

Firm characteristics and compliance with IFRS 15 mandatory disclosures: Evidence from French firms

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Abstract

Research Question: Do firm characteristics affect compliance with IFRS 15 mandatory disclosures?

Motivation: IFRS 15 became mandatory for annual periods beginning on or after January 1, 2018. It introduces new revenue recognition rules compared to the legacy standards and sets extensive disclosure requirements. Focusing on compliance with IFRS 15 mandatory disclosures allows us to measure and understand firm's disclosures on a specific topic such as revenue which represents a key performance indicator for a given firm.

Idea: This study examines the association between firm characteristics and compliance with IFRS 15 disclosures.

Data: We selected non-financial firms listed on the French stock market index CAC all tradable. 431 firm-year observations operating in different sectors were identified and cover the 2018- 2021 period. Based on a list comprising the disclosures required under IFRS 15, we performed a content analysis of the annual reports to measure compliance level with IFRS 15 mandatory disclosures. An unweighted disclosure index was then computed. We collected data on firm characteristics from DATASTREAM database.

Tools: We developed a multiple regression model with panel data including industry and year fixed effects. We used STATA software to estimate the model.

Findings: Results show that the degree of compliance with IFRS 15 mandatory disclosures varies from one industry to another as well as within the same industry and firms do not fully comply with IFRS15 disclosure requirements. In addition, firm characteristics such as firm size, leverage, profitability, audit firm size, and ownership concentration seem to be key determinants of compliance with IFRS15 mandatory disclosure requirements.

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Contribution: Research on how firms comply with IFRS 15 mandatory disclosures is scarce. To the best of our knowledge, apart from Napier and Stadler (2020), Boujelben and Kobbi-Fakhfakh (2020), Karim and Riya (2022) and Krupova and Partac (2022), no study has investigated this research question. While these studies have provided information on the items complied with, they have advanced descriptive analyses. To the best of our knowledge, this is the pioneer study that measures compliance with IFRS 15 mandatory disclosure requirements and provides empirical evidence on firm-level determinants of compliance levels.

Keywords: IFRS 15; compliance; mandatory; disclosure index; firm characteristics; determinants; France

JEL codes: M41, M42

1. Introduction

Through a joint project, the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) have issued IFRS 15 “*Revenue from Contracts with Customers*.” This standard provides a single source of guidance for all entities to follow when recognizing their revenue from contracts with customers. It supersedes a number of standards such as IAS 11 “*Construction contracts*”, IAS 18 “*Revenue*” and related interpretations such as: IFRIC13 “*Customer loyalty programs*”, IFRIC 15 “*Agreements for the construction of real estate*”, IFRIC 18 “*Transfers of assets from customers*”, and SIC-31 “*Revenue-barter transactions involving advertising services*”.

IFRS 15 became mandatory for annual periods beginning on or after January 1, 2018. It introduces new revenue recognition rules compared to the legacy standards and sets extensive disclosure requirements. Particularly, it requires an entity to disclose quantitative and qualitative information about its contracts with customers, significant judgments and changes in judgments made for those contracts, and any assets recognized from the costs of obtaining or performing a contract with a customer (IFRS 15, §110). The main objective is to provide sufficient information to enable users of financial statements to understand the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers.

Following IFRS 15 issuance, professional partitioners including Big4 auditors and other interested parties have discussed its expected effects (KPMG, 2016; PriceWaterhouseCoopers, 2018; Thornton, 2018; Mattei and Paoloni, 2019; Tutino *et al.*, 2019). Other studies have examined its actual effects on financial statements by analyzing interim and/or annual reports (KPMG, 2018; Financial Reporting Council (FRC), 2018; FRC, 2019; KPMG, 2019; Kobbi-Fakhfakh and Boujelben, 2021).

Nevertheless, these studies have been based on descriptive analyses, have used small samples and have limited their analyses to the first-year adoption of IFRS 15.

A Staff paper published by the IASB on March, 2023, provided an overview of the academic literature relevant to the postimplementation review (PIR) of IFRS 15. It identified two academic papers examining the effects of IFRS 15 on firms' financial statements including Krupova and Partac (2022) and Napier and Stadler (2022). Based on annuals reports of the first-year IFRS 15 implementation, Krupova and Partac (2022) analyzed revenue disclosures of 68 sampled firms from 18 countries, including, Canada, Chine, Australia and Europe. In the same vein, Napier and Stadler (2022) examined the real effects of IFRS 15 implementation based on a review of annual reports and comment letters of entities from STOXX Europe 50 as well as on interviews. Three main conclusions are drawn from these two papers. Firstly, IFRS 15 has an effect on reported numbers that varied across firms. Secondly, around half of the analyzed firms disclosed material effect following IFRS15 implementation. Thirdly, the extent of revenue recognition disclosures increased, but the degree of compliance with mandatory disclosure requirements differs within the industries (IASB, 2023).

The compliance with IFRS 15 disclosures has been examined by two other academic papers which descriptively assessed it, including the study of Boujelben and Kobbi-Fakhfakh (2020) and the study of Karim and Riya (2022). On the one hand, Boujelben and Kobbi-Fakhfakh (2020) investigated the IFRS15 disclosures for a sample of 25 European Union groups operating in the construction and telecommunication sectors. Based on a content analysis of 2018 annual reports, they documented non-full compliance with IFRS 15 mandatory disclosure requirements. The authors concluded that limited disclosures observed for some firms were mainly explained by the absence or the limited impact of the IFRS 15 implementation on financial statements. This conclusion aligns with Tsalavoutas's (2011) findings that a material change in Greek listed companies' restated measures has acted as a driving factor for firms' compliance with IFRS mandatory disclosures. On the other hand, and over the period 2019-2020, Karim and Riya (2022) showed that most firms listed on the Dhaka Stock Exchange in Bangladesh are not fully compliant with IFRS 15 disclosure requirements.

This study investigates the link between firm characteristics and the degree of compliance with IFRS15 mandatory disclosure requirements, in the French context. Drawing on insights from agency and signalling theories, five firm characteristics are considered including firm size, leverage, profitability, audit firm size and ownership concentration.

To achieve our objective, we followed a positive accounting approach. We selected non-financial firms listed on the French stock market index CAC all tradable. 431 firm-year observations operating in different sectors were identified and covering the period from 2018- 2021. Based on hand-collected data from annual reports, we

constructed an unweighted disclosure index to measure the degree of compliance with IFRS 15 mandatory disclosures.

Results show that the degree of compliance with IFRS 15 mandatory disclosure requirements varies from one industry to another as well as within the same industry. In addition, firms do not fully comply with IFRS15 disclosure requirements. Furthermore, firm characteristics such as firm size, leverage, profitability, audit firm size, and ownership concentration seem to be key determinants of compliance with IFRS15 disclosures which confirm the predictions of agency and signalling theories and give new support to prior studies (Owusu-Ansah, 1998; Tsalavoutas, 2011; Glaum *et al.*, 2013; Tsalavoutas *et al.*, 2014; Devalle *et al.*, 2016; Kobbi-Fakhfakh *et al.*, 2018).

This study contributes to the existing literature in three ways. First, it responds to Tsalavoutas *et al.*'s (2020: 19) and Tarca's (2020: 8) call to examine IFRS 15 disclosures. Despite existing literature on compliance with IFRS mandatory disclosure requirements for the post-2005 IFRS period (For a literature review, see Tsalavoutas *et al.*, 2020), research on how firms comply with IFRS 15 mandatory disclosures is scarce. To the best of our knowledge, apart from Napier and Stadler (2020), Boujelben and Kobbi-Fakhfakh (2020), Karim and Riya (2022) and Krupova and Partac (2022), no study has investigated this research question. Furthermore, while these studies have provided information on the items complied with, they have been descriptive. To fill these gaps in the existing literature, this study investigates and measures compliance with IFRS 15 mandatory disclosure requirements. Second, this study concentrates on a select area of IFRS which touches one of the key firm's performance indicators. Focusing on a single standard i.e., IFRS 15 allows us to identify disclosure behavior about a specific topic such as revenue recognition. In this regard, Tsalavoutas *et al.* (2020) argued that findings derived from studies exploring multiple topics when examining compliance with IFRS disclosures should be interpreted with caution. They stated that "*compliance measures aggregated over several standards will disguise the economic consequences or compliance drivers of individual standards*" (Tsalavoutas *et al.*, 2020: 10). Third, prior studies (Napier & Stadler, 2020; Boujelben & Kobbi-Fakhfakh, 2020; Karim & Riya, 2022; Krupova & Partac, 2022) have only assessed compliance with IFRS 15 mandatory disclosures without providing a view of what determines compliance levels. To the best of our knowledge, this is the pioneer study that provides empirical evidence on the firm characteristics associated with compliance levels with IFRS 15 disclosures. It responds to Tarca's (2020: 7) call to investigate the reasons behind non-compliance with IFRS disclosures. It, also, extends the stream of research examining the determinants of compliance with IFRS mandatory disclosures (e.g., Tsalavoutas, 2011; Bova & Pereira, 2012; Glaum *et al.*, 2013; Tsalavoutas *et al.*, 2014, Kobbi-Fakhfakh *et al.*, 2018).

The next section provides theoretical framework on compliance with IFRS

mandatory disclosures. Section 3 presents literature review and hypotheses development. Section 4 outlines the research design. Section 5 presents and discusses the findings of the study. Section 6 concludes.

2. Theoretical framework on compliance with IFRS mandatory disclosures

Prior literature on the determinants of compliance with IFRS mandatory disclosures is scarce and has lacking an established theory of compliance or non-compliance with mandatory disclosures (Glaum *et al.*, 2013). By conducting a meta-analysis, Samaha and Khlif (2016) argued that positive accounting research helps explain compliance with IFRS requirements. Previous researchers have used agency and signalling theories to examine what drives the degree of compliance with IFRS requirements (Fernandes & Lourenço, 2018). Given the implications stemming from these two theories' assumptions, manager would be incentivized to evaluate the "compliance risk" (Adams, 1994). This involves weighing the trade-off between agency costs or signaling effects and the resulting impact on its firm's financial position and performance due to the adoption of IFRS (Tsalavoutas, 2011). Boujelben and Kobbi-Fakhfakh (2020) concluded that variability in the compliance levels with IFRS 15 mandatory disclosures relates to the challenge that a firm faces when implementing this standard. Indeed, more detailed disclosures are mainly observed in financial statements of firms operating in highly touched sector by the introduction of the IFRS 15 i.e., telecommunication (Tutino *et al.*, 2019) compared to their counterparts belonging to medium/highly sensitive sector i.e., construction.

Agency theory was developed since the pioneering works of Alchian and Demsetz (1972), Jensen and Meckling (1976) and Fama (1980). Drawing on insights from this theory, managers may withhold information that would damage their reputation or make their actions subject to public scrutiny (Glaum *et al.*, 2013). Examining compliance with IFRS disclosures, Tsalavoutas (2011) argued that high provision of mandatory disclosures would be expected to minimize agency costs that might arise from financial statements adjustments post-IFRS adoption. Prior studies have showed that agency costs determine the degree of compliance with mandatory disclosures (Owusu-Ansah, 1998; Tsalavoutas, 2011; Glaum *et al.*, 2013; Samaha & Khlif, 2016; Fernandes & Lourenço, 2018).

Signalling theory was developed by Spence (1973) to explain behavior in the labor market. This theory addresses the information asymmetry issue (Akerlof 1970; Morris 1987; Ross 1977). According to Samaha and Khlif (2016) reducing asymmetry occurs through information sharing and compliance with IFRS. Furthermore, compliance with IFRS may signal to market participants that the firm is ready to share a more extensive range of information. Drawing on insights from the signalling theory, Tsalavoutas (2011) argued that firms which experienced substantial positive adjustments post-IFRS implementation might likely increase

their mandatory disclosures. Indeed, managers would seek to signal this favorable shift to claim that their firms were performing well but their performance and financial positions were not presented accurately pre-IFRS adoption.

Based on the foregoing theoretical considerations, we presume that agency and signalling theories help understand compliance with mandatory IFRS 15 disclosure requirements. Furthermore, and building on prior studies examining the determinants of compliance with IFRS mandatory disclosures (Tsalavoutas, 2011; Bova & Pereira, 2012; Glaum *et al.*, 2013; Tsalavoutas *et al.*, 2014; Kobbi-Fakhfakh *et al.*, 2018), we presume that firm characteristics are associated with the degree of compliance with IFRS 15 mandatory disclosures.

3. Literature review and hypotheses development

To identify possible determinants of the degree of compliance with IFRS 15 mandatory disclosures, we refer, following Glaum *et al.* (2013), to studies dealing with disclosure. Based on a literature review, firm characteristics including firm size, leverage, profitability, audit firm size and ownership concentration appear to be key determinants of compliance levels.

3.1 Firm size

According to the agency theory, larger firms are supposed to exhibit reduced information production costs, compared to smaller firms. Therefore, they are more prone to disclose more information to meet stakeholders' information needs (Glaum *et al.* 2013; Kobbi-Fakhfakh *et al.*, 2018). Larger firms may also face potential political costs than smaller firms (Watts & Zimmerman, 1990) and thus are more inclined to comply fully with disclosure requirements.

Most empirical studies have showed that firm size affects positively compliance with IFRS disclosures (Cooke, 1992; Wallace & Naser, 1995; Ali *et al.*, 2004; Owusu-Ansah, 1998; Glaum & Street, 2003; Cascino & Gassen 2015; Santos *et al.* 2014; Kobbi-Fakhfakh *et al.*, 2018).

Based on the foregoing, we predict that larger firms are more compliant with IFRS 15 disclosures than smaller firms, in order to improve the usefulness of information about the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers. Therefore, we formulate hypothesis 1 as follows:

Hypothesis 1 (H1): *Firm size affects positively the degree of compliance with IFRS 15 mandatory disclosures.*

3.2 Leverage

Based on the predictions of agency theory, highly leveraged firms may proxy for potential monitoring costs. Therefore, they have more incentives to disclose

information to mitigate monitoring costs of debt and better meet the informational needs of creditors (Jensen & Meckling, 1976). By contrast, highly leveraged firms are expected to be less transparent, because leverage helps control the free cash flow problem (Jensen, 1986) and then reduce the need for disclosure.

Previous empirical studies have found mixed results on the association between leverage and the extent of disclosure (Wallace *et al.*, 1994; Tsalavoutas *et al.*, 2020; Kobbi-Fakhfakh *et al.*, 2018; Demir & Bhadir, 2014). Therefore, we formulate hypothesis 2 as follows:

Hypothesis 2 (H2): *Leverage affects the degree of compliance with IFRS 15 disclosures.*

3.3 Profitability

Profitability can affect the extent of disclosure, but the direction of this effect is open to debate (Ahmed & Courtis, 1999). Drawing on insights from the agency and signalling theories, managers of profitable firms have incentives to provide more detailed public information to signal good performance and secure their position and compensation, on the one hand, and to avoid external regulation, on the other hand (Watson *et al.*, 2002). By contrast, based on proprietary costs theory, firms are more likely to hide information that may affect their competitive position in the market (Verrechia, 1990).

Empirically, previous studies have yielded mixed results regarding the association between profitability and the extent of disclosure. While some studies have highlighted a positive association (Ali *et al.*, 2004; Verrechia, 2001; Cascino & Gassen, 2015; Lazar & Velte, 2018; Owusu-Ansah, 1998), others have shown a negative association (Street & Gray, 2002; Palmer, 2008; Wallace & Naser, 1995) or have failed to identify any significant association (Kobbi-Fakhfakh *et al.*, 2018; Demir & Bhadir, 2014; Santos *et al.*, 2014). Given the conflicting theoretical predictions and the prior mixed results, we state hypothesis 3 as follows:

Hypothesis 3 (H3): *Profitability affects the degree of compliance with IFRS 15 mandatory disclosures.*

3.4 Audit firm size

Drawing on insights from the agency theory, external auditors play a crucial role in enforcing financial reporting standards (Glaum *et al.*, 2013). According to De Angelo (1981) larger and well-known audit firms have greater financial resources, expertise and deep Knowledge, thus deliver audits of a higher quality level.

Empirical studies have supported the view that being audited by Big 4 auditors incentivizes firms to provide high quality of financial reporting and to comply with IFRS mandatory disclosure requirements (Glaum & Street, 2003; Cascino & Gassen, 2015; Kobbi-Fakhfakh *et al.*, 2018; Demir & Bhadir, 2014; Tsalavoutas,

2011; Santos *et al.*, 2014). Particularly, by examining compliance with a subset of IAS disclosures, Street and Gray (2001) found a significant positive association between compliance and being audited by a Big 5 firm. Building upon the preceding arguments, we state hypothesis 4 as follows:

Hypothesis 4 (H4): *Audit firm size affects positively the degree of compliance with IFRS 15 disclosures.*

3.5 Ownership concentration

Information asymmetry and agency costs arise when firm's ownership structure is more dispersed (Jensen & Meckling, 1976). To address these issues, firms with widely dispersed ownership are more prone to disclose more information. Glaum *et al.* (2013: 172) stated that "*an inverted U-shaped relationship may exist between ownership concentration and disclosure quality and hence compliance with disclosure requirements*". Indeed, larger shareholders who hold a significant proportion of company's shares without fully controlling it, have a power to effectively monitor management, and hence enhance financial reporting quality. But when a single shareholder holds the majority of a company's shares, he has no incentive to provide information to outsiders (Glaum *et al.*, 2013).

Several studies have empirically examined the relationship between ownership concentration and financial disclosure quality, but the results are mixed (Owusu-Ansah, 1998; Glaum *et al.*, 2013; Kobbi-Fakhfakh, 2017). Particularly, Glaum *et al.* (2013) found that firms with a moderate level of ownership concentration exhibit the highest compliance level with IFRS 3- and IAS 36-required disclosures. Based on the aforementioned discussion and given the mixed results on the association between ownership structure and disclosure, we formulate hypothesis 5 as follows:

Hypothesis 5 (H5): *ownership concentration affects the degree of compliance with IFRS 15 mandatory disclosures.*

4. Methodology

4.1 Sample selection

To test our hypotheses, we selected non-financial firms listed on the French stock market index CAC all tradable. 236 listed firms active in the DATASTREAM database and operating in different sectors were initially identified. From these 236 firms we excluded those whose start dates indicated in the DATASTREAM are within our study period, firms that don't use calendar year and firms not assigned to any sector. We also removed firms whose annuals reports are not available or market is not France.

These above selection criteria yielded a sample of 124 firms i.e., 496 firm-year observations. Using this sample, a content analysis of annual reports spanning the

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entire study period 2018-2021 was performed. The first-time mandatory adoption of IFRS 15 justifies the choice of the starting point of our study period, namely 2018.

Out of the 496 firm-year observations, we removed 8 firm-year observations related to “ABIVAX” and “CIBOX INTERACTIVE” firms because they prepare their annual reports according to the French GAAP. Furthermore, we excluded one firm-year observation related the “SOLUTION 30” firm which started applying IFRS in 2019. Lastly, we eliminated missing data from any of the variables needed.

Table 1 outlines the sample selection procedure. The final sample includes a total of 431 firm-year observations (Table 1, Panel A). Panel B and Panel C of table 1 display, respectively, the sample split by year and by industry.

Table 1: Summary of the sample selection process and sample characteristics

Panel A: Sample selection procedure		
Non-financial firms listed on the French stock exchange CAC all tradable and active in the DATASTREAM database.		236
<i>Excluding firms:</i>		
✓ Whose start dates are within the study period		(14)
✓ Without calendar year		(42)
✓ Because annual reports unavailability		(20)
✓ Whose market is not French		(2)
✓ Not assigned to any sector		(34)
Number of firms in the initial sample		124
Total initial firm-year observations		496
<i>Excluding firm-year observations due to:</i>		
✓ Non adoption of IFRS 15 in 2018		(9)
✓ Missing values		(56)
Total final firm-year observations		431
Panel B: Distribution of firm-year observations by year		
Year	Number of observations	Percentage
2018	113	26.22
2019	113	26.22
2020	113	26.22
2021	92	21.35
TOTAL	431	100.00
Panel C: Distribution of firm-year observations by industry		
Industry type (ICB classification)	Number of observations	Percentage
Energy	16	3.71
Basic Materials	30	6.96
Industrials	83	19.26
Consumer staples	18	4.18
Health Care	88	20.42
Consumer Discretionary	96	22.27
Telecommunications	4	0.93
Utilities	20	4.64
Technology	76	17.63

TOTAL	431	100.00
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4.2 Model specification

To test the research hypotheses, we performed a regression model including industry and year fixed effects. It is as follows:

$$DISC_{i,t} = \beta_0 + \beta_1(FSIZE)_{i,t} + \beta_2(LEV)_{i,t} + \beta_3(ROA)_{i,t} + \beta_4(BIG4)_{i,t} + \beta_5(CONC)_{i,t} + \beta_6(COVID19)_{i,t} + \sum \beta_n INDUSTRY_{i,t} + \sum \beta_k YEAR_{i,t} + \varepsilon_{i,t}$$

DISC is an unweighted disclosure index that measures the degree of compliance with IFRS 15 mandatory disclosures. The following section describes with detail the DISC index construction.

To test hypotheses H1 to H5, we included in the regression model firm characteristics such as firm size (**FSIZE**), leverage (**LEV**), profitability (**ROA**), audit firm size (**BIG4**) and ownership concentration (**CONC**).

In addition, recent publications have discussed the impact of the COVID 19 pandemic on revenue recognition under IFRS 15, including Usurelu and Dutescu (2021). Thus, to control for the effect of the COVID 19 pandemic on the degree of compliance with IFRS 15 mandatory disclosures, we included in the regression model a dummy variable (**COVID19**) which takes 1 for 2020-2021 firm-year observations and 0 otherwise.

4.3 Variables measurement

4.3.1 Dependent variable

To measure the degree of compliance with IFRS 15 mandatory disclosure requirements, we constructed an unweighted disclosure index DISC. Based on a close review of IFRS 15 and by referring to the prior study of Boujelben and Kobbi-Fakhfakh (2020), we developed a list of items comprising all required disclosures for revenue recognition (See Appendix).

More specifically, our list assesses compliance with disclosures required by IFRS 15 §110 and associated with: contracts with customers, contract balances, performance obligations, significant judgments in the application of the standard and assets recognized from the costs to obtain or fulfil a contract with a customer.

Using the publicly available annual reports of the sampled firms, we then carried out a comprehensive content analysis of consolidated financial statements footnotes to construct DISC.

For each firm, each item from the list was coded as disclosed (1), not disclosed (0) or not applicable (NA). This approach is consistent with Cooke (1989). We acknowledge that coding is based in part on judgment. Nevertheless, to minimize coding errors, the content analysis was performed twice by the two co-authors. For

each annual report, any coding discrepancies were discussed and completely resolved.

Prior studies have used either weighted (Glaum et al, 2013; Boujelben and Kobbi-Fakhfakh, 2020) or unweighted indices (Inchausti, 1997; Galani *et al.*, 2011). However, studies using both approaches (Hodgdon *et al.*, 2008) have shown similar results. Following the most empirical studies, we used the weighted approach to construct DISC index.

DISC was computed as the actual score of the firm ‘i’ for the year ‘t’ (AS_{it}) divided by the theoretical score of the firm ‘i’ for the year ‘t’ (TS_{it}). The AS_{it} represents the number of items effectively disclosed by the firm. The TS_{it} is the maximum number of items that the firm should disclose. It is specific to each firm. It corresponds to the maximum score a firm could obtain if all the information we can expect from it were published in its annual report. This procedure avoids penalizing firms for items that are not applicable for them. One example is item 12 in our IFRS 15 checklist (See Appendix) which is not required to be disclosed whether the timing of satisfaction of all firm’s performance obligations is “point in time”.

4.3.2 Independent variables

Table 2 summarizes the measurements of all independent variables. We collected data on firm characteristics from DATASTREAM database.

Table 2: Independent variables measurement		
ACRONYMS	DEFINITIONS	MEASURES
FSIZE	Firm size	Natural logarithm of total assets
LEV	Leverage	Total debt/Total assets
ROA	Profitability	Net income/Total assets
BIG4	Audit firm size	1 (0 otherwise) if the firm is audited by a top four audit firm
CONC	Ownership concentration	Percentage of closely held shares
COVID 19	COVID 19 period	1 (0 otherwise) for 2020-2021 firm-year observations.
INDUSTRY	Industry fixed effects	Dummies variables to control for industry type
YEAR	Year fixed effects	Dummies variables to control for year

5. Results and discussion

5.1 Descriptive statistics

To mitigate the undesirable effect of outliers, all continuous independent variables are winsorized at the 1st and 99th percentiles. Table 3 summarizes the descriptive statistics for the dependent variable (DISC) by industry type.

Table 3: Summary descriptive statistics for DISC index

Industry type (ICB classification)	Mean	Median	SD	Min	Max
Energy	0.317	0.289	0.020	0.250	0.300
Basic Materials	0.258	0.263	0.045	0.105	0.316
Industrials	0.295	0.294	0.097	0.050	0.458
Consumer staples	0.284	0.263	0.033	0.250	0.333
Health Care	0.273	0.293	0.095	0.050	0.476
Consumer Discretionary	0.314	0.293	0.143	0.095	0.632
Telecommunications	0.632	0.632	0	0.632	0.632
Utilities	0.224	0.200	0.043	0.190	0.300
Technology	0.317	0.300	0.062	0.190	0.476
TOTAL	0.295	0.286	0.104	0.05	0.632

Note. This table reports the descriptive statistics for DISC index using 431 firm-year observations from 2018 to 2021. DISC index was winsorized at the 1st and 99th percentiles.

Table 3 shows that the degree of compliance with IFRS 15 mandatory disclosures varies from one industry to another as well as within the same industry. It shows that DISC index varies between a minimum of 0.05 and a maximum of 0.632, with a mean (median) of 0.295 (0.286). These values indicate that there is a lack of compliance with IFRS 15 mandatory disclosures. The lowest value of DISC index (0.050) is related to the “ABIONIX PHARMA” firm operating in the “Health care” sector and to the “SYNERGIE” firm belonging to the “Industrials” sector. Regarding the highest value of DISC index (0.632), it is related to the “ORANGE” firm operating in the telecommunication sector and to the “KERING” firm belonging to the “Consumer Discretionary” sector. These results confirm Big4’s expectations regarding the disparity in the expected effects of IFRS 15 adoption across different sectors (Tutino *et al.*, 2019).

Table 4 summarizes the descriptive statistics of the independent variables included in the regression model. These variables include firm size (FSIZE), leverage (LEV), profitability (ROA), audit firm size (BIG4), ownership concentration (CONC) and the COVID 19 pandemic (COVID 19).

Table 4: Summary descriptive statistics for independent variables

VARIABLES	N	Mean	Median	SD	Minimum	Maximum
FSIZE	431	14.416	14.216	2.520	9.239	19.351
LEV	431	0.292	0.281	0.172	0	0.725
ROA	431	-0.056	2.83	14.014	-59.15	34.8
CONC	431	0.396	0.398	0.250	0	0.896
BIG 4	431	0.842	1	0.365	0	1
COVID 19	431	0.476	0	0.500	0	1

Note. This Table reports the descriptive statistics for all the independent variables using 431

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firm-year observations from 2018 to 2021. All continuous variables are winsorized at the 1st and 99th percentiles

To test for multicollinearity, Table 5 presents the correlation matrix for all the independent variables included in the regression model. The Pearson correlations are in the bottom left and the Spearman correlations are in the top right. The matrix shows that the magnitude and direction of both parametric and non-parametric coefficients are very similar.

In the previous literature, there is no widely accepted threshold for determining the presence of a serious multicollinearity problem between independent variables. However, the general rule of thumb is that the absolute value of the correlation coefficient should not exceed 0.8 for Kennedy (2008) and 0.75 for Green (1978). The highest correlation in the data used in this study is 0.478. Therefore, all correlations fall within the acceptable range and then are quite low.

Table 5: Correlation matrix

	1	2	3	4	5	6
1. FSIZE	1	0.245***	0.220***	0.127***	-0.212**	0.079
2. LEV	0.204***	1	-0.219***	0.039	-0.187***	0.105**
3. ROA	0.369***	-0.041	1	-0.118**	0.099**	-0.057
4. BIG4	0.126***	0.032	-0.113**	1	-0.209***	0.014
5. CONC	-0.202***	-0.183***	0.151***	-0.215***	1	-0.028
6. COVID19	0.078	0.099**	-0.009	0.017	-0.03	1

Note. This Table reports the correlation matrix using 431 firm-year observations from 2018 to 2021. All continuous variables are winsorized at the 1st and 99th percentiles. The bottom left half of the table contains Pearson's parametric correlation coefficients, while the upper right half of the table shows Spearman's non-parametric correlation coefficients. *** and ** denote significant at the 1% and 5% levels, respectively.

5.2 Empirical results and discussion

This study aims to test the association between firm characteristics and compliance with IFRS 15 mandatory disclosures. Based on a literature review, we formulated five hypotheses related to firm size (FSIZE), leverage (LEV), profitability (ROA), audit firm size (BIG4) and ownership concentration (CONC).

To test the research hypotheses, we estimated linear regression model with panel data. Several econometric tests were performed, including tests of specification, heteroscedasticity and autocorrelation. A “Breusch-Pagan test” for heteroscedasticity and a “Wooldridge test” for autocorrelation indicate the presence of both problems. To achieve robust estimations, we estimated our model using “Feasible Generalized Least Square” (FGLS).

Table 6 reports the main results. It shows that the model has a significant explanatory power (*Wald Chi2* test is significant at the 1% level).

Table 6: Results of regression model estimation

VARIABLES	DISC		
	Coef.	Z statistic	P-value
FSIZE	0.006	11.69***	0.000
LEV	-0.019	-3.20***	0.001
ROA	-0.000	-2.40**	0.016
BIG4	0.024	5.00***	0.000
CONC	0.015	3.53***	0.000
COVID19	0.000	0.01	0.991
Intercept	0.207	22.45***	0.000
INDUSTRY		YES	
YEAR		YES	
Wald chi2		36067.39	
Prob>chi2		0.000	
Adjusted R ² (%)		21.55	
Observations		431	

Note. This table reports the results of regression model FGLS estimation using 431 firm-year observations from 2018 to 2021. All continuous variables are winsorized at the 1st and 99th percentiles. *** and ** denote significant at the 1% and 5% levels, respectively.

With respect to the firm size variable (FSIZE), Table 6 shows that the coefficient is positively and statistically significant at the 1% level ($\beta_1=0.006$, $z\text{-stat}=11.69$, $p<0.01$). This result indicates that larger firms are more compliant with IFRS 15 mandatory disclosures than smaller firms. It confirms our hypothesis 1 (H1) and supports prior results that firm size determines compliance with IFRS mandatory disclosures (Cooke, 1992; Wallace & Naser, 1995; Ali *et al.*, 2004; Owusu-Ansah, 1998; Glaum & Street, 2003; Cascino & Gassen 2015; Santos *et al.* 2014; Kobbi-

Fakhfakh *et al.*, 2018). This finding confirms agency and signalling theories predictions. It suggests that larger firms are more likely to comply fully with IFRS 15 mandatory disclosures than smaller firms in order to reduce information asymmetry and agency costs. They, also, are willing to provide the IFRS 15 required information to enable users of financial statements to understand the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers. Furthermore, larger firms tend to be more compliant with IFRS disclosures to avoid political pressure imposed by the government and other stakeholders than smaller firms.

For leverage variable (LEV), Table 6 shows a negative and statistically significant coefficient at the 1% level ($\beta_2 = -0.019$, $z\text{-stat} = -3.20$, $p < 0.01$). This result indicates that more leveraged firms are less compliant with IFRS 15 mandatory disclosures than less leveraged firms. It confirms our hypothesis 2 (H2) and gives new support to prior findings (Demir & Bhadir, 2014; Kobbi-Fakhfakh *et al.*, 2018). This finding corroborates the agency theory predictions (Jensen, 1986) and offers new empirical support for the Wallace *et al.* (1994) arguing that in highly leveraged firms, the 'free cash flow' problem could be mitigated; thus, firms do not have any incentive to disclose more information.

Regarding the profitability variable (ROA), Table 6 shows a negative and statistically significant coefficient at the 5% level ($\beta_3 = -0.000$, $z\text{-stat} = -2.40$, $p < 0.05$). This result confirms our hypothesis 3 (H3) and suggests that firm's profitability has a negative impact on compliance with IFRS 15 mandatory disclosures. This finding gives new support to prior studies (Street & Gray, 2002; Palmer, 2008). It, also, corroborates the proprietary cost theory predictions that profitable firms are reluctant to provide more information that may affect their competitive position in a market (Verrechia, 1990). Indeed, managers of profitable firms tend to hide profitability from competitors by reducing the amount of information disclosed.

Concerning the audit firm size (BIG4), Table 6 shows that the coefficient is positive and statistically significant at the 1% level ($\beta_4 = 0.024$, $z\text{-stat} = 5.00$, $p < 0.01$). This result indicates that firms audited by a Big4 auditor are more compliant with IFRS 15 mandatory disclosures than other firms, which confirms our hypothesis 4 (H4). It, also, corroborates prior findings that documented a positive association between audit quality and compliance with IFRS disclosures (Glaum & Street, 2003; Cascino & Gassen, 2015; Kobbi-Fakhfakh *et al.*, 2018; Demir & Bhadir, 2014; Tsalavoutas, 2011; Santos *et al.*, 2014). This finding supports the agency theory predictions presuming that external auditors play a crucial role in monitoring managers in order to offer high quality of financial reporting.

With regard to ownership concentration (CONC), Table 6 shows a positive and statistically significant coefficient at the 1% level ($\beta_5 = 0.015$, $z\text{-stat} = 3.53$, $p < 0.01$). This result indicates that ownership concentration seems to be an explanatory factor of compliance with IFRS 15 mandatory disclosures, which confirms our hypothesis

5 (H5). Nevertheless, the existence of a positive association may be explained by the presence of larger shareholders who effectively monitor managers and incentivize them to comply fully with IFRS 15 disclosures. This argument supports the Glaum et al.'s (2013) view that supposes the presence of an inverted U-shaped relationship between ownership and compliance with disclosure requirements. An in-depth analysis of ownership structure of our sampled firms may help us understand well this finding. Finally, Table 6 shows that the COVID19 pandemic (COVID19) did not affect compliance with IFRS15 mandatory disclosures in the French context.

6. Conclusion

This study investigated the link between firm characteristics and the degree of compliance with IFRS15 mandatory disclosure requirements. To achieve this objective, we followed a hypothetical-deductive approach. Drawing on insights from agency and signalling theories and based on a literature review, we tested five hypotheses related to firm size, leverage, profitability, audit firm size and ownership concentration

Using on a sample of 431 firm-year observations over a period from 2018 to 2021, the results showed that there is a wide range of compliance levels between industries, as well as within the same industry. The highest value of the level of compliance with IFRS 15 mandatory disclosures is 0.632 which was observed in two firms which suggests non-compliance. In addition, firm characteristics such as firm size, leverage, profitability, audit firm size and ownership concentration seem to be key determinants of compliance with IFRS 15 disclosures which gives new support to prior results (Tsalavoutas *et al.*, 2020; Fernandes & Lourenço, 2018) and confirms the predictions of agency and signaling theories.

The research findings should be of concern to accounting standard setters and regulators and have important public policy implications. Indeed, companies need to continually assess the impact of IFRS 15 as they gain experience in applying the standard, and properly analyze topics on customer contracts, significant judgments made and contract costs. In addition, standards setter may inquire whether the failure to fully comply with IFRS 15 mandatory disclosures relates to unclear and ambiguous standard or to the its application. Furthermore, the non-compliance found requires the implementation of mechanisms, including corporate governance, able to enforce compliance with IFRS disclosure requirements.

The results of this study should be interpreted with caution given the relatively small sample size which limited their generalizability. Finally, this research could be extended in the future to a larger number of sectors, and over a longer period of time, in order to provide a more comprehensive overview of the level of compliance with IFRS 15 mandatory disclosures. A cross-country analysis of the degree of compliance could also be informative. Furthermore, testing the effect of corporate

governance on the degree of compliance with IFRS 15 disclosures could provide some important insights to explain firms' disclosure behavior about revenue recognition.

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**Appendix: List of items used to measure compliance
with IFRS 15 mandatory disclosures**

Contracts with customers

- ✓ Revenue recognized from contracts with customers disclosed separately from other sources of revenue
- ✓ Impairment losses recognized on any contract assets arising from an entity's contracts with customers disclosed separately from impairment losses from other contracts
- ✓ Disaggregation of revenue after IFRS 15 adoption
- ✓ The opening and closing balances of contract assets and contract liabilities
- ✓ An explanation of how the timing of satisfaction of the performance obligations relates to the typical timing of payment and the effect that those factors have on the contract asset and the contract liability balances.
- ✓ An explanation of the significant changes in the contract asset and the contract liability balances during the reporting period
- ✓ Performance obligations description
- ✓ The aggregate amount of the transaction price allocated to the performance obligations that are unsatisfied (or partially unsatisfied) as of the end of the reporting period
- ✓ A quantitative or qualitative explanation of when the entity expects to recognize as revenue the amount of unsatisfied performance obligations as of the end of the reporting period
- ✓ Practical expedient about the unsatisfied performance obligations as of the end of the reporting period

Significant judgements made in applying IFRS 15

- ✓ The timing of satisfaction of performance obligations (Point in time / over time / point in time and over time)
- ✓ The methods used to recognize revenue output/input methods
- ✓ An explanation of why the methods used provide a faithful depiction of the transfer of goods or services, when the timing is "over time"
- ✓ An explanation of why the performance obligation is satisfied at "a point in time"
- ✓ Determining the transaction price and the amounts allocated to performance obligations
- ✓ Allocation of the transaction price
- ✓ Variable consideration
- ✓ Measuring obligations for returns, refunds and other similar obligations

Assets recognized from the costs to obtain or fulfil a contract with a customer

- ✓ Costs to obtain a contract and costs to fulfil a contract
 - ✓ The method of amortization
 - ✓ Closing balances of contract costs by main category
 - ✓ The amount of amortization
 - ✓ Practical expedient about the incremental costs of obtaining a contract
-