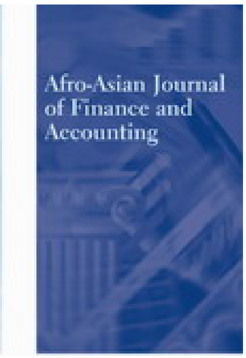

Afro-Asian J. of Finance and Accounting

ISSN online: 1751-6455 - ISSN print: 1751-6447
https://www.inderscience.com/aajfa

A longitudinal investigation of IFRS-8 implementation: evidence from Qatar

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DOI: 10.1504/AAJFA.2022.10045453

Article History:

Received:	18 October 2019
Last revised:	02 August 2020
Accepted:	07 August 2020
Published online:	31 January 2023

A longitudinal investigation of IFRS-8 implementation: evidence from Qatar

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Abstract: The main objective of the current study is to investigate the segmental information reporting (SIR) of Qatari listed firms covering the period from 2009 to 2018. The sample comprises all companies listed on the Qatar Stock Exchange (QSE) at the end of 2009. A disclosure index was developed to determine the extent of SIR amongst the sample companies. The study used a longitudinal empirical analysis approach; a year-by-year analysis. The findings revealed a gradual upsurge and awareness of the requirements of IFRS-8 from year to year. Moreover, the reported results suggest that the post-implementation review of IFRS-8 has had a large and positive impact on SIR disclosures since 2014. This research should provide substantive insights for regulators and standard-setters in identifying best practices and spreading awareness of SIR, which in turn should allow SIR practices to become more standardised, making them easier to monitor and govern. Our study provides a longitudinal examination of segmental reporting practices in a developing country, such as Qatar, which permits direct examination of the progress made regarding the implementation and extent of SIR.

Keywords: IFRS-8; segmental reporting; post-implementation review; IASB; emerging markets.

Reference to this paper should be made as follows: Mardini, G.H., Alkurdi, A. and Ahmed, A.H. (2023) 'A longitudinal investigation of IFRS-8 implementation: evidence from Qatar', *Afro-Asian J. Finance and Accounting*, Vol. 13, No. 1, pp.125–145.

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1 Introduction

Major accounting standards setters, such as the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) have issued accounting standards that relate to segmental information reporting (SIR) (IASB, 2006). Internationally, the IASB issued International Accounting Standard No. 14 (IAS-14) related to SIR in 1981, which it was updated with a revised version in 1997 (IASB, 1997). In 2006, the IASB issued International Financial Reporting Standard No. 8 (IFRS-8) which was effective from 2009. It mainly requires that:

1 an entity must define its segments as operating segments

2 a firm should publish its SIR information in accordance with its internal reports that are aligned with the chief operating decision maker's (CODM's) perspective (IASB, 2006).

In other words, the two requirements imply that IFRS-8 adopts the management approach of Financial Accounting Standard No. 131 (FAS-131), which was issued by the FASB in 1997. This approach assures that the internal reports of a firm that are published for the public are reviewed by the firm's CODM (FASB, 1997). In 2013, the IASB ran a post-implementation review of IFRS-8 to increase awareness about the importance of SIR to users, and how it is useful to decision makers (IASB, 2013).

The Qatar business environment provides an interesting research scenario within which to investigate IFRS-8 implementation. First, as a part of the of Qatar Stock Exchange establishment, Qatar adopted International Accounting Standards (IAS) (developed as IFRS nowadays) and mandates all listed firms to prepare their financial statements and annual reports in accordance with these standards' requirements. This has lead Qatar to respond to global economic needs and to develop its financial reporting system to have open business environments with Western firms and regulatory bodies. Second, at the listed firm level, the level of IFRS adoption may face difficulties in ensuring that this adoption is realised as being in the public interest (i.e., that of the stakeholders). Third, Qatar's booming economy, as a developing country, may mean that there are different results if compared to prior studies. Additionally, our study is the first of its kind that adopts a longitudinal approach in order to address IFRS-8 implementation in a developing country, such as Qatar. Finally, IFRS-8 fundamentally alters the reporting of segment information on financial statements with additional enhancement, such as requiring additional segment information that is useful to the stockholder and to other related decision makers. It also discloses the information that is actually used by management for assessing the segments' performance (Nichols et al., 2012). IFRS-8 is thus a very interesting standard to investigate concerning its impact on Qatari listed firms. Numerous prior studies have investigated IFRS-8 from different perspectives, for instance, the level of disclosure, factors that affect SIR under IFRS-8 and its forecasting ability. However, the current study attempts to tackle IFRS-8's level of disclosure with a different approach, if compared to prior studies. In particular, the primary approach of the current study is to empirically investigate the SIR of Qatar listed firms by adopting a longitudinal empirical analysis approach; a year-by-year analysis. This approach offers the findings that are related to the investigated phenomena to be addressed in details per year, per SIR items, and per sector, for a period of 9 years (2009–2018). The objective of the current study is thus to examine the SIR provided in the annual reports of the Qatari listed companies. In particular,

1 it examines the level of SIR disclosures per year, SIR items and sector

2 it investigates the impact of the post-implementation review of IFRS-8 on SIR disclosures

3 it explores the determinants (company characteristics) of SIR disclosure using panel data.

One of the main findings of this paper is that the post-implementation review of IFRS-8 has had a very positive impact on SIR disclosures since 2014.

Our study presents a contribution to knowledge in many aspects. First, its objectives demonstrate a need for further research that explores SIR from a different empirical approach. The implications of this study have the potential to contribute to extant literature on segmental reporting, and to assist policy makers and practitioners in identifying best practices and spreading awareness of SIR practices. The principle of this paper takes a different approach by aiming to address a research gap in prior studies. What is missing in the literature, and the problem that is being addressed by this research, are the pre- (2009–2013) and post-implementation review (2014–2018) of IFRS-8. Instead of replicating previous studies, the current paper expands our contemporary understanding of the IFRS 8 post-implementation review's impact and the effect it may have on SIR. Second, this paper provides explanations that improve the understandings of academics, policy makers, and practitioners on why different contexts and different empirical approaches that are implemented through IFRS-8 show different implications, thereby improving our understanding of how this important area of research is moving forward. Third, this paper's uniqueness entails addressing the calls for more research in this area by building on, and extending, prior studies, through its empirical approach. Fourth, the current study contributes to the extant literature by providing recent and comprehensive evidence regarding the development of SIR practices over the years. Finally, the findings are beneficial to Qatari policy makers and to both firms and stakeholders; the findings can be generalised in relation to other developing countries, especially those countries with a profile that demonstrates a lack of evidence about the IFRS's application and implications.

Our study finds that the post-implementation review of IFRS-8 in 2013 demonstrates that there has been a notable increase in most of the items within its first year of effectiveness (2014), and the diversification of SIR in annual reports varies widely among firms. Moreover, our results show that larger sized and profitable firms have shown a significant and positive impact due to SIR, which supports stakeholders by explaining any variation in the SIR published in the annual reports.

The remainder of the paper is organised as follows. Section 2 presents an overview of segmental reporting and a review of the literature. The research design is outlined in Section 3. Section 4 presents the results. Finally, the conclusion, the policy implications of the results, and the limitations and avenues for future research are provided in Section 5.

2 Theoretical framework and literature review

2.1 Theoretical framework: segmental reporting

Financial reporting plays a critical and vital role in the market economy and its prospects (Aleksanyan and Danbolt, 2015; Tahat et al., 2017; Fooladi and Farhadi, 2017; Hasnaoui and Fatnassi, 2019; Thanatawee, 2019). This role is derived from the usefulness of financial information with qualitative characteristics gained through financial statements and the related disclosure. It helps different type of users, such as shareholders, investors, creditors, government, existing and potential capital providers, lenders, to enhance their decision making (Li, 2013). Specifically, firms are encouraged to focus on diversification in operations (Nichols et al., 2013). In other words, many companies are striving to achieve some economic benefits, such as sustainable growth, and to reduce operating risks (Nichols et al., 2012). More concisely, IFRS-8 requires firms that engage in different significant business to provide additional information that is related to their business segments, generally including their operating segments.

The issue of SIR draws the attention of a large group of users. Indeed, many studies have shown that companies, financial analysts, and users of accounting information have been particularly concerned with the relevant segmental information disclosed (Deppe and Omer, 2000). Moreover, prior studies draw the attention of firms to the fact that segment information is essentially important to users of financial statements (Hayes and Lundholm, 1996; Givoly et al., 2000; Prencipe, 2004; Nichols et al., 2012; Li, 2013; Mardini et al., 2012; Mardini et al., 2013; Aleksanyan and Danbolt, 2015; Andre et al., 2016; Crawford et al., 2012; Lucchese and Di Carlo, 2016; Mardini et al., 2018; Kobbi-Fakhfakh et al., 2018; Roy and Das, 2019). Segmental reporting is essential to users because it enables different type of financial statements' users to analyse the firm's performance (Aleksanyan and Danbolt, 2015). Further, it offers an all-purpose image of the firms' situation as a whole, including the possibility to better assess risks and firms' profitability (Street and Nichols, 2002). In addition, it contributes to enhancing transparency and the consistency of the information disclosed across the entire annual report (Herrmann and Thomas, 2000; Ettredge et al., 2006).

Over the past decade, the SIR regime has thus changed. IFRS-8 is the latest standard issued on SIR disclosures. It was issued in 2006, and became effective in 2009, replacing International Accounting Standard No. 14 Revised (IAS-14R). In essence, the process of adopting IFRS 8 was motivated by the IASB-FASB convergence agenda [IASB, (2006), para. IN2], to improve SIR and its value relevance, which enhanced the benefits of international harmonisation, and broadly increased the ability of users to see an enterprise through the eyes of its management, which is called the management approach (Aleksanyan and Danbolt, 2015). Within the internal reports of a firm, the management approach indicates many aspects that firms are required to disclose. Specifically, segmental disclosure is based on the content of the information that is used by management in relation to critical decisions about how resources should be allocated to operating segments and to evaluating the performance of this segment (Berger and Hann, 2003; Nichols et al., 2013; Aleksanyan and Danbolt, 2015; Lucchese and Di Carlo, 2016; Mardini et al., 2018). Furthermore, there is a need for an external user to understand and evaluate the entity's performance for better decision making (Lucchese and Di Carlo, 2016).

2.2 Literature review

Numerous studies investigate the extent of SIR in developed and developing countries under IFRS-8 (Altintaş, 2010; Nichols et al., 2012; Crawford et al., 2012; Mardini et al., 2012; Kang and Gray, 2013; Moldovan, 2014; Franzen and Weibenberger, 2015; Alanezi et al., 2016; Andre et al., 2016; Kobbi-Fakhfakh et al., 2018; Heo and Doo, 2018; Mardini et al., 2018; Roy and Das, 2019). In terms of developed countries, for instance, Moldovan (2014) assessed the first year after the implementation of IFRS-8 for 400 European multi-segment companies. He found an increase in segmental disclosure and entity information in the notes to financial reports. The findings of Crawford et al. (2012) was illustrated through the use of the opinions of a sample of users, preparers and auditors about the latest segment regime change of SIR, showing that IFRS-8 provided decision-useful information.

In contrast to the findings above, some prior studies, such as Pisano and Landriani (2012), Kang and Gray (2013), had asserted that there are no significant changes made in the average number of reporting segments in Continental European Countries after the adoption of IFRS-8. Additionally, Nichols et al. (2012), from reviewing literature about the impact of IFRS8's effect on the extent of segmental information disclosed, concluded that, although the IASB anticipated an increase in the number of reported segments following the adoption of the standard, the majority of companies did not change the level of segment disclosure. Crawford et al. (2012) also argued that there is a conflict between IFRS-8's requirement to enhance the internal decision making, rather than that of the external users, and the objective of the conceptual framework, which gives primacy to existing and potential investors. Some studies examined the introductory year following IFRS-8's implementation through different factors that are related to the firms.

For example, Andre et al.'s work (2016) was derived from a study conducted on 270 companies from 17 EU countries, which showed that after IFRS-8's adoption, proprietary costs could be solved by applying discretion in operating segment aggregation. In addition, Katselas et al. (2011) documented that managerial discretion increased after the implementation of IFRS-8 in the operating segments; they also define the extent and evaluation criteria of the segment information disclosure.

However, after IASB published a report with a feedback statement following its post-implementation review of IFRS-8 in 2013, some of the prior studies examined this report's impact on segment disclosure and provided evidence of increases in the segment disclosure level after 2013. For instance, Birt et al. (2017) investigated Indian banks, they found an increase in the relevancy of value, especially in the segment earnings data and the segments for which disaggregated information was supplied, which were related to higher share prices. In the same year, the findings of Kajuter and Nienhaus (2017), which were derived from the value relevance of segment reports for German listed firms, reported that the amount of segmental information increased under IFRS-8, and disclosures show the superior value relevance of segment reports according to IFRS-8.

More recently, Kobbi-Fakhfakh et al. (2018) have suggested that there is a substantial variation in the quality of SIR among the sample of 171 European Union (EU) companies. With regard to the cost related concept of SIR, Aboud et al. (2018) derive a major finding that is related to the significant role that is played by proprietary and agency costs to the identification of the quality and quantity of segment disclosure. More importantly, they found that within the post-implementation review of IFRS-8, the proprietary costs contribute to providing lower segment disclosure quality.

In the same pattern, Andre et al. (2016) examined the incentives of segment disclosure quantity and quality under IFRS-8. They support the motivation of proprietary cost. Additionally, Heo and Doo (2018) argued that in firms with multi-segments, the levels of segment disclosure become more pronounced and attractive for analysts through enabling them to 'forecast to increase their accuracy'. Furthermore, Lail et al. (2014) documented, through intersegment income shifting, the transferring profits between segments operating in industries from lower valuation multiples to those with higher multiples. More recently, Mardini and Ammar (2019) Found that the impact of the post-implementation review of IFRS-8 increased both the segmental reporting quality and quantity of FTSE-100 UK firms.

In terms of developing countries, SIR is a point of interest for emerging markets. For example, Altintaş (2010) found that IFRS-8 did not cause major changes in SIR. Specifically, he demonstrated that Turkish listed firms behave conventionally in making major changes of SIR under IFRS-8. On the contrary, Mardini et al. (2012) found that IFRS-8 has a positive impact on SIR under IFRS-8. Using a disclosure index approach, the first year of its implementation, in 2009, showed several improvements in the level of SIR disclosed by Jordanian listed firms. Specifically, the total number of SIR items disclosed increased, while few firms published SIR for the first time due to the new requirements of IFRS-8. Furthermore, Alanezi et al. (2016) found that Kuwaiti listed firms did not fully comply with IFRS-8 disclosure requirements, which highlights a recommendation that the regulators to review and control the SIR disclosures that are published for the stakeholders. More recently, Hassan and Abubakr (2018) investigated the extent of the SIR of Iraqi listed firms for a period from 2012–2016. In alignment with

Alanezi et al.'s (2016) study, they found that the compliance with IFRS-8 requirements is very low. They thus emphasised that the external auditors should exercise their professional duties in order to increase the extent and reliability of SIR published in the annual report. Overall, we conclude that IFRS-8's implementation varied within developing countries in terms of having a positive or negative impact of IFRS-8 on the SIR published to stakeholders; and this depends on the business environment. Moreover, our study includes the post-implementation review with a longitudinal approach for a period of 10 years (2009–2019) in order to verify prior studies' findings.

Moreover, some prior studies conclude that that IFRS-8 and its impacts on SIR increase their helpfulness and usefulness for the users of accounting information; especially in relation to external users, such as stakeholders, who are mainly concerned with the financial information of different segments of business. For instance, Roy and Das (2019) have demonstrated that SIR is relevant to assessing the risks and returns of a diversified or multinational entity. Moreover, Lucchese and Di Carlo (2016) and Amado et al. (2018) have found that SIR is a relevant tool in enabling more accurate analysis to be made for the users' decision-making processes.

3 Research design

3.1 Sample selection

The official website of the Qatar Stock Exchange (QSE) was used to define the number of companies listed on the market for 2009 to 2018. There were 42 companies listed in 2009, while an additional firm listed in 2010; it lead to a total of 43 companies were listed in 2010-2018. Specifically, one firm (Vodafone Qatar Company) was listed in 2010. Listed companies are grouped into three main sectors: banking and financial, industrial and services. The final sample included 43 firms, which comprises 14 banking and financial sector, seven industrial and 22 services firms.

3.2 Segmental reporting disclosure measurement and modelling

The objective of the current study is to extensively examine the extent of the segmental reporting of Qatari listed companies from 2009–2018; adopting a longitudinal approach. The disclosure index constructed includes the mandatory SIR items, which are based on the segmental reporting requirements that are included in IFRS-8; it also includes any voluntary segmental items that are disclosed by the sampled companies. The final segmental reporting total score (SRTS) comprises 24 items; 18 of which were drawn from those required by IFRS-8, and a further six voluntary items were identified from the annual reports. The disclosure index checklist is reproduced in the Appendix, and it includes two segmental information categories.

The study adopts the unweighted approach, because the scope of this study is comprehensive (Cooke and Wallace, 1989; Prasad et al., 2018; Nisha and Rifat, 2019). Cooke and Wallace (1989) argued that this approach treats all the items that are required to be disclosed by the company with equal weight. Hence, the SRTS for a company was calculated by adding the individual scores for the different items and then dividing them by the total number of items that are included in the total disclosure index:

$$\text{tSTRS} = \sum_{i=1} x_i / t \qquad \text{[Total 24 items]}$$

where x = 1, if the item is disclosed, and 0 otherwise.

The reliability test of the disclosure index for the current study shows that there is a good level of internal consistency (reliability) in disclosure. The results indicated that the coefficient for Cronbach's alpha was 0.76 for the disclosure items, implying an acceptable level of internal consistency in the disclosure index results.

A complementary analysis is included in the current paper. Specifically, an ordinary least squares (OLS) regression model is constructed in order to analyse the cross-sectional association between the SRTS of Qatari listed firms (dependent variable as panel data 2009–2018) and some company characteristics (independent variables), namely, company size, liquidity, profitability, leverage and sector type. The panel data approach leads us to run the regression with 386 observations.

$$SRTS = \alpha + \beta_1 SIZE_i + \beta_2 LIQ_i + \beta_3 PRO_i + \beta_4 LEV_i + \beta_5 SEC_i + \varepsilon_i$$

where

SIZE company size, total of assets measure with log transformation was applied (e.g., Alfaraih and Alanezi, 2011; Franzen and Weibenberger, 2015; Leung and Verriest, 2015; Heo and Doo, 2018; Amado et al., 2018).

LIQ liquidity was measured as the current ratio (e.g., Alsaeed, 2006; Aljifri, 2008; Mardini et al., 2013).

PRO profitability was measured as the return on equity (e.g., Glaum and Street, 2003; Alfaraih and Alanezi, 2011; Lucchese and Di Carlo, 2016; Suntraruk and Xiaoxing, 2017).

LEV leverage was measured as the total debt to common equity (e.g., Prencipe, 2004; Ibrahim, 2015; Kobbi-Fakhfakh et al., 2018).

SEC sector type was measured as a dummy variable, where 1 was for financial, 2 for industrial, and 3 for services firms (e.g., Prather and Meek, 2004; Mardini et al., 2018).

4 Results and discussion

4.1 Descriptive results of SR disclosure

Table 1 reports the results of the SRTS from 2009–2018 that were reported by Qatari listed companies. Clearly, it shows that the level of SRTS increased from year to year, most dramatically in 2014, and beyond. This finding suggests that the post-implementation review of IFRS-8 in 2013 (which became effective in 1/1/2014) has had a positive impact on the level of SIR disclosures. It enhanced the awareness of the SIR by the Qatari listed firms, and showed them how it was important that such information be published for the stakeholders and the community. Specifically, Table 1 shows that the mean of SRTS in 2013 was 49.92% while, in 2014, it rose to 58.24%, we conclude from this that there was a growth in SRTS of 8.32% in one year of SIR reporting. The table also shows that the increase in SRTS demonstrated a constant trend over the period of the study, with a peak of 66.56% in 2018. Within the same year, it recorded the highest percentage (32.28%) in terms of the minimum level of SIR disclosure, while in 2015 to 2017 reports the maximum level of SIR disclosures was shown (91.52%). In summary, the results shows 52.83% of SRTS, which is considerable as a medium level of disclosure. However, the results of the current study are aligned with the results of Heo and Doo (2018), who found the level of segment disclosure to be very similar to our finding, with an average of 66% of companies disclosing segment-level operating information. Moreover, Mardini et al. (2012) found that IFRS-8 has a positive impact on SIR, and this finding is also aligned with our study's findings.

Table 1 Descriptive statistics of SRTS in percentage (per year)

Year	*Mean*	*Median*	*St. dev.*	*Minimum*	*Maximum*
2009	37.44	44.45	20.21	0.00	79.04
2010	41.60	45.67	21.43	0.00	83.20
2011	45.76	45.47	20.85	4.16	83.20
2012	49.92	45.81	21.65	8.32	87.36
2013	49.92	46.21	21.86	8.32	87.36
2014	58.24	56.46	21.91	24.96	95.68
2015	54.08	52.57	21.95	24.96	91.52
2016	62.40	56.46	22.21	29.12	91.52
2017	62.40	57.21	21.51	29.12	91.52
2018	66.56	58.46	21.43	32.38	91.52
Overall	52.83	50.88	21.50	16.13	88.19

Table 2 provides the level of SIR disclosures in terms of the number of companies within the five scales of the level of disclosure. Specifically, we have divided the SRTS into five categories with 20% SRTS each. Again, this shows that the post-implementation review of IFRS-8 concludes that there is a positive impact that is derived from the level of SIR disclosure. For instance, only three companies reported a more than 80% level of SIR disclosures, while the number of companies that reported within this scale increased to nine companies in 2014 and 11 companies in 2018. Moreover, five companies disclosed SIR on Scale 4 (60.1% – 80%) for the first time in 2014. Clearly, Table 2 reveals that about 55% (23 of 43 firms) of the sample firms had provided SIR disclosure of less than 40% before the post-implementation review of 2013. Nonetheless, it shows that only about only 33% (14 of 43 companies) disclosed less than 40%. These findings suggest a notable increase in the SIR level of disclosure after the post-implementation review of IFRS-8. In summary, the findings of Tables 1 and 2 provide an answer to one of the main objectives of the current study and confirm that the post-implementation review following the introduction of IFRS-8 has enhanced the level of SIR disclosures, if compared to IFRS-8's introductory years (2009–2013). In terms of prior studies, the current findings are aligned with Kajuter and Nienhaus (2017) and Birt et al. (2017), which found both an increase in the average number of firms, which disclosed such information, and an increase in the disclosure of segments after the post-implementation review. Additionally, our results are similar to recent research by Heo and Doo (2018), who concluded that the diversification of information reported in annual reports varies widely among companies. Moreover, the amount of disaggregated financial information for each business segment ranged between (0 and 19).

Table 2 SRTS of five scales (20% each) per company and in percentage (per year)

Five scales of SRTS score	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
0–20%	5 firms 11.90%	4 9.30%	4 9.30%	4 9.30%	4 9.30%	2 4.65%	2 4.65%	3 6.98%	3 6.98%	4 9.30%
20.1–40%	21 50.50%	20 44.61%	20 44.61%	19 44.19%	19 44.19%	12 27.91%	12 27.91%	12 27.91%	11 25.58%	10 22.36%
40.1–60%	9 21.43%	12 27.91%	11 25.58%	10 22.36%	9 20.93%	7 16.28%	9 20.93%	6 13.95%	6 13.95%	4 9.30%
60.1–80%	6 14.29%	6 13.95%	7 16.28%	7 16.28%	8 18.60%	13 30.23%	13 30.23%	13 30.23%	13 30.23%	14 32.56%
80.1–100%	1 2.38%	1 2.33%	1 2.33%	3 6.98%	3 6.98%	9 20.93%	7 16.28%	9 20.93%	10 22.36%	11 25.58%
Total	42	43	43	43	43	43	43	43	43	43

4.2 SIR disclosure analysis by items

This subsection shows the level of SIR disclosure item-per-item in relation to Qatari listed companies from 2009 to 2018. The results are reported in Table 3. This shows that the Qatari listed companies disclosed the majority of the items, with the exception of items nos. 6, 8, 9, 14 and 18. However, it was expected that there would be a low level of SIR disclosure in relation to items nos. 8 and 9, due to not all of the companies having internal sales and the basis for its pricing. On the other hand, some companies may have internal sales, but are not willing to disclose such information if the company does not recognise its CODM. Again, the post-implementation review of IFRS-8 in 2013 shows a notable increase in most of the items within its first year of effectiveness (2014). Moreover, Table 3 shows a moderate to low level of SIR disclosures for items nos. 19 to 24. This level of SIR disclosures emerges for SIR items that offered on a voluntary basis. Compared with previous literature, our result is align with Amado et al. (2018) and Heo and Doo (2018), which indicated that IFRS-8 had a positive effect on the number of segments disclosed, and that the average number of items disclosed increased after IFRS 8's adaption. On the contrary, some prior studies have found that the number of items disclosed decreased following the implementation of IFRS-8 (Nichols et al., 2012; Bugeja et al., 2015; Andre et al., 2016; Aboud et al., 2018).

Table 3 The extent of SRTS per item and in percentage (per year)

		2009	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Mandatory items											
1	Profit	41 firms 96.6%	42 97.7%	43 100%	43 100%	43 100%	43 100%	43 100%	43 100%	43 100%	43 100%
2	Assets	39 92.9%	40 93.2%	41 95.3%	41 95.3%	41 95.3%	42 97.7%	42 97.7%	41 95.3%	43 100%	43 100%
3	Liabilities	27 64.3%	26 60.5%	26 60.5%	27 62.8%	27 62.8%	30 69.8%	30 69.8%	30 69.8%	28 65.1%	28 65.1%
4	Revenue (external)	41 96.6%	42 97.7%	43 100%	43 100%	43 100%	43 100%	43 100%	43 100%	43 100%	43 100%
5	Depreciation and amortisation	20 47.6%	20 46.5%	21 48.8%	21 48.8%	21 48.8%	23 53.5%	23 53.5%	23 53.5%	21 48.8%	22 51.2%
6	Other non-cash expenses	14 33.3%	14 32.6%	14 32.6%	14 32.6%	15 34.9%	15 34.9%	15 34.9%	15 34.9%	16 37.2%	15 34.9%
7	Reconciliation to CA	34 81.0%	33 76.7%	36 83.7%	36 83.7%	36 83.7%	40 93.02%	40 93.02%	41 95.3%	42 97.8%	42 97.8%
8	Revenue (internal)	0 0.0%	0 0.0%	2 4.7%	2 4.7%	2 4.7%	3 7%	3 7%	4 9.3%	4 9.3%	4 9.3%
9	Basis of ISP	0 0.0%	0 0.0%	2 4.7%	2 4.7%	1 2.3%	3 7%	3 7%	3 7%	3 7%	4 9.3%
10	Profit from A&JV	19 45.2%	20 46.5%	20 46.5%	20 46.5%	20 46.5%	24 55.8%	24 55.8%	23 53.9%	23 53.9%	23 53.9%
11	Basis of measurement	15 35.7%	17 39.5%	17 39.5%	18 41.9%	16 37.2%	20 46.5%	20 46.5%	21 48.8%	21 48.8%	21 48.8%
12	Interest revenue	12 28.6%	13 30.2%	14 32.6%	13 30.2%	14 32.6%	15 34.9%	15 34.9%	16 37.2%	16 37.2%	16 37.2%
13	Interest expense	7 16.7%	8 18.6%	9 20.9%	7 16.7%	8 18.6%	8 18.6%	7 16.7%	9 20.9%	9 20.9%	9 20.9%
14	Income tax expense	2 4.8%	3 7%	3 7%	3 7%	3 7%	3 7%	3 7%	3 7%	3 7%	3 7%
15	Factors used to ITES	26 61.9%	26 60.5%	26 60.5%	29 67.4%	28 65.1%	32 74.4%	32 74.4%	33 76.7%	33 76.7%	33 76.7%
16	Entity-wide (GI)	26 61.9%	28 65.1%	28 65.1%	29 67.4%	29 67.4%	31 72.1%	32 74.4%	32 74.4%	33 76.7%	33 76.7%
17	Entity-wide (MC)	32 76.2%	34 79.1%	34 79.1%	35 81.4%	35 81.4%	37 86%	38 88.4%	38 88.4%	38 88.4%	39 90.7%
18	Entity-wide (P&S)	0 0.0%	1 2.3%	1 2.3%	3 7%	3 7%	10 23.3%	9 21%	11 25.6%	12 28%	11 25.6%

Note: CA refers to consolidated accounts; ISP refers to internal-sales pricing; A&JV refers to associates and joint ventures; ITES refers to identify the entity's segments; GI refers to geographic information; MC refers to major customers; P&S refers to products and services; EXP refers to expenses.

Table 3 The extent of SRTS per item and in percentage (per year) (continued)

	2009	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Voluntary items										
19 Capital expenditures	14 33.3%	14 33.3%	14 33.3%	16 37.2%	16 37.2	21 48.8%	20 46.5%	22 51.2%	22 51.2%	22 51.2%
20 Cash	2 4.8%	2 4.7%	3 7%	3 7%	4 9.3%	2 4.7%	2 4.7%	4 9.3%	2 4.7%	3 7%
21 Direct administrative EXP	2 4.8%	3 7%	3 7%	3 7%	3 7%	4 9.3%	3 7%	2 4.7%	3 7%	2 4.7%
22 Direct cost	0 0.0%	0 0.0%	0 0.0%	3 7%	1 2.3%	2 4.7%	2 4.7%	2 4.7%	2 4.7%	1 2.3%
23 Financial investments	14 33.3%	15 34.9%	17 39.5%	18 41.9%	20 46.5%	23 53.5%	22 51.1%	22 51.1%	25 58.1%	25 58.1%
24 Equity	0 0.0%	2 4.7%	1 2.3%	3 7%	3 7%	2 4.7%	2 4.7%	2 4.7%	2 4.7%	3 7%

Note: CA refers to consolidated accounts; ISP refers to internal-sales pricing; A&JV refers to associates and joint ventures; ITES refers to identify the entity's segments; GI refers to geographic information; MC refers to major customers; P&S refers to products and services; EXP refers to expenses.

Yet, some items draw the attention of the Qatari listed companies to disclose them (i.e., 25 of 43 companies in 2018), as they are seen to be useful to the stakeholders. This is true of items No. 19 and 23, which are disclosed on a voluntary basis. This result thus suggests to IASB that it should consider these two items to be mandatory under IFRS-8 in the future (Roy and Das, 2019). In summary, it can be concluded that there is a considerable variation in the level of SIR disclosures across the items that are disclosed by Qatari listed companies. This is consistent with the findings of (Kobbi-Fakhfakh et al., 2018). Moreover, Alanezi et al. (2016) found that the compliance with IFRS-8 requirements varied from one SIR item to another, while, for some items, the disclosure was very low. Yet, it is clear that the quality of SIR varies from country to country, and we suggest that the business environment is playing an important role in the impact of the quality of SIR that is disclosed by entities.

Table 4 The average of SRTS across sector types number of items disclosed and in percentage (per year)

Year	*Banking and financial*			*Industrial*			*Services*		
	Min	*Max*	*Mean*	*Min*	*Max*	*Mean*	*Min*	*Max*	*Mean*
2009	6 items 24.96%	19 79.04	14 58.24	2 8.32	11 45.76	7 29.12	0 0.00	6 24.96	3 12.48
2010	6 24.96	20 83.20	15 62.40	2 8.32	11 45.76	7 29.12	0 0.00	7 29.12	4 16.64
2011	7 29.12	20 83.20	15 62.40	3 12.48	11 45.76	8 33.28	2 8.32	7 29.12	5 20.8
2012	7 29.12	21 87.36	16 66.56	3 12.48	12 49.92	9 37.44	3 12.48	9 37.44	6 29.12
2013	7 29.12	21 87.36	16 66.56	3 12.48	12 49.92	9 37.44	3 12.48	9 37.44	6 29.12
2014	10 41.60	23 95.68	18 74.88	3 12.48	14 58.24	11 41.60	7 29.12	12 49.92	9 37.44
2015	11 45.76	22 91.52	20 83.20	4 16.64	14 58.24	12 45.76	7 29.12	13 54.08	10 41.60
2016	10 41.60	22 91.52	19 79.04	4 16.64	14 58.24	12 45.76	6 24.96	13 54.08	9 37.44
2017	13 54.08	22 91.52	19 79.04	4 16.64	15 62.40	13 49.92	9 37.44	14 58.24	12 49.92
2018	14 58.24	22 91.52	20 83.20	5 20.80	15 62.40	14 54.08	9 37.44	16 66.56	13 54.08

4.3 SIR disclosure analysis by sector type

The descriptive statistics of SRTS across sector types (financial, manufacturing and services) from 2009–2018, are outlined in Table 4. This table shows that the level of SIR disclosure increased from one year to another for all sectors. However, it varies from one sector to another. Specifically, it shows that the highest growth of SIR disclosures is represented by the banking and financial sector, while the manufacturing and services sectors have adjacent rate of growth in relation to SIR disclosures. For instance, the mean score of the banking and financial sector in 2009 was 14 items (58.24%), while in 2015 this increased to 20 items (83.20%). It is believed that the banking and financial sector has responded well to the 2013 post-implementation review of IFRS-8, with its emphasis on disclosing further and useful SIR information. Moreover, it could be related to further factors, for instance, the banking and financial sector having the most advanced information technology and/or sufficient financial resources to provide more SIR disclosures, if compared to the manufacturing and services sectors. Clearly, the ANOVA one-way test shows that SIR disclosures by the banking and financial sector are statistically different (p-values < 5%) compared to the manufacturing and services sector across the sample period (2009–2018). Mardini et al. (2018) concluded that the amount of SIR disclosed by the sample firms differs across sectors.

4.4 The association between SIR and a firm characterises

This subsection illustrates and discusses the results of the association between SIR and a firm's characteristics. In Section 2, we did not develop a research hypothesis that related to this association, since it is not the main objective of the paper; it is considered an additional analysis used to wrap-up the main results of the current study and enhances its readiness for the reader. Table 5 shows the Spearman correlation test across the variables of the current study, namely, SRTS as a dependent variable, while company size (SIZE), liquidity (LIQ), profitability (PRO), leverage (LEV) and Sector type (SEC) are independent variables. In general, the table shows that the correlation between most of the variables is low (under 0.3). This indicates that there is no multi-collinearity issue among the variables. Moreover, the value of the variance inflation factor (VIF) across the variables is lower than three, indicating that the model is fine. Furthermore, Cronbach's alpha test shows high reliability coefficient statistics (0.781), this means that the variables have high internal consistency as a group, which leads us to conclude that the model is fine. Overall, SRTS was positively and significantly associated with the SIZE, PRO and LEV, while associated negatively and significantly with LIQ and SEC.

Table 5 The Spearman correlations test

Variable	*SRTS*	*SIZE*	*LIQ*	*PRO*	*LEV*	*SEC*
SRTS	1.0	0.253***	–0.233**	0.325***	0.273**	0.264*
SIZE	-	1.0	–0.145*	0.243***	0.278*	0.252*
LIQ	-	-	1.0	0.190	–0.231**	0.144
PRO	-	-	-	1.0	0.273**	0.152**
LEV	-	-	-	-	1.0	0.164
SEC	-	-	-	-	-	1.0

Notes: SIZE refers to company size; LIQ refers to liquidity; PRO refers to profitability; LEV refers to leverage and SEC refers to the company's sector type. The p-value significant level represents as follows: * = 10% significance level; ** = 5% significance level; and *** = 1% significance level.

The results of the regression analysis of the association between SRTS and firm characteristics that is provided in Table 6 shows that SRTS has a significant and positive relationship with SIZE and PRO. SIZE is a significant factor in explaining the variation in SRTS. This means that large sized companies can disclose more information than small companies can and they are more likely to be early adopters of the IFRS-8 post-implementation review of this standard. In addition, firms increase their segment disclosure to obtain an adequate level of performance in the competition area. In particular, large sized companies frequently have considerable financial resources, and are more complex and diverse in their operations (Alfaraih and Alanezi, 2011; Franzen and Weibenberger, 2015; Lucchese and Di Carlo, 2016; Heo and Doo, 2018; Amado et al., 2018). Moreover, Watts and Zimmerman (1983) argued that large firms have numerous shareholders; as a result, managers have an incentive to satisfy shareholders' decision making needs by enhancing the firm's disclosures and its reliability. Moreover, large firms tend to reduce the asymmetry of information between managers and stakeholders by enhancing and increasing financial information (i.e., SIR) so as to increase their market value (Wagenhofer, 1990; Wallace et al., 1994).

Additionally, profitability is related positively to SIR, this can be related to the increase in the number of reported segments, which enhances transparency, particularly with regard to communicating a positive performance, and this may be a valuable signal for investors (Naser, 1998; Glaum and Street, 2003). Furthermore, it is believed that profitability is considered a significant indicator of investment quality; hence, a firm seeks to increase SIR in order to minimise the risk of being adversely selected by the market (Alfaraih and Alanezi, 2011). On the other hand, firms with a high profitability level, the SIR may lead to the disclosure of sensitive information, which may reveal opportunities for profit (Lucchese and Di Carlo, 2016).

On the contrary, the current study has found that there is a significant, but negative, relationship between SRTS and LEV. This finding suggests that firms with a higher percentage of debt are more likely to disclose less information (Kelly, 1994; Kobbi-Fakhfakh et al., 2018). However, some prior studies have found a positive relation between SIR and LEV (i.e. Prencipe, 2004; Ibrahim, 2015), which suggests that a company's managers' decision-making processes are enhanced through monitoring the agency's relationship with lenders. Additionally, they tend to become more motivated to enhance the procedures of disclosing SIR in order to reduce the information asymmetry with their creditors.

Surprisingly, SRTS has a negative relation with LIQ, but this is not significant. This result may be ascribed to the idea that the level of SIR disclosures harms the liquidity of the company due to its subsequent competitive disadvantage (Alsaeed, 2006; Mardini et al., 2013; Aljifri, 2014).

Table 6 Regression analysis – the association between SIR and firm characteristics (N = 386)

Independent variables	*Dependent variable model (SRTS)*	*P-value (sign. level)*
Intercept	–37.654 (–1.260)	0.371
SIZE	9.646*** (2.343)	0.000
LIQ	–2.574 (–0.980)	0.156
PRO	9.576** (1.386)	0.045
LEV	–0.299* (–1.472)	0.072
SEC	–1.255* (–0.342)	0.084
Adjusted R^2	0.39	-

Note: The p-value significant level represents as follows: * = 10% significance level; ** = 5% significance level; and *** = 1% significance level.

5 Conclusions

This paper investigates SIR disclosures provided by Qatari listed companies for the years 2009 to 2018, using a longitudinal approach. The results of this study have reflected increasing, varying disclosure levels relating to the number of items disclosed, the number of firms disclosed, and the segment disclosure by sector, and especially after 2014, SIR increased significantly.

Our set of results in relation to the pre- and post-implementation review has acknowledged that the post-implementation review of IFRS 8 was successful in encouraging those firms to provide more disaggregated information for each operating segment. This could potentially lead to the improvement and enhancement of the decision-making process and the usefulness of financial information for financial analysts. For instance, SIR, under the IFRS-8 post-implementation review, can make accurate forecasts. Moreover, the increasing number of firms that reported SIR items disclosed per segment impelled those firms to become more willing to disclose segment information to the ultimate benefit of the different users and of the economy in general. Moreover, SIR disclosures under the IFRS-8 post-implementation review are considered an important tool with which to reduce the asymmetry of information. Moreover, such disclosure facilitates the improved corporate controlling of managers to justify the results of their stewardship. Consequently, the empirical findings of the current study also support the notion that the needs of the different participants in the capital market can be satisfied, since the management approach of IFRS-8 may have encouraged firms in different industries to increase and vary the level of SIR disclosed (Hope et al., 2009).

The examination of SIR and of firms' characteristics is also very useful in the current study. For instance, it can be observed that a firm's size increases the likelihood that a firm will report further SIR, and this may explained because the largest entities are more complex and diversified operations. Moreover, profitability proved to be a significant determinant of segment disclosure. Profitable firms would like to distinguish themselves from other less profitable firms by disclosing more valuable pieces of information to assure investors of the firm's profitability and to help support the management's continuation and completion in the market.

The current study has many practical implications. First, it provides empirical evidence about the usefulness of SIR for the practitioners, as well as for the standard setters (IASB). Second, the current paper has informed both Qatari society and the users of financial statements about the evolution of SIR disclosures from 2009-2018, through year-by-year empirical evidence. This may help them to request that those who prepare Qatari listed companies publish further SIR information in the future. Third, the findings of the current paper recommend that the Qatari policy makers in the Qatar Exchange put further emphasis on the Qatari listed firms in order to encourage them to fully adopt the IFRS that was issued by the IASB. Fourth, our results show that a higher number of segmental items are disclosed after the post-implementation review, the paper implies that stakeholders are likely to be aware of setting internal control procedures and policies within the firm through the SIR publication in the annual reports of Qatari listed firms. Increasing the number of segmental items disclosed will thus help the overall effectiveness of corporate governance. In summary, our paper has added practical implications for the existing literature, and for practitioners, stakeholders and standard setters.

The current paper still has some limitations. For instance, the disclosure index employed may have a level of subjectivity. However, the researchers ran some validity and reliability tests to minimise this level. The regression analysis includes firms' characteristics only, without the narrow objectives relating to other different factors (i.e., board of directors, enterprise information system). Future studies might build-up their perceptions on the results of the current paper. Moreover, a broader range of variables could be used in any future research. In terms of widening the scope of the work in the area, and taking into account the important role of corporate governance practices in enhancing disclosure and transparency, a second expansion might also examine the relationship between corporate governance and SIR practices.

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Appendix

SIR measurements

	IFRS 8 mandatory disclosures for operating segments: if reviewed by the CODM
1	Profit
2	Assets
3	Liabilities
4	Revenue (external)
5	Depreciation and amortisation
6	Other non-cash expenses
7	Reconciliation to consolidated accounts
8	Revenue (internal)
9	Basis of inter-segment pricing
10	Profit from associates and joint ventures
11	Basis of measurement
12	Interest revenue
13	Interest expense
14	Income tax expense
15	Factors used to identify the entity's segments
16	Entity-wide (geographic information)
17	Entity-wide (major customers)
18	Entity-wide (products and services)

SIR measurements (continued)

	Voluntary disclosures
19	Capital expenditures
20	Cash
21	Direct administrative expense
22	Direct cost
23	Financial investments
24	Equity