.1%	10.47	14.29	20.43	–18.88	150.10
	LTMJF	1,780	48.1%	6.32	11.20	12.55	–70.43	93.94
	LGGRF	800	21.6%	9.18	10.86	11.80	–94.22	78.27

Table 6 reports that FDI data relevant to the laggards and late majority groups exhibit the first and second highest variable values of FDI among the four IFRS groups. FDI data pertinent to the laggards group ranges from -56.46 to 217.92, with a mean of 4.54 and a higher standard deviation of 13.56. However, the data relevant to the late majority group goes from –82.89 to 255.42, with an average of 5.20 and a standard deviation of 12.55, revealing a significant variation in FDI data relevant to the laggards and late majority groups. These findings are consistent with the results reported by some prior studies (Madawaki, 2012; Rakesh and Shilpa, 2013; Jinadu et al., 2016; Pricope, 2017).

Table 6 reports that GDP data relevant to the laggards group exhibit the highest dispersion scores of GDP among different IFRS groups. The data ranges from 0.06 to 17,419.00, with an average of 351.70 and a standard deviation of 2,006.13, suggesting a substantial variation in the GDP data relating to the laggards and late majority groups. This finding is consistent with the results reported by previous studies (Clements et al., 2010; Evgenidis et al., 2016; Gordon et al., 2012; Efobi, 2015; Ramanna and Sletten,

2014). Table 6 also shows that export levels data relevant to the laggards group exhibits the first and second highest variable values of exports among the four IFRS adopter groups, ranging from 0.01 to 2,262.22, with an average of 50.89. A standard deviation of 236.48 suggests significant variation in the data of export levels among countries. This result is in line with the findings stated by the existing studies (Ramanna and Sletten, 2009; Neel, 2017; Márquez-Ramos, 2011; Pricope, 2017; Lasmin, 2012). Table 6 reports that interest rate data relevant to the early adopter's group exhibits the highest variable values among the four IFRS adopter groups. The data ranges from -32.00 to 572.28, with a mean of 15.14 and a standard deviation of 44.95, suggesting that there is a significant variation in the data of interest rates among countries, and this is in line with some prior studies (Palea, 2007; Zhang, 2008; Chen et al., 2015; Bischof, 2009; Gordon et al., 2012).

Table 7 presents the frequency of all independent and control categorical variables included in the effects model of IFRS adoption. Table 7 reports the frequency distributions of IFRS adoption categories proposed by the DOI theory. Table 7 also presents the other alternative IFRS adoption classifications, including the IFRS adoption status for listed firms, the IFRS adoption status for unlisted firms, the IFRS adoption status for foreign companies, and the IFRS adoption status for SMEs. Table 7 also shows the frequency of the control variables: geographical regions, official languages, and colonial history.

Table 7 A summary of categorical variables of the effects of IFRS for 185 countries over 1995–2014

Variables	*Observations*	*Countries*	*Percent*	*Cumulative*	*Tolerance*	*VIF*
			Panel A: (IFRSAC)			
EXPRF	80	4	2.2%	2.2%	0.64	1.56
ERADF	480	24	13.0%	15.2%	0.54	1.87
ERMJF	560	28	15.1%	30.3%	0.55	1.81
LTMJF	1,780	89	48.1%	78.4%	0.29	3.45
LGGRF	800	40	21.6%	100%	0.41	2.45
Total	3,700	185	100%			
			Panel B: (IFRSLF)			
NOSE	779	35	21.1%	21.1%	0.27	3.77
NREQ	870	99	23.5%	44.6%	0.24	4.24
NPER	632	40	17.1%	61.6%	0.32	3.08
RFAL	1,135	105	30.7%	92.3%	0.10	10.52
PFAL	204	28	5.5%	97.8%	0.17	5.90
RFBI	66	8	1.8%	99.6%	0.41	2.43
EXBI	14	3	0.4%	100%	0.64	1.55
Total	3,700		100%			

Table 7 A summary of categorical variables of the effects of IFRS for 185 countries over 1995–2014 (continued)

Variables	*Observations*	*Countries*	*Percent*	*Cumulative*	*Tolerance*	*VIF*
			Panel C: (IFRSUF)			
NORQ	1,490	132	40.3%	40.3%	0.25	3.95
NOTP	767	43	20.7%	61.0%	0.39	2.59
RADF	444	33	12.0%	73.0%	0.24	4.21
RBIP	275	29	7.4%	80.4%	0.33	3.04
PADF	420	44	11.4%	91.8%	0.31	3.23
RFFI	142	18	3.8%	95.6%	0.53	1.89
RPAF	101	13	2.7%	98.4%	0.54	1.87
PEBI	61	5	1.6%	100%	0.69	1.45
Total	3,700		100%			
			Panel D: (IFRSFF)			
NOTA	1,178	61	31.8%	31.8%	0.29	3.46
NOTR	1,217	118	32.9%	64.7%	0.29	3.40
RAFC	762	66	20.6%	85.3%	0.13	7.92
PAFC	251	28	6.8%	92.1%	0.27	3.70
RSPO	292	30	7.9%	100.0%	0.21	4.81
Total	3,700		100.0%			
			Panel E: (IFRSME)			
NSME	3,369	185	91.1%	91.1%	0.71	1.41
ASME	331	72	8.9%	100%	0.70	1.43
Total	3,700		100%			
			Control variables			
			Panel F: (GERE)			
EURO	780	39	21.10%	21.10%	0.23	4.43
LNAM	700	35	18.90%	40.00%	0.34	2.94
CSAS	360	18	9.70%	49.70%	0.41	2.47
EASP	560	28	15.10%	64.90%	0.47	2.15
MENA	400	20	10.80%	75.70%	0.22	4.45
AFRC	900	45	24.30%	100%	0.20	4.90
Total	3,700	185	100%			
			Panel G: (OFLN)			
ENGL	1,020	51	27.60%	27.60%	0.31	3.20
FRNL	420	21	11.40%	38.90%	0.30	3.30
SPNL	400	20	10.80%	49.70%	0.10	10.43
ARBL	380	19	10.30%	60.00%	0.20	4.92
GRML	140	7	3.80%	63.80%	0.76	1.31
RUSL	100	5	2.70%	66.50%	0.71	1.40
OTHL	1,240	62	33.50%	100%	0.26	3.86
Total	3,700	185	100%			

Table 7 A summary of categorical variables of the effects of IFRS for 185 countries over 1995–2014 (continued)

Variables	*Observations*	*Countries*	*Percent*	*Cumulative*	*Tolerance*	*VIF*
			Panel H: (COHS)			
NEVC	340	17	9.20%	9.20%	0.61	1.64
BRTC	1,200	60	32.40%	41.60%	0.26	3.92
FRNC	520	26	14.10%	55.70%	0.29	3.50
SPNC	360	18	9.70%	65.40%	0.09	10.63
PORC	160	8	4.30%	69.70%	0.61	1.64
DUTC	80	4	2.20%	71.90%	0.81	1.23
GRMC	140	7	3.80%	75.70%	0.65	1.54
RUSC	320	16	8.60%	84.30%	0.49	2.02
OTHC	580	29	15.70%	100%	0.38	2.61
Total	3,700	185	100%			

5 Multivariate regression analysis

5.1 Empirical results of the causes of IFRS adoption speed

This study employed a series of cumulative binary logistic regression models to predict the relationship between institutional factors and IFRS adoption. Table 8 present the results for four contrasting groups of cumulative logistic regressions. The regression diagnostics of Table 8 report that the values of the McFadden pseudo R-square for the goodness of fit across the four models provide a superior fit. Table 8 reports the results of a series of binary logistic models used to examine the causes of IFRS adoption.

Model 3 of Table 8 shows that countries with English common law are more likely to accelerate their IFRS adoption decision. This result is very similar to the prior studies (Dimaa et al., 2013; Zehri and Chouaibi, 2013; Ben-Othman and Kossentini, 2015; Elmghaamez and Elmagrhi, 2022). It also shows that countries with higher shareholders' protection rights are more likely to adopt IFRS during the earlier stages. This finding supports the evidence obtained from some prior empirical literature (Renders and Gaeremynck, 2007; Houqe et al., 2012b). Table 8 also shows that countries with a higher level of judicial efficiency and legal system integrity are more likely to adopt the IFRS during the initial times. This result is consistent with the findings reported by some prior empirical studies (Hope, 2003). Table 8 also reports that countries with higher judicial independence levels are more likely to accelerate their IFRS adoption. This finding supports the evidence provided by prior empirical studies (Ozcan, 2016; Zaidi and Huerta, 2014; Cai et al., 2014; Houqe et al., 2012b; Avram et al., 2015). This result suggests that hypothesis H1 is supported, which assumes that countries with English legal origin and strong shareholder protection are more likely to hasten their IFRS adoption. This finding also supports the theoretical expectations proposed by the diffusion of innovation theory, suggesting that countries with similar legal characteristics are more prone to embrace similar accounting innovations due to the legal enforcement existing in the adopting countries (Rogers, 1995; Elmghaamez, 2020).

Table 8 Series of binary logistic models on IFRS adoption for 162 countries over 1995–2014

National antecedents	*The IFRS adoption (IFRSAC)*				
Cumulative binary logit models	*Model 1*	*Model 2*	*Model 3*	*Model 4*	*Ordered logit*
Independent variables	*Coef.*	*Coef.*	*Coef.*	*Coef.*	*Coef.*
Legal factors (LEGF)					
SHPR	–1.52 (0.998)	–0.22* (0.060)	0.07* (0.078)	–0.51*** (0.000)	0.09*** (0.000)
JUEF	2.09 (0.999)	0.36* (0.090)	–0.05 (0.471)	0.95*** (0.000)	0.07 (0.108)
JUIN	–3.17 (0.997)	0.33 (0.293)	0.39*** (0.001)	–0.31* (0.079)	–0.26*** (0.001)
LSIN	0.44 (0.999)	0.44*** (0.007)	0.01 (0.886)	0.19*** (0.009)	0.07** (0.014)
Legal origins (LEOR)					
ENCM	–36.12 (0.996)	14.59 (0.945)	1.68*** (0.000)	–0.77 (0.211)	–1.12*** (0.000)
FRCV	–45.80 (0.996)	–31.74 (0.998)	–1.43** (0.015)	3.49*** (0.000)	–0.84*** (0.002)
SPCV	–11.99 (0.999)	–40.04 (0.994)	–28.47 (0.997)	20.83 (0.984)	1.68*** (0.000)
POCV	–47.56 (0.995)	–61.38 (0.992)	–41.08 (0.994)	–16.22 (0.884)	1.76*** (0.000)
GECV	–22.09 (0.998)	–22.79 (0.889)	–0.51 (0.353)	22.86 (0.989)	–1.09*** (0.000)
SOCV	–2.18 (0.999)	72.90 (0.750)	1.26** (0.022)	0.01 (0.998)	–1.20*** (0.000)
ENRE	–14.26 (0.998)	42.65 (0.840)	–0.88 (0.179)	30.05 (0.993)	–1.17** (0.011)
ENDU	–45.40 (0.997)	20.91 (0.921)	4.60*** (0.000)	1.36* (0.083)	–1.39*** (0.000)
FRIS	–28.02 (0.998)	46.74 (0.825)	–0.40 (0.454)	3.66*** (0.000)	–0.07 (0.839)
ENIS	12.65 (0.999)	43.24 (0.838)	–1.23** (0.010)	0.09 (0.916)	–0.43 (0.118)
Political factors (POLF)					
VOAC	1.81 (0.999)	2.25*** (0.000)	–0.01 (0.965)	0.71*** (0.004)	–0.15 (0.182)
POST	1.13 (0.999)	–2.79*** (0.000)	0.31*** (0.008)	0.35** (0.024)	–0.32*** (0.000)
REQU	–8.06 (0.999)	0.20 (0.690)	0.99*** (0.000)	1.79*** (0.000)	–0.67*** (0.000)
COCU	–0.23 (0.999)	–0.34 (0.553)	1.82*** (0.000)	–1.39*** (0.000)	0.95*** (0.000)

Note: ***p < 0.01 level (2-tailed), **p < 0.05 level (2-tailed), *p < 0.1 level (2-tailed).

Table 8 Series of binary logistic models on IFRS adoption for 162 countries over 1995–2014 (continued)

National antecedents	*The IFRS adoption (IFRSAC)*				
Cumulative binary logit models	*Model 1*	*Model 2*	*Model 3*	*Model 4*	*Ordered logit*
Independent variables	*Coef.*	*Coef.*	*Coef.*	*Coef.*	*Coef.*
Cultural factors (CULF)					
PWDS	2.93 (0.999)	5.24*** (0.000)	0.12** (0.020)	0.89*** (0.000)	–0.13*** (0.000)
INDV	–1.02 (0.999)	–7.01*** (0.000)	0.57*** (0.000)	0.76*** (0.000)	0.20*** (0.000)
UNAV	–0.25 (0.999)	–3.26*** (0.000)	0.20*** (0.000)	0.08 (0.411)	–0.01 (0.914)
MASC	1.44 (0.999)	0.43* (0.074)	0.24*** (0.000)	–0.65*** (0.000)	–0.12*** (0.000)
LTOR	–6.13 (0.999)	4.85*** (0.000)	–0.18*** (0.008)	0.58*** (0.000)	0.06 (0.128)
INDU	–2.99 (0.996)	–4.43*** (0.000)	–0.10** (0.026)	–0.37*** (0.000)	0.09*** (0.001)
Educational factors (EDUF)					
EDAT	–1.49 (0.998)	0.05 (0.154)	0.02** (0.037)	–0.11*** (0.000)	0.01*** (0.004)
LITR	–0.56 (0.996)	0.61*** (0.000)	0.04*** (0.000)	–0.04*** (0.000)	–0.01** (0.040)
QEDS	10.46 (0.997)	7.06*** (0.000)	1.17*** (0.000)	0.98*** (0.000)	–0.93*** (0.000)
Control variables					
Geographical region (GERI)					
EURO	–11.99 (0.999)	–13.08 (0.185)	–3.25*** (0.000)	35.38*** (0.000)	–0.06 (0.793)
NLSA	57.56 (0.996)	47.03*** (0.000)	3.50*** (0.000)	4.28*** (0.000)	–1.76*** (0.000)
CSAS	–6.51 (0.999)	–45.97*** (0.000)	2.38*** (0.000)	15.60 (0.997)	–1.99*** (0.000)
EASP	–38.51 (0.993)	–22.21 (0.952)	–1.90*** (0.000)	2.29*** (0.000)	0.71*** (0.000)
MENA	–19.54 (0.998)	–28.42*** (0.000)	–0.42 (0.559)	1.15* (0.095)	–0.85** (0.027)
Official language (OFLN)					
ENGL	–35.91 (0.992)	–10.81*** (0.000)	–2.15*** (0.000)	4.02*** (0.000)	–0.18 (0.334)
FRNL	–32.37 (0.996)	–18.01 (0.988)	–0.23 (0.703)	–3.25*** (0.000)	1.42*** (0.000)

Note: ***p < 0.01 level (2-tailed), **p < 0.05 level (2-tailed), *p < 0.1 level (2-tailed).

Table 8 Series of binary logistic models on IFRS adoption for 162 countries over 1995–2014 (continued)

National antecedents	*The IFRS adoption (IFRSAC)*				
Cumulative binary logit models	*Model 1*	*Model 2*	*Model 3*	*Model 4*	*Ordered logit*
Control variables	*Coef.*	*Coef.*	*Coef.*	*Coef.*	*Coef.*
SPNL	–23.94 (0.998)	–21.80 (0.999)	16.60 (0.997)	15.49 (0.988)	–1.65*** (0.000)
ARBL	–22.93 (0.997)	–12.13*** (0.000)	1.51** (0.040)	–1.66** (0.033)	–1.11*** (0.002)
GRML	–6.86 (0.999)	–23.01 (0.966)	–25.82 (0.991)	25.31 (0.992)	–0.48** (0.050)
RUSL	–14.92 (0.999)	–36.09*** (0.000)	–2.80*** (0.000)	4.02 (0.999)	0.81*** (0.003)
Colonial history (COHI)					
NEVC	21.81 (0.993)	–56.62 (0.946)	–1.34*** (0.000)	0.72 (0.223)	–0.45*** (0.008)
BRTC	3.84 (0.998)	–7.05*** (0.000)	0.09 (0.762)	4.81*** (0.000)	–1.20*** (0.000)
FRNC	–12.36 (0.998)	–20.22*** (0.000)	–2.78*** (0.000)	–0.67 (0.168)	1.69*** (0.000)
SPNC	–35.58 (0.998)	34.35 (0.995)	8.33*** (0.000)	9.59 (0.999)	–0.78* (0.058)
PORC	–3.01 (0.998)	7.51 (0.998)	19.32 (0.997)	18.99 (0.865)	–1.60*** (0.000)
DUTC	–8.78 (0.999)	–6.24 (0.997)	–25.50 (0.994)	–4.52*** (0.000)	1.06*** (0.001)
GRMC	14.83 (0.998)	20.83 (0.940)	2.35*** (0.000)	–1.11 (0.178)	–0.69** (0.026)
RUSC	–4.10 (0.999)	–21.03 (0.807)	0.31 (0.334)	8.55 (0.999)	–0.58*** (0.004)
Constant	–24.64 (0.997)	–77.35 (0.715)	–5.09*** (0.000)	–1.87 (0.207)	
Number of observations	3,240	3,240	3,240	3,240	3,240
LR chi^2	597.6*** (0.000)	2,446.4*** (0.000)	2,009.6*** (0.000)	2,066.2*** (0.000)	2,155.1*** (0.000)
McFadden's pseudo-R^2	0.999	0.857	0.506	0.665	0.259
McFadden (adjusted)	0.933	0.830	0.485	0.640	0.247
Cox and Snell R square	0.168	0.530	0.462	0.472	0.486
Nagelkerke R-square	0.950	0.905	0.654	0.765	0.526
Log likelihood	–2.90	–203.9	–981.1	–519.4	–3,079.8
Likelihood-ratio test					3,985.2***

Note: ***p < 0.01 level (2-tailed), **p < 0.05 level (2-tailed), *p < 0.1 level (2-tailed).

Table 8 reports that countries with a lower voice and accountability index are more likely to accelerate their IFRS adoption. This result supports what was stated by prior empirical studies (Alon and Dwyer, 2014). Table 8 also reports that countries with weak political stability are more prone to adopt accounting innovations such as IFRS during the initial stages. This finding is consistent with the prior studies conducted by previous research (Pricope, 2014). Table 8 indicates that countries with weak regulatory quality index are more prone to adopt accounting innovations, such as IFRS, during the initial stages. This result supports the previous empirical studies (Ramanna and Sletten, 2009; Kaya and Koch, 2015). Table 8 shows that countries with weak control of the corruption index are more likely to adopt accounting innovations such as IFRS during the initial stages. This finding supports the results reported by prior empirical literature (Houqe and Monem, 2016; Avram et al., 2015; Cai et al., 2014). This result implies that hypothesis H2 is partly accepted, which assumes that countries with strong worldwide governance indicators (i.e. (i.e., higher levels of voice and accountability, political stability, regulatory quality, and control of the corruption index levels) are more likely to accelerate their IFRS adoption. Moreover, this result supports diffusion theory, suggesting that counties with similar national political characteristics are more likely to adopt the same standards due to the significant impact of five features: relative advantage, compatibility, complexity, trialability, and observability (Rogers, 1983).

Regarding the impact of Hofstede's cultural values, Table 8 reports that countries with solid levels of power distance index are more likely to adopt the IFRS at the earliest stages. This finding is consistent with a study conducted by Haxhi and van Ees in 2010. Table 8 shows that countries with lower levels of individualism cultural index are more likely to hasten their IFRS adoption decision. This finding offers empirical support to previous research done by some scholars (Lasmin, 2012). Table 8 also reports that countries with weak levels of masculinity cultural index are more likely to adopt IFRS during the initial stages. This result means that hypothesis H3 is partly supported, which assumes that countries with Anglo-Saxon cultural values (i.e., higher levels of individualism alongside weak power distance and masculinity index levels) are more likely to accelerate their IFRS adoption.

However, Table 8 shows that countries with weak uncertainty avoidance cultural index are more likely to accelerate their IFRS adoption. This finding is consistent with some empirical studies (Yurekli, 2016; Felski, 2015; Fearnley and Gray, 2015; Lasmin, 2012). Table 8 also reports that countries with weak long-term orientation cultural index levels are more likely to hasten their IFRS adoption, implying that hypothesis H3 is partly supported. This result is consistent with the findings reported by some existing empirical studies (Tsui and Windsor, 2001; Ge and Thomas, 2008). Table 8 reports that countries with a weak indulgence cultural index are less likely to hasten their IFRS adoption decision. This result supports the findings reported by some current studies (Erkan and Agsakal, 2013; Borker, 2013a; Gierusz et al., 2014). These findings indicate that hypothesis H3 is partly accepted. This result also supports the assumption proposed by Hofstede's cultural theory, which assumes that Anglo-Saxon countries are more likely to accelerate their IFRS adoption since their cultural values are consistent with the accounting values required for IFRS adoption (Sasan et al., 2014; Borker, 2012b, 2014).

Table 8 shows that countries with higher educational attainment levels are more likely to hasten their IFRS adoption decision. This result is consistent with some previous IFRS studies (Lasmin, 2011a; Zehri and Chouaibi, 2013). Table 8 also reports that countries with higher literacy rates are more likely to adopt IFRS during the initial stages. This finding supports the results reported by some previous IFRS studies (Zehri and Chouaibi, 2013; Archambault and Archambault, 2009; Zeghal and Mhedhbi, 2006; Shima and Yang, 2012). However, Table 8 displays those countries with lower education system quality levels are more likely to accelerate their IFRS adoption. This result indicates that hypothesis H4 is partly supported, which assumes that countries with higher education quality (i.e., higher levels of educational attainment, literacy rates, and quality of the education system) are more likely to accelerate their IFRS adoption. Nevertheless, this finding is consistent with the theoretical predictions suggested by institutional theory, which assumes that countries with poor educational quality are more susceptible to adopting IFRS as a response to the normative pressure to acquire higher levels of accounting professionalism (Felski, 2015; Lasmin, 2011b; Turner, 1993; Pricope, 2015; Shima and Yang, 2012).

Table 8 reports that countries located in the north and south America and Caribbean and South Asia regions are more likely to adopt the IFRS during the initial stages. Countries located in are more likely to adopt the IFRS during the earlier times. However, Table 8 displays that those countries located in Europe, East Asia, the Pacific, and the MENA regions are more likely to adopt IFRS later. Moreover, Table 8 reports that countries where the Arabic language is the most widely spoken are more likely to hasten their IFRS adoption. In contrast, countries where the English language is a country's official language are more likely to adopt the IFRS during the late stages. However, countries where French and Russian languages are widely spoken, are more likely to delay their decision to adopt the IFRS. Table 8 reports that countries colonised by the Spanish and German empires are more likely to accelerate their IFRS adoption. In contrast, countries occupied by the British empire are more likely to adopt the IFRS during the late stages since they follow their former colonial. It also shows that countries colonised by the French and Dutch empires are more likely to delay their IFRS adoption.

5.2 Empirical results of the economic effects of IFRS adoption

Table 9 reports the multiple linear regression findings with cluster-robust standard errors in investigating IFRS adoption's economic effects for 162 nations from 1995–2014. Table 9 shows a significantly positive link between the IFRS adoption speed and the economic growth level. This result supports hypothesis H5, which proposes that countries with high economic development indicators (i.e., higher economic growth and FDI inflows) are more likely to accelerate their IFRS adoption speed. This finding aligns with the results stated by some previous IFRS studies (Stainbank, 2014; Larson, 1993; Zehri and Chouaibi, 2013). Table 9 also shows a significant positive association between IFRS adoption and FDI inflows. These results support the findings stated by some prior empirical IFRS literature (Rakesh and Shilpa, 2013; Okpala, 2012; Pricope, 2017; Gordon et al., 2012).

Table 9 Results of multiple linear regression on the effects of IFRS for 185 countries over 1995–2014

Dependent variables	*ECGR*	*FDI*	*GDP*	*EXPO*	*INTR*
Independent variables	*Coef.*	*Coef.*	*Coef.*	*Coef.*	*Coef.*
The IFRS adopters					
EXPRF	–0.51 (0.621)	–3.17 (0.276)	–0.15 (0.759)	–0.52 (0.510)	13.61** (0.035)
ERADF	0.88 (0.335)	–0.04 (0.985)	–0.01 (0.963)	–0.21 (0.656)	12.11*** (0.006)
ERMJF	1.57* (0.071)	2.23* (0.078)	–0.18 (0.577)	–0.48 (0.374)	10.10*** (0.007)
LTMJF	0.55 (0.440)	–0.07 (0.964)	0.41* (0.074)	0.53* (0.084)	1.06 (0.735)
The IFRS for listed firms					
NREQ	0.73 (0.333)	–0.33 (0.862)	0.57*** (0.007)	1.07*** (0.004)	–3.06 (0.333)
NPER	1.27 (0.201)	–0.11 (0.955)	0.43* (0.087)	0.72 (0.125)	–1.98 (0.589)
RFAL	1.21 (0.430)	–0.51 (0.825)	0.61** (0.047)	1.34** (0.012)	–13.42*** (0.009)
PFAL	1.14 (0.526)	–4.15 (0.138)	0.44 (0.235)	1.01 (0.121)	–4.20 (0.489)
RFBI	1.70 (0.164)	–3.69 (0.149)	0.93*** (0.000)	1.81*** (0.000)	–6.43 (0.333)
EXBI	4.92** (0.014)	3.63 (0.288)	0.15 (0.757)	0.44 (0.597)	–22.06*** (0.001)
The IFRS for unlisted firms					
NOTP	–0.12 (0.885)	–0.01 (0.994)	0.79*** (0.000)	1.24*** (0.002)	0.33 (0.913)
RADF	1.24 (0.220)	2.21 (0.326)	0.49** (0.017)	0.77** (0.030)	–2.57 (0.567)
RBIP	1.25 (0.207)	5.95*** (0.004)	0.11 (0.569)	0.18 (0.602)	–1.51 (0.752)
PADF	1.50 (0.149)	5.27*** (0.009)	0.27 (0.178)	0.55* (0.094)	–5.33 (0.251)
RFFI	1.12 (0.316)	1.66 (0.442)	0.62*** (0.002)	1.08*** (0.003)	1.45 (0.804)
RLPF	2.00 (0.111)	2.22 (0.433)	0.58** (0.012)	0.72* (0.063)	–2.10 (0.686)
PEBI	–0.58 (0.557)	1.22 (0.683)	0.46** (0.041)	0.59* (0.094)	2.64 (0.688)
The IFRS for foreign firms					
NOTR	–0.83 (0.223)	–0.32 (0.850)	0.53*** (0.002)	0.96*** (0.002)	2.91 (0.323)

Note: ***p < 0.01 level (2-tailed), **p < 0.05 level (2-tailed), *p < 0.1 level (2-tailed).

Table 9 Results of multiple linear regression on the effects of IFRS for 185 countries over 1995–2014 (continued)

Dependent variables	*ECGR*	*FDI*	*GDP*	*EXPO*	*INTR*
Independent variables	*Coef.*	*Coef.*	*Coef.*	*Coef.*	*Coef.*
RAFC	–1.86	1.11	0.24	0.36	9.70**
	(0.215)	(0.595)	(0.356)	(0.436)	(0.028)
PAFC	–1.56	0.87	0.71*	1.24*	3.27
	(0.300)	(0.725)	(0.074)	(0.077)	(0.449)
RSPO	–4.70***	–3.38	0.64**	1.14**	9.45*
	(0.001)	(0.140)	(0.021)	(0.023)	(0.053)
IFRS adoption for SMEs					
ASME	–1.79***	0.09	0.19***	0.30***	0.71
	(0.002)	(0.928)	(0.006)	(0.008)	(0.643)
Dummy 08-09					
D08-09	–2.90***	1.85***	0.13***	0.20***	0.02
	(0.000)	(0.000)	(0.000)	(0.000)	(0.983)
Control variables					
Geographical regions					
EURO	–3.11***	4.01*	0.23	0.65	–7.50**
	(0.001)	(0.094)	(0.366)	(0.143)	(0.045)
LNAM	–4.39***	–0.14	0.13	0.20	–2.90
	(0.000)	(0.952)	(0.686)	(0.698)	(0.450)
CSAS	–0.53	–2.97	0.21	0.29	3.20
	(0.584)	(0.262)	(0.455)	(0.510)	(0.473)
EASP	–1.68*	–0.38	0.30	0.88**	–3.56
	(0.063)	(0.862)	(0.196)	(0.029)	(0.209)
MENA	–0.64	–1.57	0.20	0.62	–9.02
	(0.406)	(0.568)	(0.414)	(0.210)	(0.242)
Official language					
ENGL	–2.17***	5.23**	–0.28	–0.35	3.52
	(0.008)	(0.013)	(0.227)	(0.343)	(0.203)
FRNL	–4.52***	–5.24**	0.33	0.49	8.50*
	(0.000)	(0.045)	(0.200)	(0.296)	(0.075)
SPNL	1.23	–0.47	0.39	0.52	1.60
	(0.329)	(0.841)	(0.107)	(0.327)	(0.782)
ARBL	–3.12***	–1.52	0.42	0.63	–1.15
	(0.001)	(0.597)	(0.153)	(0.277)	(0.896)
GRML	–1.91***	0.14	0.13	0.51	6.77**
	(0.005)	(0.962)	(0.704)	(0.423)	(0.026)
RUSL	–1.46*	–1.03	0.24	0.65*	–15.95**
	(0.068)	(0.739)	(0.204)	(0.053)	(0.022)
Colonial history					
NEVC	–1.05	1.89	1.01***	1.88***	–4.65*
	(0.163)	(0.387)	(0.000)	(0.000)	(0.089)

Note: ***p < 0.01 level (2-tailed), **p < 0.05 level (2-tailed), *p < 0.1 level (2-tailed).

Table 9 Results of multiple linear regression on the effects of IFRS for 185 countries over 1995–2014 (continued)

Dependent variables	*ECGR*	*FDI*	*GDP*	*EXPO*	*INTR*
Control variables	*Coef.*	*Coef.*	*Coef.*	*Coef.*	*Coef.*
BRTC	1.07	0.95	–0.12	0.02	–5.72
	(0.199)	(0.672)	(0.599)	(0.960)	(0.123)
FRNC	1.97**	6.45***	–0.42**	–0.50	3.33
	(0.026)	(0.003)	(0.042)	(0.203)	(0.550)
SPNC	–0.10	5.42*	–0.24	0.01	2.32
	(0.943)	(0.062)	(0.463)	(0.982)	(0.725)
PORC	0.67	5.05*	–0.36	–0.09	8.44
	(0.663)	(0.097)	(0.350)	(0.898)	(0.238)
DUTC	1.35**	2.93	–0.12	0.16	–5.26
	(0.027)	(0.662)	(0.792)	(0.844)	(0.157)
GRMC	0.28	–6.88**	–0.88***	–1.72***	–4.22
	(0.855)	(0.018)	(0.001)	(0.000)	(0.491)
RUSC	0.96	6.85***	–0.39**	–0.38	5.14
	(0.210)	(0.002)	(0.048)	(0.268)	(0.124)
Constant	6.34***	0.40	1.27***	–1.94	10.01*
	(0.000)	(0.878)	(0.000)	(0.001)	(0.086)
Observations	3,700	3,700	3,700	3,700	3,700
F value	9.76***	6.75***	18.6***	21.4***	6.80***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R-squared	0.144	0.161	0.589	0.600	0.193
Adjusted R-squared	0.134	0.152	0.584	0.595	0.183
Polynomials contrasts	7.78***	3.47***	6.92***	7.41***	7.36***
	(0.005)	(0.005)	(0.009)	(0.007)	(0.007)
Jarque-Bera LM test	0.244	0.231	0.110	0.666	0.111
	(0.885)	(0.891)	(0.947)	(0.717)	(0.946)
Levin-Lin-Chu test	–17.4***	–12.3***	–22.7***	–26.4***	–50.7***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Breitung test	–13.9***	–9.55***	–12.9	–19.6	–5.88***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Note: ***p < 0.01 level (2-tailed), **p < 0.05 level (2-tailed), *p < 0.1 level (2-tailed).

Table 9 shows that countries that adopted IFRS at late times tend to have higher GDP rates. This result is consistent with the expectation suggested by hypothesis H6, which supposes that countries with high trading economic indicators (i.e., higher levels of GDP, exports level, and interest rates) are more likely to hasten their IFRS adoption speed. This finding aligns with most of the previous IFRS literature, which reported a positive and significant association between the two variables (Gordon et al., 2012; Clements et al., 2010; Efobi, 2015; Ramanna and Sletten, 2014; Evgenidis et al., 2016). Table 9 also shows a significant positive link between export levels and the mandatory IFRS adoption. This finding supports hypothesis H6 and aligns with the results reported by some existing IFRS research (Ramanna and Sletten, 2009; Márquez-Ramos, 2011). Table 9 reports a

significant positive link between the interest rates and the IFRS adoption speed. This finding supports the results suggested by current IFRS studies (Chen et al., 2015; Bischof, 2009; Zhang, 2008). It also supports the institutional theory, which assumes that countries' response to the coercive pressure arises from their legal and political parties to gain more economic benefits and reduce information asymmetries (Neel, 2017; Soderstrom and Sun, 2007).

Table 9 indicates a significant positive between IFRS adoption speed and GDP rates, and export levels, especially in countries where IFRS adoption is not required for listed firms. It also shows that IFRS adoption is positively and significantly correlated with GDP but only for countries where IFRS is not permitted for listed companies. Similarly, Table 9 reports that IFRS is positively and significantly associated with GDP and exports but negatively with interest rates in countries requiring IFRS for all listed firms. Table 9 shows that IFRS adoption is positively and significantly associated with GDP and export levels in countries where IFRS is only needed for banks and insurance firms. It also reports a significant negative link between IFRS adoption and interest rates in countries requiring IFRS for all firms, excluding insurance companies and financial institutions. However, Table 9 found an insignificant link between most economic factors and IFRS adoption, especially in countries where IFRS is permitted for all listed firms.

Further, Table 9 indicates that IFRS adoption is positively and significantly associated with the GDP and export levels in countries where IFRS is not permitted for unlisted firms. It also shows that IFRS adoption is positively and significantly associated with FDI inflows in countries requiring IFRS for unlisted banks and insurance firms. Table 9 indicates that IFRS adoption is positively and significantly associated with FDI and exports in countries where IFRS is permitted for all unlisted firms. Surprisingly, the GDP and exports levels have increased considerably in countries where IFRS adoption status is required or allowed for all unlisted firms.

Additionally, Table 9 suggests a significant positive link between the speed of IFRS adoption and GDP rates and export levels in countries where IFRS is not required for foreign firms. It also shows a meaningful positive relationship between IFRS adoption and interest rates in countries with IFRS needed for all foreign firms. Table 9 reports that IFRS adoption is positively and significantly associated with the GDP and export levels in countries where IFRS is permitted for all foreign companies. Table 9 shows a significant positive link between IFRS adoption and GDP rates, export levels, and interest rates. Still, it was negatively and significantly correlated with economic growth and FDI in countries where IFRS is required for some foreign firms and permitted for others.

Table 9 shows that European countries that adopted IFRS have experienced lower economic growth and interest rates alongside higher FDI levels. While Latin and North American countries that adopted IFRS have experienced lower levels of economic growth. Moreover, it also shows that East and South Pacific countries that adopted IFRS have experienced lower economic growth levels and higher export levels. Regarding official language, Table 9 indicates that English-speaking countries that adopted IFRS are more likely to have higher FDI levels but lower levels of economic growth. It also shows that French-speaking countries that adopted IFRS are more likely to have higher interest rates but lower economic growth levels and FDI. Whereas Arabic-speaking countries that adopted IFRS are more likely to have lower levels of economic growth. Moreover, Table 9 reports that German-speaking countries that adopted IFRS are more likely to have higher interest rates but lower economic growth levels. Additionally, Russian-speaking

countries that adopted IFRS are more likely to have higher export levels but lower economic growth and interest rates.

Table 9 shows that never colonised countries that adopted IFRS are more likely to have higher GDP rates and export levels but lower interest rates. It also shows that countries occupied by the French empire and adopting IFRS tend to have higher economic growth and FDI but lower GDP levels. While countries colonised by the Spanish empire and adopted the IFRS tend to have higher FDI levels. It also indicates that countries occupied by the Portuguese Empire and adopting IFRS tend to have higher FDI levels. Countries colonised by the Dutch Empire and adopting IFRS tend to have higher economic growth levels. Besides, Table 9 indicates that countries occupied by the German Empire and adopting IFRS tend to have lower FDI, GDP, and exports. Finally, it shows that countries colonised by the Russian Empire and adopting IFRS tend to have higher FDI but lower GDP levels.

6 Conclusions

This study investigated the association between four key national factors (legal, political, cultural, and educational factors) on global IFRS adoption by applying the theoretical framework suggested by DOI theory. According to DOI theory, the first-time adoption of innovation relies on the characteristics of the adopting group that hider countries from adopting these innovations at certain times. This research indicates that English common law countries are more likely to accelerate their IFRS adoption than civil law countries that delay their IFRS adoption decisions. Moreover, this study found that Socialist civil law countries tend to hasten their IFRS adoption to enhance their national accounting standards, thus improving their economic performance. Additionally, this research indicates that countries with solid shareholders' rights and higher judicial efficiency and independence levels are more prone to speed up their IFRS adoption decisions.

Consistent with Gray's cultural theory's expectation, this study suggests that countries with an Anglo-Saxon culture are more likely to accelerate their IFRS adoption. The Anglo-Saxon culture comprises higher levels of individualism and indulgence index alongside lower power distance, uncertainty avoidance, masculinity index, and long-term orientation index since Anglo-Saxon culture is marked by empiricism and is more consistent with the following IFRS requirements: professionalism, confidence, flexibility, and transparency. While continental European culture is inclined towards theory, it aligns with the following accounting values: uniformity, conservatism, and secrecy (Gray, 1988; Neidermeyer et al., 2012; Borker, 2012b).

This study's findings suggest that countries with lower levels of worldwide governance indicators are more prone to adopt IFRS at the earliest time. These worldwide governance indicators comprise four main indexes: voice, accountability, political stability, regulatory quality, and corruption control. This finding lends support to the theoretical expectation suggested by institutional theory. Based on institutional theory, countries with lower quality governance indicators are more prone to adopt IFRS to respond to the coercive pressures that emerged by political parties to gain more legitimacy for their political systems (DiMaggio and Powell, 1983; Nurunnabi, 2015; Dufour et al., 2014).

Further, this research indicates that countries with higher educational attainment and literacy rates alongside lower education quality levels are more prone to hasten their IFRS adoption. These findings are in line with the theoretical predictions suggested by institutional theory. According to institutional theory, countries with lower levels of educational quality tend to adopt high-quality accounting standards as a reply to the normative pressures that emerged from their higher education institutions to acquire higher legitimacy (DiMaggio and Powell, 1983; Pricope, 2015; Judge et al., 2010).

Furthermore, this study reports that several economic indicators have significantly increased after the early IFRS adoption, namely economic growth, FDI inflows, GDP rates, and interest rates. However, this paper shows that the export levels of most EU countries have significantly improved after the mandatory adoption of IFRS in 2005. This result supports the institutional theory, which assumes that most countries embrace IFRS as a reaction to the coercive pressures from their legal and political institutions, thus improving their economic performance (DiMaggio and Powell, 1983; Scott, 2001; Zehri and Chouaibi, 2013). This study's results report that economic growth has significantly increased in countries where IFRS adoption is required for all listed firms regarding the alternative IFRS adoption status. However, this study indicates a significant positive association between FDI and IFRS adoption in countries requiring IFRS for unlisted financial institutions and insurance firms. This study reports a positive link between GDP and export levels in countries where IFRS adoption is required for all listed and unlisted companies. However, this study shows a significant positive association between interest rates and IFRS adoption in countries with IFRS needed for all foreign firms. This paper suggests that GDP rates and export levels have significantly enhanced in countries where SMEs adopt IFRS.

The findings of this study have several implications for theory, policymakers, practice, and academic research. First, this study offers theoretical implications since the DOI theory is suitable for explaining and understanding the global adoption of IFRS. This study serves as a basis for employing the DOI theory to explain the diffusion of accounting innovations. Second, this study provides implications for policymakers in the emerging economies that tend to adopt IFRS to strengthen their shareholders' protection rights to increase the economic benefits of adopting these high-quality accounting standards. Third, this study offers important implications for governments with weak control of corruption to enhance governance transparency by abolishing corruption. Control of corruption is only possible when governments cooperate with worldwide counterparts to promote their local government's transparency and accountability because free corruption is crucial for ensuring transparent governance. Hence, mandatory IFRS adoption can explicitly strengthen financial reports' quality, thus enhancing transparency, an essential element of abolishing corruption and allowing for more accessible cross-border investments. Fourth, this study yields academic implications in countries with lower education system levels to develop their current accounting curricula and textbooks by applying IFRS standards and gaining professionalism. Finally, this research offers implications for governments in emerging countries with weak economic development to promote their economic performance by adopting IFRS to enhance their financial reporting quality. More foreign investors will be attracted by adopting IFRS, thus improving their foreign direct investment inflows.

Although this study has some implications, it has several limitations that have been acknowledged. Specifically, this study has examined four national factors (legal, political, cultural, and education) on IFRS adoption and many other factors that might

impact IFRS adoption, such as application cost, translation, and stock market development. Moreover, this study has included the six cultural dimensions developed by Geert Hofstede as proxies for the cultural values of 162 countries, while the Hofstede website provides data for approximately 110 nations. Hence, the rest of the missing cultural values are replaced with their neighbours' cultural values, which may doubt the accuracy of the results about the impact of cultural values on IFRS. Additionally, due to data availability, this study has solely included 162 countries in the cause of the IFRS model and 185 countries in the IFRS model's effects from 1995–2014. This study has also employed the ordinal 1-5 coding scheme suggested by DOI theory based on their first-time adoption of IFRS. The results obtained by this research may change if future studies apply a new coding method, such as IFRS adoption with or without modification and voluntary and mandatory IFRS Adoption. Finally, this study has only included countries that adopted IFRS by 2014, which is the time of conducting this study. Future studies, therefore, might consist of the most recent data and include countries that adopted IFRS up to 2019, since many African countries have recently embraced IFRS during the period from 2014 to 2019 to examine the impact of IFRS adoption on their economic consequences.

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