The assurance providers' role in improving the independent assurance statement quality on sustainability reporting

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Abstract

Purpose – This study aims to investigate the effect of assurance provider types on the independent assurance statement quality of Asian companies' sustainability report (SR) and examine environmental risk's role as a moderating variable.

Design/methodology/approach – This study analyzes large Asian companies' stand-alone SR using moderated regression analysis to test hypotheses. Textual analysis is conducted to identify environmental risk disclosures.

Findings – This study shows that accounting assurance providers affect independent assurance statement quality in terms of compliance with assurance statement elements, while nonaccounting assurance providers can better accommodate environmental risk information required by the intended users.

Research limitations/implications – This study has several limitations. The research focuses on assurance statements and stand-alone SR of large companies in Asia; therefore, future research could examine similar analyses using integrated reports from Asia to investigate whether the results will differ. Additionally, this study does not divide assurance providers into Big-N and non-Big-N; thereby, it can be extended in future research.

Practical implications – Assurance providers need to consider environmental risk as a critical issue for the intended users to issue a high-quality independent assurance statement.

Social implications – Assurance statements issued by assurance providers increase public confidence in the reliability of the information contained in the SR. Therefore, regulators are expected to immediately set mandatory standards for sustainability assurance practices.

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Originality/value – This study proves that accounting assurance providers can improve assurance statement quality. The variable environmental risk is also proven to be a pure moderator in negatively interacting the effect of assurance provider types on independent assurance statement quality.

Keywords Assurance provider, Independent assurance statement, Environmental risk, Institutional logic theory

Paper type Research paper

1. Introduction

The presence of assurance providers (AssurPros) can increase the reliability and credibility of a company's sustainability report (SR) (Maroun, 2020; Maroun, 2019; García-Sánchez and Martínez-Ferrero, 2017; Cohen and Simnett, 2015; Gray, 2000) and reducing the level of information asymmetry for investors (Fuhrmann *et al.*, 2017). AssurPros issue an independent assurance statement (IAS) to express their opinion on the information quality of an SR for users (Hassan *et al.*, 2020; Cohen and Simnett, 2015; Simnett, 2012; Pflugrath *et al.*, 2011; Kolk and Perego, 2010). The IAS is an independent party's opinion issued after being engaged in assurance services (Seguí-Mas *et al.*, 2018; Perego and Kolk, 2012; Manetti and Toccafondi, 2012). The information disclosed in the IAS can mitigate the intended users' expectation gap and become an attempt for the AssurPros to manage the risk of his assignment (Manetti and Toccafondi, 2012). Therefore, a good quality IAS is critical for users, companies and AssurPros.

Previous studies have revealed that the IAS disclosed by AssurPro has heterogeneous content (Rossi and Tarquinio, 2017; Gürtürk and Hahn, 2016; Perego and Kolk, 2012; Manetti and Becatti, 2009; Deegan *et al.*, 2006a). This condition is caused by the lack of clarity of the standards used and the absence of rules in the sustainability assurance practices (Gürtürk and Hahn, 2016; Perego and Kolk, 2012). The classification of AssurPro into accounting and nonaccounting AssurPros adds to the variety of sustainability assurance approaches that affect IAS content disclosure preferences (Farooq and de Villiers, 2019; Manetti and Toccafondi, 2012; Manetti and Becatti, 2009; O'Dwyer and Owen, 2005). According to Deegan *et al.* (2006b), this condition makes IAS contains inherent ambiguity. Variations in the disclosure of IAS still occur today and have resulted in a debate about which AssurPro type can issue a better IAS quality.

The debate regarding AssurPro type and IAS quality can be investigated further by analyzing AssurPros motivation to assess environmental risk (ER) disclosure (ERD) in SR. AssurPro should pay attention to environmental issues because they have become a growing concern shared by environmental groups, legislators, customers, local communities and public authorities for more than 30 years (Albertini, 2014). Intended users realize that environmental impacts, such as climate change, affect companies' operational and financial conditions (Tang and Luo, 2014; Luo and Tang, 2016a). At the same time, this has prompted companies to disclose their concerns about managing ER (Helfaya and Whittington, 2019; Amor-Esteban *et al.*, 2019; Albertini, 2014). Therefore, ER is an essential factor that needs to be considered in choosing which AssurPros type can issue high-quality IAS.

This study uses the institutional logic theory (ILT) to facilitate AssurPro's participation in issuing high-quality IAS by considering AssurPro's preferences and user needs. Silva and Figueiredo (2017) postulate that ILT can explain how sustainable practices are socially constructed and shared among actors. Professional service providers' strategy selection and decision-making styles to meet the broader needs of other parties can be analyzed using the ILT (Duff *et al.*, 2020; Mccoll-kennedy *et al.*, 2015). Based on this explanation, this study investigates the effect of AssurPro types on IAS quality and specifically examines ER's role as a moderating variable.

This study contributes to the assurance sustainability literature in several ways. First, it reveals the preferences of accounting and nonaccounting AssurPros in issuing quality IAS. Second, this study explicitly provides a new perspective on ERs when interacting with the effect of AssurPros on IAS quality. The variety of IAS disclosure by the AssurPros type diminishes credibility, transparency and benefits and causes IAS ambiguity for users (Gürtürk and Hahn, 2016; Deegan *et al.*, 2006b). This study fills this gap by presenting ER to determine which AssurPro type can issue high-quality IAS. In this case, ER becomes an important focus for AssurPro to be further assessed and informed in IAS. Third, this study fills the gap by exploring Asia to examine the above variables. As is known, studies that tested the AssurPro types on IAS quality have been carried out in several countries, like Europe, (Hummel *et al.*, 2019; Gürtürk and Hahn, 2016; Zorio *et al.*, 2013) and a combination of several countries from different continents (Martínez-Ferrero and García-Sánchez, 2018; Achmad *et al.*, 2017; Perego and Kolk, 2012). However, the focus on Asia is important, as the impact of companies' activities on the environment has reached an alarming level. For example, operational activities in various industrial sectors in Beijing and New Delhi account for the largest air pollution in China and India, respectively (Hanaoka and Masui, 2020). In addition, industrial activities that cause pollution, ecosystem destruction and illegal logging also occur in several other Asian countries, such as Pakistan, Vietnam and Indonesia (Ahmad *et al.*, 2020; Pham *et al.*, 2020; Eriandani *et al.*, 2019). Therefore, this study's results will contribute to the determination of quality IAS content.

This study proves that accounting AssurPros, who carry out assurance engagements for large-size companies in Asia that publish stand-alone SR, can issue better IAS quality than nonaccounting AssurPros. This study's results are in line with Martínez-Ferrero and García-Sánchez (2018), Zorio *et al.* (2013) and Perego and Kolk (2012). ER is also proven to act as a pure moderating variable in interacting with the effect of accounting AssurPro on IAS quality. More specifically, the nonaccounting AssurPros proved to be better at accommodating the intended users' needs than their counterparts in disclosing ER information in IAS. The test results are supported by robustness tests that add assurance report coverage and International Standards on Assurance Engagements 3000 (ISAE 3000) variables.

This study is organized as follows. The next section describes the relevant literature, theoretical framework, hypothesis development and research design. Following this, descriptive statistics and an analysis of the results are provided. The final section provides conclusions, implications and recommendations for future research.

2. Literature review and hypothesis development

2.1 Assurance provider, assurance statement and environmental risk

AssurPros are classified into two broad categories: AssurPros with an accounting background (identified by the public accounting firm's name) and a nonaccounting background (such as consultants, nonprofit organizations and certification bodies) (Hummel *et al.*, 2019; Farooq and de Villiers, 2019; Ferrero, 2018; Junior *et al.*, 2014). Previous studies have revealed that accounting AssurPros prefer ISAE 3000, while nonaccounting AssurPros prefer the AccountAbility 1000 Assurance Standard (AA1000AS) (Fuhrmann *et al.*, 2017; Cohen and Simnett, 2015; Andon *et al.*, 2015; Simnett, 2012; Mock *et al.*, 2007). To strengthen his function as a sustainability agent, AssurPro uses his logic to disclose quality IAS.

Each AssurPro type issues different IAS content disclosures. Previous studies have shown that AssurPro types affect IAS content (Hummel *et al.*, 2019; Rossi and Tarquinio, 2017; Zorio *et al.*, 2013; Perego and Kolk, 2012). According to Hummel *et al.* (2019), a better IAS quality has assurance statement breadth (ASB) based on a minimum list of assurance

statement elements that enables users to better understand the assurance process and its results. Perego and Kolk (2012) and O'Dwyer and Owen (2005) also use the minimum requirements to issue a high-quality IAS. Basically, the IAS elements are categorized based on the assurance standard applied, which includes information on general matters, AssurPro background and areas of responsibility, the assurance process and the conclusion (Hummel *et al.*, 2019; Zorio *et al.*, 2013; Perego and Kolk, 2012; Deegan *et al.*, 2006a; Deegan *et al.*, 2006b; O'Dwyer and Owen, 2005).

This study complements the IAS quality definition revealed by Hummel *et al.* (2019), Perego and Kolk (2012) and O'Dwyer and Owen (2005). Quality should be measured based on the adequacy of disclosure elements and the intended users' primary concern in the global scope, namely, ER. Decision-makers seriously consider climate change that is proven to disrupt a company's operational activities and financial viability (Tang and Luo, 2014; Luo and Tang, 2016a). For instance, debt providers consider corporate ER for lending decisions (Jung *et al.*, 2018). If IAS is the opinion given to assess the reliability and credibility of SR (Maroun, 2020; Maroun, 2019; García-Sánchez and Martínez-Ferrero, 2017; Gürtürk and Hahn, 2016; Cohen and Simnett, 2015; Gray, 2000), an ER assessment should be done and disclosed explicitly, as in special environmental audits (Datt *et al.*, 2019; Huggins *et al.*, 2011). Wong and Millington (2014) assert that IAS reflects the design of the assurance process. Therefore, AssurPro, who is responsive to environmental issues, should assess and disclose them in his IAS.

2.2 Theoretical framework

IAS is not legally standardized (Fuhrmann *et al.*, 2017; Hodge *et al.*, 2009), thus allowing AssurPros to choose a disclosure model that is believed to be high quality, informative and valuable for the intended users. To analyze AssurPros' preferences, this study adopts the institutional logic approach of Friedland and Alford (1991), which emphasizes the occurrence of competition to achieve change, namely, by providing a catalyst. Accounting and nonaccounting AssurPros compete to issue high-quality IAS for the intended users' benefits.

Based on the ILT, the logic formed from their professional environment determines AssurPros' preferences in disclosing IAS. Previous studies have revealed that accounting AssurPros apply a conservative, cautious and limited approach in carrying out sustainability assurance (Seguí-Mas *et al.*, 2018; Paulo Perego, 2009; Deegan *et al.*, 2006b; O'Dwyer and Owen, 2005). The institutional logic of accountants is influenced by state regulation (Thornton *et al.*, 2005); therefore, the absence of mandatory guidelines makes them not confident enough to draw clear and precise conclusions (Paulo Perego, 2009; O'Dwyer and Owen, 2005). Accounting AssurPro tends to focus on the consistency of client information and gathering evidence (O'Dwyer and Owen, 2005). On the other hand, nonaccounting AssurPro, a professional group with no ties to specific professional associations, takes an evaluative approach and provides clients with more information about systems, reporting and performance weaknesses (O'Dwyer and Owen, 2005). Therefore, nonaccounting AssurPro is more open to high-level assurance and more confident when expressing opinions and recommendations in his IAS (Perego, 2009).

Tyson and Adams (2018) reveal that ILT can be used in sustainability assurance research. Herremans and Nazari (2016) relate the inclusion of sustainability assurance as part of the company's control system characteristic influenced by its institutional logics in dealing with external pressure, managerial motivations and stakeholder relationships. Based on this explanation, studies on sustainability reporting and assurance using ILT are still limited to the perspective of the company as the report writer and not the assurance profession. Meanwhile, Duff *et al.* (2020) only investigate how professional accountancy

associations (including auditors) profile the quality of accounting education. Therefore, this research fills the gap by adopting ILT to answer how AssurPros choose the quality IAS type for the intended users.

2.3 Assurance provider and assurance statement quality

Farooq and de Villiers (2019) postulate that accounting and nonaccounting AssurPros compete against each other in the sustainability assurance market. The preferences for selecting different AssurPro types are evidenced by Ferrero (2018), Ballesteros *et al.* (2017), Pflugrath *et al.* (2011) and Hodge *et al.* (2009), which posit that accounting AssurPros are superior to nonaccounting AssurPros, but Wong and Millington (2014) state otherwise. The selection considerations are inseparable from the IAS issued by AssurPros. Based on the ILT, each AssurPro is free to choose an approach that directs him to carry out assurance engagements and issue quality IAS.

IAS quality is previously analyzed based on a minimum list of assurance statement elements (Hummel *et al.*, 2019; Perego and Kolk, 2012; O'Dwyer and Owen, 2005). The results of previous studies have been inconsistent, where Hummel *et al.* (2019), Rossi and Tarquinio (2017), Achmad *et al.* (2017) and Gürtürk and Hahn (2016) prove that nonaccounting AssurPros issue a higher IAS quality, while Martínez-Ferrero and García-Sánchez (2018), Zorio *et al.* (2013), Perego and Kolk (2012), Hodge *et al.* (2009) reveal that accounting AssurPros issue a higher IAS quality.

Nonaccounting AssurPros disclose a higher IAS quality concerning opinions and recommendations (Rossi and Tarquinio, 2017; Perego and Kolk, 2012; Manetti and Toccafondi, 2012; Manetti and Becatti, 2009; Perego, 2009). This is in line with (Huggins *et al.*, 2011) that reveal nonaccounting AssurPros have specific technical expertise and knowledge. Notwithstanding, accounting AssurPros provide assurance services with a high level of quality control and strict assurance procedures (Huggins *et al.*, 2011; Perego, 2009). Accounting AssurPros, through their experience in financial audits, are strict with standards and stages of assurance procedures (Farooq and de Villiers, 2019) and accurate in reporting opinions for corporate SR (Martínez-Ferrero and García-Sánchez, 2018). In addition, the disclosure of recommendations on financial audit practices is generally reported separately in the management letter; thus, this practice is also undertaken in sustainability assurance. Hence, the hypothesis can be stated as follows:

H1. Accounting AssurPros have an effect on IAS quality.

2.4 Assurance provider, environmental risk and assurance statement quality

Based on the ILT, the logic formed from previous practices can direct AssurPro's focus to a critical condition that interacts with AssurPro types to produce quality IAS. A more important point in selecting assurance services is the competence and experience of the AssurPros (Achmad *et al.*, 2017). AssurPros with high credibility can disclose information clearly and comprehensively, especially if the company has a high environmental risk (Truant *et al.*, 2017). Accounting AssurPros have long experience in the assurance field (Farooq and de Villiers, 2019; Martínez-Ferrero and García-Sánchez, 2018), while nonaccounting AssurPros have sufficient knowledge to undertake sustainability assurance engagement (Huggins *et al.*, 2011). These conditions make nonaccounting AssurPros tend to provide services with a high assurance level and take a more evaluative approach, while accounting AssurPros tend to apply a conservative, cautious and limited approach (Perego and Kolk, 2012; O'Dwyer and Owen, 2005). However, Canning *et al.* (2019) assert that

nonaccounting AssurPros still rationalize their intuition using assumptions in the financial statement audit methodology. Accounting AssurPros are used to undertaking risk analysis because they apply a risk-based audit approach (Arens *et al.*, 2017; Hayes *et al.*, 2014; Collings, 2011).

This condition creates ambiguity regarding which AssurPro type affects IAS quality. As explained earlier, inconsistencies also occur when IAS quality is determined based on the minimum list of assurance statement elements. Although it is viable to determine IAS quality according to this method, ER, which has become a global issue, can be used as a perspective to determine IAS quality. The availability of adequate environmental information in reporting to stakeholders is the focal point for the company (Luo and Tang, 2016b) because it also further contributes to the company through easier access to funding for creditors (Lemma *et al.*, 2022; Jung *et al.*, 2018), corporate environmental performance improvement (Acar and Temiz, 2020), and mitigation of information asymmetry (Hammami and Hendijani Zadeh, 2020).

This study analyzes whether the ER has a role as a moderating variable; thereby, the hypothesis proposed is:

H2. Companies with a high level of environmental risk can interact with the effect of accounting AssurPros on IAS quality.

3. Research design

3.1 Measurement of variables

3.1.1 Independent assurance statement. ASB proposed by Hummel *et al.* (2019) was used to measure IAS quality. The ASB measured IAS quality using the breadth of information about general information, AssurPro information, the assurance process and conclusions. The scoring classification by Hummel *et al.* (2019) was chosen because it includes assessment elements synthesized from various relevant standards, such as ISAE 3000, AA1000AS and GRI.

Scoring for some elements has been modified from the original study, and the elements were marked with an asterisk (asb6a, asb6b, asb7 and asb8). First, it is important to separate AssurPro's and the firm's areas of responsibility because these services are provided by an independent party (Perego and Kolk, 2012; Deegan *et al.*, 2006a; Deegan *et al.*, 2006b; O'Dwyer and Owen, 2005). Second, the assurance process' scope and method scores were divided into three levels: 0, 0.5 and 1. These considerations were made to identify the assurance process that also contemplates the importance of Asia's environmental issues. Table 1 presents the measurement of IAS quality using ASB, with score ranges between 0 and 14. The unweighted scoring system was assigned in the study because previous studies posited that using or not using weighting will produce similar results (Hassan *et al.*, 2020; Hodge *et al.*, 2009).

Testing the reliability of the coding process was carried out to mitigate subjectivity. Two research assistants initially performed the coding process, then the researchers recoded and applied the K-alpha test (Krippendorff, 2004) to check coding reliability. The K-alpha score was 0.92, which is above the recommended score of 0.80 (Krippendorff, 2004). The research team has done clarification about coding.

3.1.2 Assurance providers. AssurPro is a dummy variable, which equals 1 for accounting AssurPro and 0 for others (Hummel *et al.*, 2019; Perego and Kolk, 2012). AssurPros are classified into two broad categories: AssurPros with an accounting background (identified by the public accounting firm's name) (Hassan, 2019; Ferrero, 2018; O'Dwyer and Owen, 2005)

Code	Item	Measurement
General information		
asb1	Addressees	Whether the IAS is addressed toward all stakeholders (1) or not (0)
abs2	Assurance standard	Whether at least one assurance standard is mentioned as the framework for the assurance (1) or not (0)
abs3	Miscellaneous information	Whether miscellaneous information, such as AssurPro's firm name, AssurPro's representative, date and place, is completely mentioned in the IAS (1) or not (0)
AssurPro information		
abs4	AssurPro competence	Whether the IAS contains information on the AssurPro's competence (1) or not (0)
abs5	AssurPro independence	Whether the IAS contains information on the AssurPro's independence (1) or not (0)
asb6A*	Area of responsibility	Whether the IAS contains information on the AssurPro's area of responsibility (1) or not (0)
asb6B*	Area of responsibility	Whether the IAS contains information on the firm's area of responsibility (1) or not (0)
Assurance process		
asb7*	Scope	Whether the IAS contains information on the scope of the assurance process. If it contains specific information about ER = 1 If it only contains general information = 0.5 If none = 0
asb8*	Method	Whether the IAS contains information on the method and procedures of the assurance If the methods and procedures of the assurance performed include identifying ER = 1 If the methods and procedures of the assurance performed are general = 0.5 If none = 0
asb9	Level	Whether the IAS specifies the level of the assurance (1) or not (0)
Conclusions		
asb10	Veracity	Whether the IAS indicates the conclusion/opinion of the AssurPro (1) or not (0)
asb11	Materiality	Whether the IAS contains information on the materiality of the report (1) or not (0)
abs12	Limitations	Whether the IAS contains limitations concerning the SR (1) or not (0)
abs13	Recommendations	Whether the IAS contains recommendations (1) or not (0)
Total 0–14		

Note: This table shows the classification of IAS quality proxied by ASB (Hummel *et al.*, 2019)

Table 1.
Measurement of IAS quality using ASB

and a nonaccounting background (such as consultants, nonprofit organizations and certification bodies) (Hummel *et al.*, 2019; Farooq and de Villiers, 2019; Junior *et al.*, 2014).

3.1.3 Environmental risk. ERD is a proxy used to identify ER. This variable was measured using textual analysis that combines terms in the research of Elshandidy and Shrives (2016), de Aguiar and Bebbington (2014), Dobler *et al.* (2014) and Hanaoka and Masui (2020). Initially, textual analysis was conducted to identify words or phrases relevant to environmental risks. Afterward, the measurement was done by counting the number of words or phrases generated from textual analysis. Finally, the quantity obtained was converted into a natural logarithm.

Intellectual identification was carried out in the following words:

Against, catastrophe (catastrophic), challenge (challenges), decline (declined), decrease (decreased), fail (failure), less, loss (losses), low*, risk*, shortage, threat, unable, uncertain (uncertainty, uncertainties), reverse (reversed), penalty*, sanction, litigation, illegal, chance (chances), diversify*, gain (gains), increase (increased), peak (peaked), legal, "natural disaster", season (seasonality), weather, emission, greenhouse, gas, climate, global, warming, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), sulphur hexafluoride (SF_6), water vapor (H_2O), ozone (O_3), carbon monoxide (CO), volatile organic compounds (VOC), sulphur dioxide (SO_2), nitrogen oxide (NOX = NO + N_2O), hydrogen (H_2), ammonia (NH_3), chlorofluorocarbon (CFC), particulate (PM2.5, PM10), hydrochlorofluorocarbon (HCFC), aerosol, clouds.

3.1.4 Control variables. This study follows Hummel *et al.* (2019), Martínez-Ferrero and García-Sánchez (2018) and Zorio *et al.* (2013) by controlling for client characteristics, AssurPro characteristics and fixed effects, as follows:

- Firm size or Size (measured as the natural logarithm of total assets at the end of the year);
- Return on assets or ROA (calculated by dividing net income by total assets);
- Return on equity or ROE (calculated by dividing net income by total equity);
- Debt to asset ratio or DAR (calculated by dividing total debt by total equity);
- Evidence (measured by adding up the type of evidence disclosed in a company's IAS by each AssurPro with a total score range is 0–5. This study uses five types of evidence which include a) inspection, b) inquiry, c) on-site visits, d) searches on the public media and e) the data analysis process);
- Industry effect (is a categorical variable that refers to the high-profile industrial classification of Petera *et al.* (2019), which equals 1 if the firm is in a high-profile industry and 0 for others);
- Fiscal year effect (is a categorical variable, which equals 1 if the firm's audited financial statement as of December 31, 2017, and 0 for others); and
- Finally, this study examines the country of origin, divided into East Asia, South Asia, Southeast Asia and West Asia (no sample data for Central Asia).

3.2 Regression models

This study used moderated regression analyses (MRA) developed by Sharma *et al.* (1981), as follows:

$$\begin{aligned} \mathrm{ASB_i} = {} & \alpha_1 + \beta_1 AssPro_i + \beta_2 Size_i + \beta_3 ROA_i + \beta_4 ROE_i + \beta_5 DAR_i \\ & + \beta_6 Evidence_i + \beta_7 Industry\ \ Effect_i + \beta_8 \mathrm{FiscalYearEffect}_i \\ & + \beta_{9-11} \mathrm{CountryTerritoryEffect}_i + \varepsilon_i \end{aligned} \tag{1}$$

$$\begin{aligned} \mathrm{ASB_i} = {} & \alpha_1 + \beta_1 AssPro_i + \beta_2 ERD_i + \beta_3 Size_i + \beta_4 ROA_i + \beta_5 ROE_i \\ & + \beta_6 DAR_i + \beta_7 Evidence_i + \beta_8 Industry\ \ Effect_i + \beta_9 \mathrm{FiscalYearEffect}_i \\ & + \beta_{10-12} \mathrm{CountryTerritoryEffect}_i + \varepsilon_i \end{aligned} \tag{2}$$

$$\begin{aligned} \mathrm{ASB_i} = \alpha_1 + \ & \beta_1 AssPro_i + \beta_2 ERD_i + \beta_3 AssPro{*}ERD_i + \beta_4 Size_i + \beta_5 ROA_i \\ & + \beta_6 ROE_i + \beta_7 DAR_i + \beta_8 Evidence_i + \beta_9 Industry\ \ Effect_i \\ & + \beta_{10}\mathrm{FiscalYearEffect}_i + \ \beta_{11-13}\mathrm{CountryTerritoryEffect}_i + \varepsilon_i \end{aligned} \quad (3)$$

The answer to *H1* can be seen in the sign and magnitude of the coefficient β_1 and the significance level in equation (1). Furthermore, the results were adjusted for consistency with the results of equations (2) and (3). In *H2*, ERD's role as a moderator variable was identified using the Sharma *et al.* (1981) framework. The moderator variable's identification was made by looking at the significance level of the variable ERD in equation (2) and the variable AssurPro*ERD in equation (3).

3.3 Sample and data description

This study used a sample of stand-alone SR of all Asian companies that fall into the large-size company category listed in the GRI-sustainability disclosure database. The stand-alone SR data collection, annual reports or audited financial reports in this study were conducted mixed, namely, hand-collected and through OSIRIS. The final samples obtained during 2017 were from 96 large-size companies. The sample year selection was based on a survey by KPMG (2017) that affirmed the growth in accountability reporting in 2017 in the Asia Pacific region was remarkable, and several countries in Asia had the highest reporting rates in the world. Based on these conditions, IAS quality undoubtedly becomes an imperative issue that needs attention along with SR's growth. This present study undertook a scoring or indexing of the disclosure for a single-year sample, as conducted by Hassan *et al.* (2020) and Hummel *et al.* (2019). The sample composition is presented in Table 2.

Table 2 exhibits 15 Asian countries that issue stand-alone SRs equipped with IAS. The sample composition includes 23 industry groups, and the financial services industry issues the most reports.

4. Empirical results and discussions

4.1 Descriptive statistics and univariate analyses

Table 3 consists of panel A, which presents descriptive statistics for the ASB elements, and panels B and C, which present descriptive statistics for the regression variables. In panel A, most of the elements have high mean values above 0.70, while addressees (0.12) and recommendations (0.30) have low mean values. Concerning the area of responsibility's mean values, the separation of the asb6 element is appropriate because only the area of responsibility of AssurPro is significantly different. Perego and Kolk (2012), Deegan *et al.* (2006a), Deegan *et al.* (2006b) and O'Dwyer and Owen (2005) scrutinize that there are different responsibilities between companies and AssurPros that carry out the assignment. Meanwhile, low mean values of addressees and recommendations are in line with Hummel *et al.* (2019).

Panels B and C of Table 3 present descriptive statistics for continuous and categorical variables. The most notable point is the high mean value of ASB, which is 10.3906 out of 14 standardized points. The mean ERD value is 5.31, with a maximum value of 7. Meanwhile, nonaccounting AssurPro shows twice (66.7%) as much as accounting AssurPro (33.3%).

Table 4 presents the Pearson correlation between variables. AssurPro, ERD and AssurPro*ERD show a positive correlation with ASB, but only ERD does not correlate significantly with ASB. Meanwhile, the control variables show varied correlation directions.

Territory		Country	*n*		Industry	*n*
East Asia	1	Hong Kong	13	1	Agriculture	1
	2	Japan	6	2	Automotive	8
	3	Korea, Republic of	4	3	Aviation	3
	4	Mainland China	2	4	Chemicals	3
	5	Taiwan	1	5	Computers	1
South Asia	1	India	22	6	Conglomerates	7
	2	Pakistan	2	7	Construction	3
	3	Sri Lanka	1	8	Construction materials	4
Southeast Asia	1	Indonesia	11	9	Consumer durables	2
	2	Philippines	2	10	Energy	8
	3	Malaysia	6	11	Energy utilities	5
	4	Singapore	2	12	Financial services	17
	5	Thailand	18	13	Food and beverage products	5
West Asia	1	Israel	1	14	Health products	1
	2	Turkey	5	15	Media	1
				16	Metal products	1
				17	Mining	6
				18	Railroad	1
				19	Real estate	6
				20	Technology hardware	2
				21	Telecommunications	8
				22	Tourism/leisure	1
				23	Other	2
Total			96	Total		96

Table 2.
Sample composition

Table 5 presents the results of a univariate analysis test using the *t*-test to identify significant differences in all IAS quality elements based on the means of the accounting and nonaccounting AssurPro groups.

The results in Table 5 reveal significant differences in the nine elements of IAS quality in the two groups: addressees, provider competence, provider independence, responsibility area of AssurPro, scope, level, materiality, limitations and recommendations. In this study, the IAS elements are primarily disclosed by accounting AssurPro, supporting *H1*. Only addressees and recommendations are disclosed more in nonaccounting AssurPro's IAS.

4.2 Moderated regression analyses

Table 6 presents the main test results for *H1* and *H2* using the MRA model. Based on equation (1) that is supported by equations (2) and (3), the results show the positive effect between accounting AssurPro and IAS quality; thereby, *H1* is supported. This study's results are consistent with Martínez-Ferrero and García-Sánchez (2018), Zorio *et al.* (2013), Perego and Kolk (2012) and Hodge *et al.* (2009). It is firmly proven that accounting AssurPros, who undertake assurance engagement on stand-alone SR companies in Asia, can issue better IAS quality than nonaccounting AssurPros. These results are also supported by Table 5, which exhibits that the IAS elements are mostly disclosed by accounting AssurPros.

ERD is a moderator variable tested on *H2*. The effect of the variable ERD on equation (2) is not significant, while the effect of the variable AssurPro*ERD in equation (3) is significant at the 5% level. These results prove that ERD is a pure moderator; thereby, *H2* is supported. This study's results show that ERD interacts with the effect of accounting AssurPro on ASB, meaning that companies with a high ER level can interact with the effect of accounting

		Mean	SD	Min.	Max.
Panel A: ASB elements (n = 96)					
asb1	Addressees	0.1146	0.32019	0	1
asb2	Assurance standard	0.9896	0.10206	0	1
asb3	Miscellaneous information	1.0000	0.00000	1	1
asb4	AssurPro competence	0.7604	0.42907	0	1
asb5	AssurPro independence	0.9062	0.29301	0	1
asb6A	Responsibility area of AssurPro	0.6354	0.48384	0	1
asb6B	Responsibility area of management	0.9149	0.28054	0	1
asb7	Scope	0.7656	0.28977	0	1
asb8	Methods	0.6250	0.25131	0	1
asb9	Level	0.8958	0.30708	0	1
asb10	Veracity	0.9896	0.10206	0	1
asb11	Materiality	0.9375	0.24333	0	1
asb12	Limitations	0.5729	0.49725	0	1
asb13	Recommendations	0.3021	0.46157	0	1
		Mean	SD	Min.	Max.
Panel B: continuous variables (n = 96)					
	ASB	10.39	1.792	3	13
	ERD	5.31	0.701	3	7
	AssurPro*ERD	1.77	2.561	0	7
	Size	22.89	1.602	19	26
	ROA	0.05	0.070	–0.42	0.24
	ROE	0.11	0.313	–2.40	0.85
	DAR	0.58	0.242	0.09	1.09
	Evidence	3.41	0.705	1	5
		1	%	0	%
Panel C: categorical variables (n = 96)					
	AssurPro	32	33.3	64	66.7
	Industry effect	66	68.8	30	31.3
	Fiscal year effect	72	75.0	24	25.0
	East Asia	26	27.1	70	72.9
	South Asia	25	26.0	71	74.0
	Southeast Asia	39	40.6	57	59.4
	West Asia	6	6.3	90	93.8

Table 3.
Descriptive statistics

	ASB	AssurPro	ERD	Size	ROA	ROE	DAR	Evidence
ASB	1							
AssurPro	0.353**	1						
ERD	0.099	0.000	1					
Size	–0.125	–0.046	0.192*	1				
ROA	0.036	0.123	0.163	0.004	1			
ROE	0.051	0.061	–0.075	0.043	0.437**	1		
DAR	–0.139	–0.086	–0.092	0.363**	–0.373**	–0.006	1	
Evidence	0.302**	–0.032	0.188*	–0.014	0.026	0.023	–0.173*	1

Notes: This table presents correlations between variables using Pearson correlations. * and ** indicate significance at the 5 and 1% levels

Table 4.
Pearson correlation matrix

Table 5.
Results of the *t*-test for the ASB elements based on AssurPro types

		Accounting AssurPro (n = 32)		Nonaccounting AssurPro (n = 64)		
		Mean	SD	Mean	SD	*t* value
asb1	Addressees	0.0000	0.00000	0.1719	0.38025	–3.616***
asb2	Assurance standard	1.0000	0.00000	0.9844	0.12500	0.705
asb3	Miscellaneous information	1.0000	0.00000	1.0000	0.00000	
asb4	AssurPro competence	0.9063	0.29614	0.6875	0.46718	2.789**
asb5	AssurPro independence	1.0000	0.00000	0.8594	0.35038	3.211**
asb6A	Responsibility area of AssurPro	0.9375	0.24593	0.4844	0.50371	5.922***
asb6B	Responsibility area of management	0.9688	0.17678	0.8871	0.31906	1.596
asb7	Scope	0.8594	0.26134	0.7188	0.29378	2.383**
asb8	Methods	0.6719	0.27266	0.6016	0.23871	1.240
asb9	Level	0.9688	0.17678	0.8594	0.35038	2.033**
asb10	Veracity	0.9688	0.17678	1.0000	0.00000	–1.000
asb11	Materiality	1.0000	0.00000	0.9063	0.29378	2.553**
asb12	Limitations	0.8125	0.39656	0.4531	0.50173	3.821***
asb13	Recommendations	0.1875	0.39656	0.3594	0.48361	–1.857*

Note: *, ** and *** indicate significance at the 10, 5 and 1% level

Table 6.
Moderated regression analyses (MRA) results

	Equations		
	(1)	(2)	(3)
Intercept	3.772	3.537	1.050
AssurPro	1.764***	1.764***	6.426***
ERD	–	0.113	0.496*
AssurPro* ERD	–	–	–0.883**
Size	0.108	0.093	0.109
ROA	–5.352**	–5.591**	–5.437**
ROE	0.590	0.638	0.784
DAR	–0.552	–0.524	–0.452
Evidence	0.870***	0.852***	0.882***
Industry effect	Yes	Yes	Yes
Fiscal year effect	Yes	Yes	Yes
Territory country effect	Yes	Yes	Yes
Obs.	96	96	96
Adjusted R^2	0.401	0.395	0. 419
F statistic	6.775***	6.175***	6.262***

Note: *, ** and *** indicate significance at the 10, 5 and 1% level

AssurPro on IAS quality. However, the interaction of the variable ERD weakens the effect of accounting AssurPros on ASB; that is, a high corporate ER reduces IAS quality issued by accounting AssurPros. This study proves that accounting AssurPros' institutional logic in Asia is influenced by state regulation; thus, the absence of mandatory guidelines makes them conservative and cautious in doing assurance. Accounting AssurPros tend to accept a limited level of assurance assignments and increase their confidence by focusing on performing audit procedures and gathering rigorous evidence. This analysis is in line with previous research (Seguí-Mas *et al.*, 2018; Paulo Perego, 2009; Deegan *et al.*, 2006b; O'Dwyer and Owen, 2005).

Additionally, accounting AssurPros' low score on addressees and recommendations elements is interrelated, i.e. the selection of the IAS short format occurs because addressees are only intended for the firm's internal parties' benefit. Therefore, the disclosure of recommendations in separate reports is likely to be more effective (Mock *et al.*, 2007) and is in accordance with the tradition in financial auditing.

This study also proves that nonaccounting AssurPros can better accommodate the intended user's needs to obtain adequate information about the company's ER. They have specific knowledge in carrying out sustainability assurance (Huggins *et al.*, 2011), so they are confident to provide higher level assurance and take a more evaluative approach (O'Dwyer and Owen, 2005). This condition makes nonaccounting AssurPros superior in expressing their opinions and recommendations in the IAS (Paulo Perego, 2009; Mock *et al.*, 2007). Table 5 confirms the MRA results, namely, addressees and recommendations depict negative *t*-value test results, signifying that the quality of accounting AssurPros in these two elements is lower than nonaccounting AssurPros. A robustness test strengthens the test results.

The test results for the control variables on ASB are varied. Client characteristics that affect IAS quality are only ROA, i.e. lower ROA results correspond to IAR's higher quality. De Villiers and van Staden (2011) reveal that firms with lower financial performance tend to make more detailed environmental disclosures, allowing AssurPro to get much information to express his opinion.

The variable evidence shows interesting results because it is proven to have a positive effect throughout the equation. Like financial statement audit assignments, evidence collection is critical to draw an opinion (Arens *et al.*, 2017; Hayes *et al.*, 2014).

4.3 Robustness analysis

The robustness analysis was conducted by testing the model specification by adding the assurance report coverage (RepCov) and the assurance standard (ISAE 3000) variables. RepCov is the breadth of testing of sustainability reporting, in which the GRI Standards denote it with activities to provide an assessment of information. More specifically, Hummel *et al.* (2019) divide them into the full report, quantitative and qualitative statements and quantitative or qualitative statements, which in this study, each is valued by 1, 0.7 and 0.3. By adding these two variables to the model (see Table 7), the results of testing the effect of the AssurPro types on IAS quality and ER interactions are robust and proven not to be spurious correlations caused by the omission of the breadth of testing an assurance assignment and the use of the ISAE 3000 standard. This study is limited to a single reporting year, and to overcome the possibility of endogeneity problems, we have tested that there is no correlation between independent variables and errors.

5. Conclusions, limitations and further research

This empirical study has two objectives: investigating the effect of AssurPro type on IAS quality and identifying the ER interactions. The results show that accounting AssurPro can improve IAS quality more than nonaccounting AssurPro in disclosing IAS elements. Nevertheless, the ER disclosed by accounting AssurPro is less clear on IAS. The absence of mandatory standards makes accountants conservative and cautious in carrying out assurance assignments as described by ILT (Thornton *et al.*, 2005). Accounting AssurPros tend to choose a lower level of engagement than their counterparts and are strict with assurance procedures and evidence gathering. This enables nonaccounting AssurPros to disclose a higher IAS quality concerning opinions and recommendations and to accommodate the information currently needed by the intended users, namely, ER

Table 7.
Robustness test results

	Assurance report coverage			ISAE 3000			Combined		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Intercept	3.919	3.557	1.012	3.747	3.524	1.072	3.894	3.545	1.026
AssurPro	1.732***	1.724***	6.497***	1.648***	1.654***	6.355***	1.618***	1.620***	6.450***
ERD	–	0.193	0.590*	–	0.108	0.491*	–	0.187	0.587*
AssurPro* ERD	–	–	–0.904**	–	–	–0.874**	–	–	–0.898**
Size	0.109	0.083	0.098	0.105	0.091	0.108	0.105	0.080	0.098
ROA	–5.428**	–5.855**	–5.716**	–5.601**	–5.818**	–5.491**	–5.674**	–6.067**	–5.752**
ROE	0.556	0.627	0.776	0.644	0.687	0.794	0.609	0.674	0.783
DAR	–0.492	–0.429	–0.348	–0.525	–0.500	–0.448	–0.466	–0.407	–0.345
Evidence	0.899***	0.876***	0.909***	0.867***	0.851***	0.882***	0.896***	0.875***	0.908***
RepCov	–0.568	–0.717	–0.770	–	–	–	–0.566	–0.710	–0.769
ISAE 3000	–	–	–	0.188	0.179	0.042	0.185	0.169	0.028
Industry effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fiscal year effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Territory country effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	96	96	96	96	96	96	96	96	96
Adjusted R^2	0.400	0.398	0.423	0.395	0. 390	0.412	0.394	0.392	0.415
F statistic	6.278***	5.822***	5.967***	6.176***	5.664***	5.745***	5.761***	5.368***	5.501***

Note: *, ** and *** indicate significance at the 10, 5 and 1% level

(Albertini, 2014). Overall, our empirical evidence has significant implications for revealing AssurPro's preferences for disclosing quality IAS using the ILT. Our findings are also beneficial for regulators concerned about setting mandatory standards in Asian countries and for all AssurPro types, who face the challenge of disclosing quality IAS.

This study has several limitations that can be used as recommendations for future research. First, it uses stand-alone SRs of large companies in Asia. Future research can carry out the same test using a different form of a report developed in Asia, namely, the integrated report (IR). Second, the classification of accounting AssurPro into Big-N and non-Big-N can also be done by future researchers to test IAS quality.

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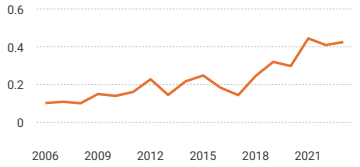

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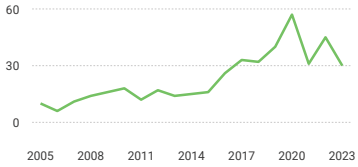

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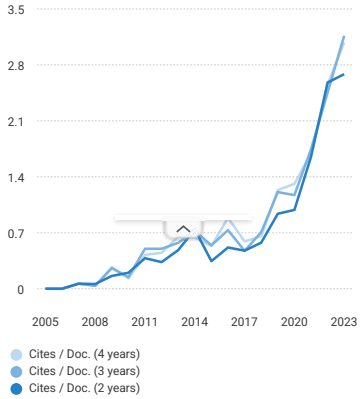

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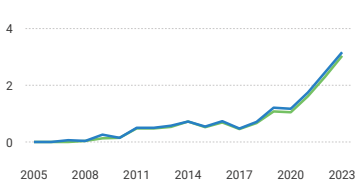

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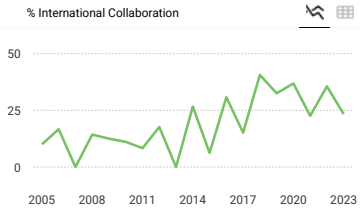

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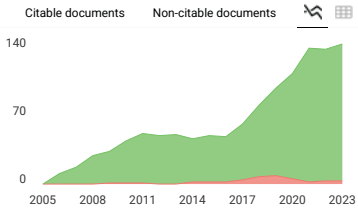

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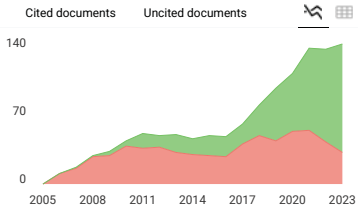

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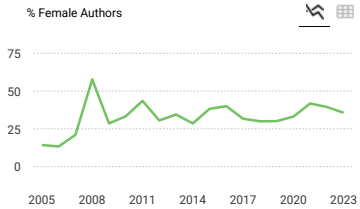

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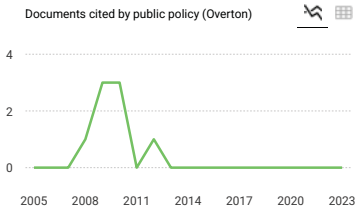

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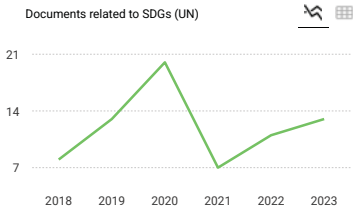

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An explanation of winner stock momentum

aMehdi Elhaei Sahar, bRezvan Hejazi ,cAllah Karam Salehi and dHossein Moltafet

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b Department of Accounting, Khatam University, Tehran, Iran

c Department of Accounting, Masjed-soleiman Branch, Islamic Azad University, Masjed-soleiman, Iran

d Social Science Department, Faculty of Economics and social science, Shahid Chamran University, Ahvaz, Iran

Abstract
Purpose- Lately, the anomalies in capital markets have severely challenged the efficient hypothesis. The winner stock momentum is one of the anomalies called the unexplained short-term return by Fama and French (1996). The current study attempts for explaining the winner stock momentum in the Iranian capital market.
Design/methodology/approach –The grounded theory method was used to explain wining stock momentum. To this end, in-depth interviews were held with 32 specialists working in the professional and academic grounds in 2018. The collected data were encoded in three stages, and the results were presented as a conceptual paradigm. Then, to quantify the model by the fuzzy analytic hierarchy process, a pairwise comparison questionnaire was distributed among the specialists. The research results are presented as a qualitative-quantitative model and the story extracted by grounded theory.
Findings –The study discoveries recognized the momentum causal factors in the behavioral level, the background factors in the social, macroeconomics, and market levels, the intervening factors in the global economics, macroeconomics, market, and company levels, and the strategies in the social, macroeconomics, market, the investment and finances institutions, and consequences factors in market level.
The study results propose that the winner stock momentum phenomenon must not be considered a speculation opportunity. Rather, it is an anomaly that has to be controlled with the suggested strategies. The consequences of the implementation of these strategies contain the stable and normal income for the market actors, the decrease in the loss inflicted on natural persons due to the market volatility, the management of anomalies, more effective attraction and allocation of liquid capitals, the reduced credit risk of brokerages, and the acceleration of liquidation in the market.
Research limitations/implications- The limitation of this research is non-use international statistical sample.
Practical implications – Schools, universities, the Securities and Exchange Organization, and the national media should promote financial knowledge on different social levels and introduce the anomalies. The government should put more effort into the correct enforcement of Principle 44 of the Constitution, reduce budget dependency on oil revenues and value reliance on endogenous revenues (such as tax revenues) more. Investment and financial institutions shall conduct their transactions in accordance with the trading strategy codes suiting each trade and using investment committees to ensure market stability. The Securities and Exchange Organization should set requirements such as transparency, obligatory disclosure, and reduction of trading costs. Governmental bodies should pass laws to increase floats in the ownership structure of companies, pass final firm laws to support minor shareholders, firmly punishing the criminal acts (by the supervisory body), and reducing the ownership percentage of pension funds and state institutions in companies' shareholders to pave the way for the development of the Iranian capital market.
Originality/value – The present study is the first of its kind, concentrating on an explanation for winner stock momentum by grounded theory and present a story and qualitative-quantitative model for the momentum phenomenon.
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