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A Systematic Review Exploring the Effect and Risk Mitigation Methods Surrounding the New IFRS 16

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Abstract

The new IFRS 16 accounting standard represents a shift in regulations. The new standard took effect in January of 2019 and defines a non-cancelable period within a lease term. The new IFRS 16 standards essentially impact lessees to a greater degree than lessors. A gap in the literature exists regarding how the new accounting standard will influence businesses with respect to accounting of leases. Specifically, if leases have a non-cancellable period, it is unclear how it will affect businesses that, in fact, can cancel their leases at will. As such it is important to determine how businesses will account for leases with this change. By increasing clarity in this area, business managers can best make financially apt decisions and adopt regulations. In order to shed light on what businesses will be most impacted by the new IFRS 16, the present study is guided by the following objectives: 1) To determine impact of implementation of IFRS 16 2) To assess options to mitigate potential impacts 3) To gauge benefits of IT-tools as a method of IFRS 16 implementation management. Using a systematic literature review, the present study conducted a search of relevant search terms from four scholarly databases in addition to Google, considering empirical and business news literature published after 2010. Findings include: 1) High-profile businesses were deemed to be most impacted 2) IT tools are available but primarily relate to the effective and accurate practice of accounting methods rather than impacts of regulation. Some businesses use accounting methods such as smoothing to create more advantageous reports 3) Software and IT tools can aid businesses in reducing administrative and human labor costs, along with other benefits. These findings alert company managers with high-value leases of the potential impacts of management tools available for the new IFRS 16 standard.

Keywords: *IFRS 16, standards, management, finance, IT*

1. Introduction

New updates to IFRS regulations have resulted in the change from the previous IFRS 17 standard to a new IFRS 16 standard, which took effect January 1st of 2019. New IFRS 16 regulations have been a discussion of focus among financial institutions and private sector businesses alike. These discussions have examined how IFRS 16 updated regulations will impact businesses' financial health and accounting processes. The IFRS 16 is an accounting standard that characterizes and defines the non-cancelable period within a lease term. During the non-cancellable period, the lessee can use underlying assets and has no right to terminate the lease. This period is one where the entity in question is reasonably certain to exercise the option not to terminate a lease agreement.

The IFRS 16 improves comparability among corporations leasing and corporations borrowing in order to buy. Under IFRS 16 regulations, a lease constitutes a contract, which communicates participants' right to leverage a specific asset for a defined time period in exchange for consideration (PWC, 2019; IFRS Box, 2018; Silvia, 2016). In light of the regulatory discrepancies between the prior IFRS 17 and new IFRS 16, the present study seeks to understand, through systematic review, how the new IFRS 16 will specifically impact businesses and which businesses will be most affected. Following a background introductory discussion of the functional and structural nature of the IFRS 16, the present study documents the findings of a qualitative systematic literature review conducted in order to clarify the impact of the new IFRS 16 on private sector businesses.

1.1 Background Functionality of IFRS standards

The IFRS 16 governs and regulates how organizations report lease agreements between lessors and lessees, providing the right to control the use of a leased asset for a set time period, in exchange for a monetary consideration. IFRS 16 regulations do not apply, however, to low priced items and lease terms under 12 months. The predominant regulatory change between prior IFRS 17 standards and current IFRS 16 standards relates to the fact that lessees now do not classify leases into the finance and operating category anymore. Rather under the new standard, leases have no classification and leases must be accounted for all in the same manner except for two optimal exemptions. Furthermore, at the commencement of a lease, under the new IFRS 16, the lessee recognizes the right of use of the asset and lease.

Even during lease operation, the lessee always recognizes some asset— which constitutes the primary change from the prior IFRS 17 standard. Under the prior standard, all payments were recognized for operating leases under profit and loss statements (Silvia, 2016). Furthermore, accounting by the lessee at lease commencement encompasses the right of use of the asset and the lease liability. The lease liability is calculated as payments that are not paid by the commencement date, less the interest rate implicit in the lease. The right to use of the asset is calculated as the lease liability plus lease payments (incentives) on or before the commencement date, plus initial direct costs and estimates of dismantling costs. Leases are accounted for based on classification, and as noted, classification is made on a case by case basis since leases no longer are provided their own classification. From a lessor standpoint, leases may be classified as finance leases or operating leases, based on whether rewards and risks of the lease are transferred to the lessee. Additionally, as a finance provider, the lessor recognizes a lease receivable as a net investment in a lease and the total of fixed and variable payments that can be expected to be payable under residual payments (PWC, 2019; IFRS Box, 2018; Silvia, 2016).

As Silvia (2016) explains in summary, what may happen as a result of this new financial standard is that the lessee and the lessor can realize a financial asset, as compared to the previous system where only the lessor would realize the financial asset. For instance, as a lessor accounts for an operating lease, that operating lease will be calculated as lease payments which are equal to revenue on a straight-line basis, plus continual recognition of the asset. In some cases, a seller or lessor becomes a lessee in situations of a buyback.

These basic recognitions of functional changes lead one to question how the new standard will impact businesses, and in what way, especially once total direct and indirect financial impacts of the new accounting and regulatory standards are realized. These standards may result in organizations choosing to purchase land rather than lease it, as they see themselves losing the accounting benefits that leasing previously provided (Hazar, 2019). As PWC (2019) notes, this question is imperative to small and large businesses alike considering that the new IFRS 16 will affect almost every company, since nearly all companies use rentals and leasing in some way to access assets. Furthermore, PWC (2019) explains that the IFRS 16, in contrast to the prior IFRS 17 eliminates all off-balance sheets that account for lessees.

The new standard re-characterizes an array of commonly used financial metrics, which will increase comparability (as an advantage to many businesses), while also impacting credit ratings, borrowing costs and thus stakeholder's perceptions of borrowers— a potential negative impact on many businesses. More specifically, changes to commonly used financial ratios such as interest cover, EBIT, EBITDA, net income, ROCE, and operating cash flows can impact costs and credit, which could change business behavior and subsequently may cause businesses to re-evaluate leasing versus buying decisions. Because balance sheets will increase, this means gearing ratios will also heighten, while capital ratios will fall. This means corporations leasing high dollar assets may be most impacted (PWC, 2019).

According to IFRS Box (2018), the simplified objective and rationale of the new regulation are to disable lessees from hiding or non-revealing various lease-born liabilities. This specifically related to operating and non-cancellable leases. In contrast, the new IFRS 16 regulation mandates that lessees reveal and document all leases within their financial statements directly, rather than covering them up within indirect notes on the financial statements. In this way, accounting standards for lessors have gone mostly unchanged by the new IFRS 16 standard, while for lessees they have changed more dramatically impacting lessees' income, balance and cash flow statements. Furthermore, leases are not treated differently under the new standard when accounting for federal income taxes. In other words, the tax accounting method does not change. However, the new IIFRS 16 may still impact tax accounting indirectly since increases in liabilities or assets could impact financial statements and thus change the amounts of taxes owed (LeaseAccounting.com, 2017).

1.2 Problem Statement

IFRS 16 may cause issues with management, financial buying versus leasing decision-making, and clear record-keeping. In particular, businesses that do not fully understand the impact and implications of the new IFRS 16 will likely improperly report leases. One type of company that may be impacted is retailers who lease space. They will likely encounter issues in correctly accounting for variable payments linked to index rates or in separating non-lease and lease-related financial payment factors (Marwood, 2017). Thus, there is potential for different interpretations of the rule, as is true of all changes to IFRS. However, this an important difference in interpretation because the practice will impact various metrics to evaluate the financial health of companies. Thus, the research question here is how this new standard will affect different businesses. Furthermore, it will be important to evaluate if these new standards will affect industries in different ways. Although it is clear that the only companies impacted by this change are ones that lease high-value assets, it is unclear whether, for example, large retailers will be affected differently from airline companies. Gaining greater clarity of how businesses will be impacted will aid these businesses in making more advantageous financial decisions and better coping with the IFRS 16 regulatory changes. Additionally, this research will evaluate the aspects of this charge that will most impact businesses. It is anticipated that potential impacts my include but not be limited to changed HR administrative-accounting costs, new regulatory training costs, changes in taxes owed for businesses previously hiding assets and that retailers and corporations who area high dollar lessees may be most impacted (IFRS Box, 2018; LeaseAccounting.com, 2017; Marwood, 2017).

2. Objectives

The objective of the present study is to inform the following three research questions:

1) What impact does the implementation of IFRS 16 have on businesses and of the businesses that are affected, businesses in which sectors will be most affected?

2) What options are available to mitigate potential impacts?

3) Is the use of IT-tools as a method of IIIFRS 16 implementation management beneficial to businesses?

3. Proposition

Based off business analyst comments and empirical literature reviewed within the introductory background of this study (IFRS Box, 2018; LeaseAccounting.com, 2017; Marwood, 2017; Silvia, 2016), the present study speculates the following proposition in response to the aforementioned research questions:

1) The new IFRS 16 may change taxes owed for lessees as a result of indirect impacts of lease accounting upon financial assets and liabilities documented, as well as imposing training and administrative challenges in implementing and correctly abiding by the new IFRS 16 standard. The new IFRS 16 may also cause behavioral changes in buying versus leasing decisions made by affected companies. Companies with high-dollar leases (lessees) and retail businesses are anticipated to be most affected.

2) IT software accounting systems and in-house training seminars are speculated to provide potential means of minimizing the negative impacts of these aforementioned changes.

3) It is speculated that the use of such IT tools will be beneficial to most impacted businesses.

4. Materials and Methods

The present qualitative study employs a systematic literature review in order to inform the three research questions. For the present study, a qualitative approach is most appropriate considering that qualitative methodologies seek to answer the *how* and *why* natured questions of research with explanatory answers that cannot otherwise be answered using *yes* or *no* answers or quantitative, numerical information. Because the research questions of this study seek to understand how the new IFRS 16 standard impacts businesses, what businesses are affected, what IT measures could be used to manage these impacts and whether or not such IT tools are beneficial, such inquiries cannot be informed using numeric data. Hence, a qualitative method that allows for in-depth explanatory data informing the study's objectives is most appropriate (Creswell, 2013). Systematic literature reviews have been used extensively through the interpretation of primary literature (SEDL, 2015), as the present study intends to do. Systematic literature reviews take an orderly, methodological approach to evaluating literature based on selection criteria and interpreting the results of literature to specifically inform the research questions and objectives. In other words, systematic literature reviews thematically interpret literature and can be used in qualitative and/or quantitative studies (University of Sydney, 2019).

Since the present study's systematic literature review is employed in a qualitative context, data collected from literature meeting selection criteria will include data that is explanatory in nature, including observational data, interview data, and interpretive data such as participant accounts of working experiences, accounting experiences and some numerical data regarding changes in businesses' financial statements. Though some numerical data will be considered, its interpretation will be explanatory in nature, as financial data will be used to explain and inform the nature of how new IFRS 16 standards impact businesses at large. Following the present study's systematic literature review, the present study will discuss and synthesize findings in order to fill gaps in understanding and contribute to existing literature informing business managers of how IFRS 16 standards will impact operations and potential measures that may be effectively used to manage such impacts. Systematic literature reviews have been used extensively in accounting research such as that of Northcott and Doolin (2008).

In order to conduct the systematic literature review and extract data relevant to the research objectives, eligibility criteria were first developed. The present study's eligibility criteria were applied to literature searches. Inclusion criteria included the following: 1) Literature must be either from a financial consulting business, a business or financial news publication, a peer-reviewed academic book, publication or journal article, 2) Literature must be published during 2010 or after, 3) Literature must be primary or peer-reviewed secondary evidence, 4) Literature may relate to global finance and is not excluded on the basis of place of publication. Exclusion criteria included the following: 1) Literature from non-empirical or peer-reviewed blogs was excluded, 2) Literature published before 2010 was excluded, except for that relating to any applicable theoretical frameworks. The following table 1 summarizes the inclusion and exclusion criteria:

Table 1 Inclusion and Exclusion Criteria for Systematic Literature Review

Inclusion Criteria
1) Sources: Financial consulting, business and finance news, peer-reviewed academic publications and journals
2) Published during or after 2010
3) Primary or peer-reviewed secondary evidence
4) Global
Exclusion Criteria
1) Non-empirical, non-peer reviewed blogs
2) Published before 2010 except for theory
Keywords: IFRS 16 Changes, Impact of IFRS 16 changes, Sectors most affected by IFRS 16 changes, Leasing accounting

The following search terms were employed through databases including Google Scholar, Jstor, ProQuest and EBSCO (Google was also searched or relevant business news publications): *IFRS 16 Changes, Impact of IFRS 16 changes, Sectors most affected by IFRS 16 changes, Leasing accounting*. In total, approximately 17,000 results populated search fields, averaged across all four databases. When search criteria were narrowed to 2010 and beyond, search results reduced to an average of 15,000. In total, 80 literature sources were included within the present study on the basis of relevance to the research questions and currency, as revealed by the order in which they appeared in the search results, as a method of selection omitting the potential for researcher selection and bias. 80 is a substantial number for inclusion in a literature review, yet in order to minimize labor incurred by the researcher and allow for a timely, cost-effective study, the review was limited to 80 sources. These included regulatory and government publications, consulting, business and financial news publications, best practice and compliance documents, and journal publications. Literature was screened on the basis of the above inclusion and exclusion criteria before selection and inclusion. Studies published more recently, with more relevance to the research questions and published as academic journal articles were given preference over those published by news sources. Data were extracted from each piece of literature selected after a thorough review of the literature and based on the specific data within each piece of literature that most directly related to and informed each guiding research objective.

Consequently, the following results section presents data not according to sequential author, but according to subsections that relate to the present study's research objectives. In this way, data was synthesized and gathered with the guiding research questions in mind. For instance, key terms from objective (RQ) one directed the researcher's review of literature, during which the researcher scanned and screened literature with the objective in mind of understanding *how the IFRS 16 impacts businesses* and *what businesses the IFRS 16 impacts most.* Thus, the guiding terms included *how the IFRS 16 impacts* and *what businesses.* This allowed the researcher to extract relevant data from each study and compile/synthesize that relevant data into each of the subsections within the results. A similar approach was taken in order to inform the second two research questions, using guiding terms such as *IFRS 16 IT management tools* (RQ2) and *beneficial* (RQ3). The researcher used an excel chart to categorize and organize data excerpts from literature according to author, and according to each of the three objectives.

Hence, the materials required to conduct the present study simply included: 1) internet access to Google Scholar, Google, EBSCO, ProQuest and JSTOR, 2) a computer or mobile device, 3) MS Excel (for organizational purposes), and 4) MS word for the sake of organizing and synthesizing data. In this way, the present literature review simply collected, compiled and synthesized data informing the three research objectives from sources deemed as reliable, current and credible. In obtaining data from reputable sources, the present study's attempt was to provide a summary of unbiased, reliable, trustworthy data that would guide financial managers in decision making, IFRS 16 implementation, and management.

One primary limitation of the present study is characterized by the number of sources included. Because only 80 out of an average of 15,000 or more available sources were included, the study provides likely conclusions informing the objectives, but does not provide the generalizable fact that may apply to all businesses at large (Dhammi & Haq, 2018; Hewitt-Taylor, 2017). Additionally, the presence of heterogeneous studies within systematic reviews leads to the risk of resulting in false conclusions (Faryadi, 2018; Jahan, Naveed, Zeshan, & Tahirr, 2016). However, this limitation was offset as the researcher reviewed all 80 studies and ensured no heterogeneous studies were included, being that the study sample size allowed for the researcher to review this aspect. The following Results section provides a summary of the evidence collected.

5. Results

After a systematic review was implemented and approximately 80 sources were selected, evaluated and synthesized, the following results were gleaned and summarized according to this study's three primary research objectives. As such, the findings are organized according to the research-objective driven subheadings below. Each subheading category includes a synthesized description of the literature review findings relating to each objective-based theme.

5.1 Objective 1: What is the Impact of the IFRS 16 and Who is Most Affected?

A primary common theme uncovered through literature review included the finding that IFRS 16 standards seem to have the most impact on businesses leasing high dollar assets, and objectively speaking, have a greater impact in terms of accounting methods, on lessees rather than lessors. One way the IFRS 16 will impact lessees is by requiring greater transparency in accounting—in other words, disallowing lessees from hiding liabilities that are leases. By improving the transparency and subsequently comparability of leasing businesses' information, the new standard brings leases to businesses' balance sheets. Major impacts are seen by retailers and businesses leasing large real estate assets (Deloitte, 2019; KPMG, 2019).

As described by KPMG (2019), the IFRS 16 dramatically changes how lessees account for operating leases but do not significantly change how lessors account for leases. In doing so, and in contrast to the prior

IFRS 17 regulation, the new IFRS 16 standard moves rental agreements to lessees' balance sheets, when before leases were off the balance sheets, thus allowing these organizations to obfuscate the impact of the lease on their overall books (Joubert, Garvie, & Parle, 2107). Moreover, as noted in the introduction, the new standards do not require lease classification. Additionally, the new standard mandates that banks present lease assets that originate from leased properties that are tangible assets (Morales-Diaz & Zamora-Ramirez, 2018). Lease depreciation and liability interest are then characterized in the bank's income statement during the lease term. This is similar to the manner in which finance leases were treated under IAS 17, essentially leading to increased expenses during the beginning of the lease term (KPMG, 2019; PWC, 2019). This also implies that financial organizations with material leases that were not previously noted on their balance sheets will now report a higher quantity of assets and lower equity. This in many cases impacts these businesses' regulatory capital, leading to a primary consideration for such banking institutions, which is: how to categorize assets for regulatory purposes. In this way, banks' entire risk-weighted assets and capital ratios are impacted. Therefore, it is clear that large-scale banks, especially those with considerable real estate assets will be dramatically impacted by the new IFRS 16 regulation (Deloitte, 2019; KPMG, 2019).

For instance, KPMG (2019) report indicated that among 20 European banks surveyed, an average of .5% decrease in reported equity was realized. Deloitte (2019) confirms these assumptions by stating that banks' financial balance sheets will encounter changes and that corporations with material off balance sheet leases will experience financial metric changes including changes to leverage ratios, ROIC, as well as valuation ratios. Deloitte speculates that equity value calculations are less subject to change, while enterprise values will likely increase. Furthermore, the influence of these changed ratios on financial operations will require increased attention to overall corporate business valuation as well as to Mand transactions (Deloitte, 2019). The TMF Group (2019) also describes the impact of the new IFRS 16 on companies Profit and loss statements, as corporate rental expenses have become front-loaded as a result of lease liability interest while net profits have fallen. Additionally, EBITDA values have and are anticipated to continue to increase while rental expenses and operating costs area excluded from EBITDA calculations. KPIs relating to Profit and Loss Statement measures, treasury metrics, and loan covenants are also anticipated to be influenced, along with cash flow (Deloitte, 2019; TMF Group, 2019). Conclusively, TMG group summarizes that the new IFRS 16 will significantly impact businesses that specifically use leases to access assets in shipping, real estate (PWC, 2019), aviation and retail—in other words, high-value assets. With this in mind, it seems correct to presume that the new IFRS 16 will have a tremendous impact on high-profile banks, retailers and other industries with high-dollar leases (lessees) used as a means to access assets (Sari, Altintas, & Tas, 2016).

Literature also suggested investors will be and are heavily impacted by the new IFRS 16 regulation. Because lease terms will be included on balance sheets, lease terms will become increasingly transparent and all stakeholders, including investors, will be able to view lease terms. This implies a shift in liabilities and assets during 2019. Hence, high profile corporations must take care to explain any changes in financial metrics and positions in order to protect investor relations and confidence (TMF Group, 2019; Todorova, 2019; Okunbor & Arowoshegbe, 2014). Vardia and Shiv Lal (2019) discuss speculations and findings of the impact of the new IFRS 16 on investors' and stakeholders' perceptions of lessees. In summary, the authors found a significant difference between stakeholder perceptions in academia versus in the business world, suggesting the importance of evaluating the impacts of the IFRS 16 both theoretically and practically, using a variety of empirical and also business news sources, as this study does.

Airline companies may also be dramatically impacted by the new IFRS 16 standard considering that airline companies lease and account for high-dollar, high-profile assets, and collateral. Alabood, Bataineh, and Abuaddous (2019) discuss some of the impacts of the new standard on airline company contracts, as demonstrated by a case study of Middle Eastern airline companies, many of which revealed a 77% financial reliance on operating leases. Alabood et al. (2019) concluded that the new standard introduces considerable challenges for airline companies who do not yet own large assets such as aircraft but instead lease the majority of aircraft. Consequently, this may impact investors' confidence in and interest in these airline companies. Therefore, the potential ripple effects of the new IFRS 16 on airline companies, among banks and retailers is layered and multi-faceted, impacting now only cash flow and financial ratios, but also Profit and Loss Statement and investor interest, and therefore potentially projected future financial stability and health (Todorova, 2019).

Similarly, telecommunications will be significantly impacted by this change (Liviu-Alexandru, 2018). In particular, because telecommunications companies often heavily rely on leases to support their endeavors including leased land for antennas, wires, and other infrastructure. Furthermore, telecommunications companies are also engaging in sale and leaseback transactions to reduce their costs (Sieverding, 2018). Accordingly, these transactions will be significantly impacted by these accounting changes because they will not be able to mask liabilities related to asset ownership through leasing. In addition, steel companies or other companies that rely heavily on leased fleets will likely not be able to continue to mask the costs associated with these leases with the new standards (Carabott, 2019). The result of this will be that these companies may choose to purchase assets or may experience cooled investor sentiments towards these sectors.

Despite sources such as the Alabood et al. (2019); Deloitte (2019); PWC (2019); TMF Group (2019), and Todorova (2019) documenting the numerous changes and impacts brought about by the IFRS 16 to high-profile organizations with high-dollar leases, Opare, Houqe and Van Zijl (2019) discuss the fact that a large, parallel body of literature seems to report mixed and sometimes conflicting findings regarding the impacts of the new standard. Opare et al. (2019) found, in most cases, that IFRS 16 adoption among a variety of corporations increased the comparability of financial reporting, increased market liquidity, minimized equity cost and the cost of debt was only decreased in cases of in which the standard was voluntarily adopted. In other words, Opare et al. (2019) demonstrated that the impacts of the IFRS 16 differed depending on whether the standard was adopted voluntarily or as mandatory. Such findings and conclusions were predicted before the new standard released by Wu and Zhang (2018) as well as Gu, Ng, and Tsang (2019).

The authors' findings reviewed thus far regarding the impacts of new IFRS 16 implementation are in contrast to Said (2019) findings regarding the lack of earnings influence of prior IFRS standards, due to the new ways in which the IFRS 16 standard increases lease transparency (Aruini, 2019; Borges, 2019; Iwanowicz, 2018; Krawcsak & Dylang, 2018; Lin & Wang, 2017). Krishnan and Shang (2018) speculate that the new standard increases the earnings quality of impacted organizations. However, research such as that of Rodriguez Junior, Hein, Wilhelm and Kroenke (2015) suggest that the impact of IFRS 16 adoption varies according to national, geographic and global context, and is different for different nations. In summary, the literature suggests the new IFRS 16 standard will most dramatically impact high profile banks, airline companies, and retailers by influencing financial ratios, Profit and Loss Statement, and potentially investor perceptions.

5.2 Objective 2: What IT Options are Available to Manage and Mitigate the IFRS 16 Impact?

Because the IFRS 16, in contrast to the prior IFRS 17 standard, represents a fundamental change in how high profile, bank, retail and airline businesses among others engage in accounting standards, these businesses have a vested interest in potential options available for minimizing and mitigating the financially detrimental, cumbersome, and labor-intensive impacts of the IFRS 16 on financial health (Segal & Naik, 2019). This includes identifying means of more cost-effectively, efficiently and accurately accounting and minimizing the administrative-accounting costs entailed in accounting for the change. Some of these costs, including the costs of excessive administrative and accounting overhead, may be offset with the use of IT accounting management tools including IFRS software (PWCA, 2019; Wei, 2019). However, DDL Financial Partners (2019) warns that it is imperative for businesses adopting the new IFRS 16 standard to not only view the new standard as a financial change and issue alone. In other words, it is imperative to recognize that the adaptation of the new standard will undoubtedly impact broader-scale business behaviors such as stakeholder relationships and purchasing versus leasing decisions as a result of the immediate financial impacts. As such, effective management software may aid in alleviating the immediate administrative-accounting burdens incurred with the adaptation of the new IFRS 16 so that business managers can more comprehensively focus on broad-scale focuses and aspects of business health (3 Characteristics of Full IFRS and IFRS for SMEs adoption, n.d.; 4 Determinants of Full IFRS and IFRS for SMEs adoption, n.d.).

Information technology and data-driven decision making will be important in moving forward with this change to IFRS 16. Software and IT tools aiding in the management of IFRS 16 standards may not only include immediate software accounting tools that can aid in correctly computing metrics and cash flow ratios under the new standard but may also include tax calculation software (Mulyadi, 2012). While the new standard does not change the method of tax calculations itself, it could change assets and liabilities that would impact taxes owed. For corporations looking for comprehensive, all-in-one financial management software tools, updated software that is programmed according to the new standard may be helpful (Mulyadi, 2012).

One study examining the compliance of European institutions with IFRS regulations found that a significant percentage of corporations exhibited noncompliance with IFRS standards due to the logistical challenges presented by regulatory changes—resulting from a lack of internal accounting knowledge and understanding of new standards and a lack of efficient tools, suggesting the need for and benefit of technologies that could aid corporate accountants and administrators in more accurately and cost-effectively adopting standards (Mario, Lars, Gary, Baboukardos, & Cunningham, 2011; Trewavas, Botica Redmayne & Laswad, 2012). Moreover, Jermakowicz and Gormik-Tomaszewski (2006) found that most high-profile EU corporations examined found IFRS implementation to be costly, complex, cumbersome and financially burdensome. Accordingly, having specific information technology that properly accounts for these changes is critical. It could not only help organizations navigate what is a very cumbersome change, but it will also create some consistency among the companies that use the accounting software.

Kim, Liu, and Zheng (2019) found that institutions engaging in mandatory IFRS adoption incurred greater audit fees than organizations voluntarily engaging in IFRS adoption—a finding that suggests IFRS audit fees increase according to the extent of accounting required. Hence, using computing software such as IFRS System, Grant Thornton Software, and NetSuite Financials may aid corporations that are not voluntarily adopting IFRS 16 standards in saving on accounting and human labor costs, knowing that audit fees may increase. However, appropriate tools may vary according to international and national contexts (Giner, Merello, & Pardo, 2019; Nurunnabi, 2019). Toumeh and Yahya (2019) explored various IFRS 16 management techniques employed by different global corporations finding that some IFRS management techniques, otherwise known as earnings management techniques, are being employed as a means of fraudulent practices and in order to evade the reporting transparency mandated by the IFRS 16 in the first place. Such issues were also speculated and recognized during the prior IFRS requirements (Better Rate Practices Can Avoid Revenue Surprises, 2018; Mulford & Comiskey, 2011). The adaptation of the new standard has led some companies to recognize revenue early, before finalizing performance obligations under contract, essentially by recording predicted future sales during the current contract period's last day, as a means to boost reported earnings (Wasiuzzaman, Sahafzadeh, & Rezaie Nejad, 2015). This is an example of a method in which companies are using revenue prediction software to evade IFRS-intended transparency. Hence, though it is a management or coping mechanism, it is an ethically questionable one. Such practices are not new alongside the new IFRS 16 release but were also engaged in previously (Nieken & Sliwka, 2015; Omar, Rahman, Danbatta, & Sulaiman, 2014; Zhou & Habib, 2013).

The term *income smoothing* describes another method of earnings and income management engaged in by corporations adopting the IFRS 16 standard. Income smoothing refers to leveling the influx of incremental net income alterations. This method is a component of earning management and produces the appearance of consistently increased earnings, as generated by accrual accounting. This often involves allocating capital costs using straight-line methods as expenses, over a set time period. Simply stated, smoothing is used to minimize perceived and reported income fluctuations, which are otherwise indicative of bankruptcy risk (Obaidat, 2017; Rusmin, Scully, & Tower, 2010; Safdar & Yan, 2016; Shanszadeh & Zolfaghari, 2015). Real income smoothing impacts cash flow whereas artificial income smoothing, which relates to IFRS management discretions, does to influence cash flow (Lassaad, 2013; Li & Richie, 2009).

Another management tactic, known as the use of *cookie jar reserves,* relates to a strategy in which future events are estimated. Essentially, it is a form of income smoothing and involves manipulating earnings using the accrual of expenses indicating plausible results for current years but unknown results for future years. Through the cookie jar reserves method, future projected expenses are reduced by inflating future earnings at current year expenses; income is projected to increase while expenses are anticipated to stay the same. This tactic is used by managers in calculating balance sheets to appear more plausible in light of the new IFRS 16 reporting standard, by minimizing liabilities and increasing assets (Chhabra, 2016; El Diri, 2017; Hashim, Salleeh, & Ariff, 2013; Omar et al., 2014; Rahman, Sulaiman, Fadel, & Kazemian, 2016).

In many cases, the use of management techniques and software in the application of IFRS standards was heterogeneously implemented by corporations—in other words, some corporations used software to aid in the legitimate reporting, while others used accounting methods to find loopholes or evade transparency (Franceschetti, 2017; Kighir, Omar, & Mohamed, 2013). Therefore, while various software and accounting methods remain available to corporations potentially as an aid in IFRS implementation, the nature in which this software is employed remains at the discretion of corporate financial managers (Toumeh & Yahya, 2019).

5.3 Objective 3: Is the Use of IT Tools Beneficial for IFRS Implementation Efforts?

As described above, businesses exhibit mixed results regarding the nature of how IT tools and accounting methods are used to manage IFRS implementation. While in most cases management methods and IT tools are used to the advantage of corporations implementing them, in some cases they are used legitimately and in some cases, they are not (Carikci & Ozturk, 2019; Franceschetti, 2017; Kighir, Omar, & Mohamed, 2013; Toumeh & Yahya, 2019). Whether or not accounting technologies, instruments, and new method are beneficial to businesses in IFRS implementation efforts remains debatable. According to a report published by Andrzejewski and Dunal (2016), a bulk of accounting instruments used by global corporations to implement a variety of international accounting standards were criticized for their complexity and the lack of congruency between software ability, capacity and functionality, and businesses' real needs.

A study examining the impacts of IFRS 16 on US, UK, and New Zealand companies found that many financial ratios underwent dramatic changes as a result, similar to those stated by prior authors reviewed (Natarajan & Kuniparambil, 2019). As a result, software such as that provided by IFRS System, Grant Thornton Software, and NetSuite Financials may aid these companies in more accurately validating and calculating ratios. This sense, such software, and IT tools are helpful in improving calculation accuracy and reducing administrative costs associated with IFRS accounting, but these technologies are not necessarily advantageous when it comes to minimizing the impacts of the IFRS 16 regulatory changes themselves. In other words, when legally applied, these software do not change the manner in which financial ratios are impacted (IFRS, 2019) and thus do not change the manner in which assets and liabilities, and leases, are reflected on businesses' reported balance sheets—which could be detrimental to businesses with high-value leased items such as real estate and aircraft.

A primary challenge encounter by IFRS 16 adopting companies to be lacking knowledge of how to practically implement the IFRS standard (Hache, 2019). Specifically, corporations examined lacked knowledge of what technologies to use to most successfully account under the new IFRS standard. Companies also lacked adequate IFRS 16 training, suggesting that IFRS 16 training software, in addition to accounting management software, may be beneficial to businesses adopting the new standard (Sresli, Kharabadze, & Sreseli, 2016). Training software, such as that provided by IFRS Box (2018) and the IFRS (2019) claims to aid businesses in implementing the new standard by providing digital educational materials such as webinars, literature, group meeting resources, chat groups, and other online learning resources. Other technology systems that may be useful to corporations adopting the new standard include financial sub-ledgers, software valuation systems, and data marts, or data consolidation software (Deloitte Consulting LLP, 2019). Such software can aid businesses in preparing consolidated and accurate compiled metrics that will be used within IFRS 16 reporting.

Dulitz's (2010) publication documents best practices regarding IFRS implementation—specifically surrounding internal corporate education and education phase-based technologies for smooth adaptation and corporate benefit. Dulitz recommends that businesses begin with internal education surrounding standard changes, accounting methods, and audit practices. Training should occur at an administrative, managerial and employee level. The first, second, and third phases should entail analysis and assessment, implementation and finally post-implementation assessment (BDO, 2019). Associates such as Mowery Schoenfeld (2019) provide coaching and consulting services aimed at helping businesses successfully adopt technologies through IFRS and accounting standard implementation processes, many of which are broken into four sub-phases including impact assessment, planning, implementation, and review— similar to the practices recommended by Dultiz (2019).

Because leasing has become a more common practice within businesses, in order to facilitate operations in addition as a means to a means to accrue assets, lease accounting automation is becoming increasingly imperative for businesses to implement (Hendrie, 2019). Using a purposefully designed software can help companies in managing central lease portfolios—an action that will aid businesses in ensuring all leases are accounted for in compliance with new standards. Lease accounting software can benefit corporations by helping to automate and ensure compliance, which can subsequently prevent costly audit expenses.

Lease automation systems include but are not limited to LOIS, which specializes in aiding businesses with automatic renewals, ending lease charges and more. Using a system such as LOIS can aid businesses in ensuring corporate proprietary, intellectual and financial information is protected and secured. Storing data electronically reduces the risk of compromised paper files while reducing administrative organization labor. Furthermore, the use of a reputable software such as LOIS also aids in maintaining and ensuring cybersecurity (Hendrie, 2019; Nonye S, 2019). As Nonye notes, the new requirements of the IFRS 16 almost require the use of software in the management and implementation of new standards, when considering the complexity of the reporting requirements coupled with the growing number of leases engaged in by companies.

Additionally, the ACCA (2011) noted that interoperability is an important consideration through the implementation of any accounting software. In other words, whether the software is scalable, operable and user-friendly by multiple departments and for multiple purposes is highly important. The more interoperable and versatile a software is, the more beneficial, long-lasting and comprehensive it may become for an organization. Hence, in light of current IFRS adaptation software, interoperable software is likely more beneficial than compartmentalized, highly exclusive and specialized software. Interoperable software is likely also more cost-effective, especially for larger companies requiring a multi-purpose, all-inclusive software (ACCA, 2011; Watson, 2010; Zhu & Wu, 2011). Furthermore, automation software is beneficial in accounting and compiling metrics in the sense that previously, managers and accountants would wade their way through volumes of financial data, manually. However, updated IFRS management software aids in automatically tabulating data, which saves dramatically on administrative costs (Chamoni, 2007; Watson, 2010).

Kim, Lin and No (2012) examined the impact of XBRL use as a digital language technology, finding that use resulting in increased computing efficiencies, decreased volatility and minimized stock return changes, among over 400 firms evaluated. In this way, Kim et al. (2012) findings in addition to Plumlee and Plumlee (2010) findings suggest that the use of automation software may decrease volatility as a result of more effectively managing and balancing administrative costs as well as financial calculation and accounting accuracy and efficiency. Plumlee and Plumlee specifically evaluated the use and efficacy of XBRL (extensible business reporting language), finding that XBRL allowed businesses to omit error and improve efficiency.

6. Summary

The findings documented herein reveal several important considerations. First, findings revealed that business most impacted by the new IFRS 16 standard vary globally, however, most consistently, businesses with high-value leases such as real estate, aircraft, and banks may be most impacted in ways including but not limited to changed cash flow ratios, changed accounting metrics and consequently, changed liabilities and assets that may impact and change taxes owned. Findings also revealed that automation software is available to help businesses manage and successfully implement the new IFRS standards. However, how businesses use accounting practices and software varies, with some businesses using available resources in legitimate ways that are in line with regulatory compliance, while other businesses leverage accounting tactics as a means to inflate assets, reduce liabilities, and hide leases in an attempt to minimize detrimental financial impacts, at the expense of increased audit risk. IFRS 16 software including automation software can aid businesses in reducing administrative and accounting overhead while also aiding businesses in keeping more clear records. Finally, software and consulting resources are available that may aid businesses in successfully training employees and managers regarding best practices through the IFRS 16 implementation process.

7. Discussion

Based on the results discussed previously, the present study presents the following major conclusions informing the three research objectives: 1) High profile lessees with high dollar leased assets such as real estate, retail, banks, and aircraft were found to be most impacted, while impacts occurred in multiple ways such as indirect tax and stakeholder relationship influences as well as direct impacts of accounting ratios and metrics. 2) IT tools for IFRS management exist but primarily aid in the effective and accurate practice of accounting methods, and do not change or minimize the impacts of the regulation itself. 3) Software and IT tools can reduce administrative and human labor costs associated with IFRS implementation and accounting and can help businesses implement companywide IFRS update education.

These findings are significant to the extent that they aid managers in understanding how a company may be impacted by the new IFRS 16 standard, and what resources are available for successful implementation and management. Such considerations are especially imperative considering that leases are becoming more and more common. Businesses use leasing as a means to facilitate operations and gain access to assets. However, based on the results reviewed above, as the new IFRS 16 makes it more difficult to hide leases on financial reports, more and more businesses, especially those such as aircraft businesses such as airlines, real estate businesses, high profile banks, and mega-retailers may decide to engage more actively in buying decisions as opposed to leasing decisions. Essentially, the new IFRS 16 standards increase lease transparency (Arduini, 2019; Borges, 2019; Iwanowicz, 2018; Krawcsak & Dylang, 2018; Lin & Wang, 2017) and thus primarily impact lessees rather than lessors.

The findings of this study and the conclusions drawn are in line with the speculated hypotheses of this study. To begin with, literature revealed that in some cases IFRS 16 changes to financial rations can impact total assets and thus taxes owned. Whether or not more and more businesses are moving to buying decisions rather than leasing decisions remains to be understood and composes a potential area of future research that could enlighten business managers' understanding of the most advantageous forms of operation and financial behavior while still remaining compliant. In other words, future research may seek to examine issues and questions such as 1) whether or not more high profile businesses are choosing to buy as a result of the IFRS 16, and 2) if and how buying is deemed to be financially advantageous over leasing in such situations, as a consequence of the IFRS 16.

This study's second hypothesis was rejected. It was not found that IFRS software and automation software directly minimizes the detrimental impacts of the IFRS 16 regulations itself, in terms of changed financial ratios. However, it was found that the use of such software can benefit corporations by increasing administrative efficiency, accounting accuracy, and compliance—all of which have indirect financial benefits on a company. Finally, in this way, it was found that the use of automated software and IT management accounting tools are beneficial in different ways, to businesses adopting new accounting standards.

Additionally, the results were inconclusive regarding which businesses and what percentage of businesses use software to facilitate noncompliance and identifying loopholes to IFRS 16 compliance, potentially due to the anonymity of corporations involved in research. However, future research may seek to examine, through primary research, nature and industrial class of companies that are most interested in avoiding lease documentation. This may aid policymakers in improving transparency standards. Furthermore, the results documented within this study serve to alert corporate managers and global companies of the importance of adopting automated accounting software in an effort to improve operational and administrative efficiency. Furthermore, these results suggest the importance of abiding by regulatory compliance in order to avoid the negative impacts of audits.

It is also interesting to note that the new IFRS 16 standards do little to impact lessors, but rather, primarily impact the accounting methods of lessees, while leaving leases unclassified (KPMG, 2019). This is interesting in that it seems to discourage leasing. Ironically, while the new standard claims to aim at improving leasing transparency, it could be argued that due to the impacts resulting from changed financial ratios, it may actually incentivize the pursual of additional loopholes that can be used to hide leases and inflate reported assets. In this way, it would be helpful to booth policymakers as well as lessees for future research to examine the company's incentives for buying versus leasing, in order to determine if IFRS 16 reporting standards have anything to do with de-incentivizing leasing and incentivizing buying. Additionally, future research may examine whether or not there has been a change in illegitimate reporting as a result of the IFRS 16. While the new standard aims to improve transparency, it remains unknown if the new standard has accomplished this goal, or if the new standard has merely incentivized a greater drift into illegitimate reporting by businesses. Research clarifying such a question would aid in the effective creation of policy as well as businesses in understanding and maintaining regulatory compliance.

Overall, based on the findings documented herein, the IIFRS 16's impacts on lessees, at large, do not seem to be financially advantageous. Rather, a greater financial detriment seems to be imposed on lessees, than an advantage, as a result of the new standard. However, this impact is variable based on a case-by-case basis as well as influences by geographic, industry type and asset versus liability metric factors. At large, because more companies are leasing, the IFRS 16 presents increased challenges to high profile businesses.

8. Conclusion

The present study examined the impact of the IFRS 16 on businesses while aiming to understand which businesses are most impacted and how, what IT tools are available for use in implementing IFRS 16 standards, and whether or not those tools are beneficial to businesses. Hence, the present study contributes to existing empirical financial literature discussing international financial regulations by narrowing a gap in understanding regarding the impacts of the new IFRS 16. While the present study was limited in the amount of literature reviewed, it nonetheless reached the following conclusions: 1) Primarily, lessees and high-profile businesses with high-dollar leases are most impacted in terms of accounting and cash flow ratios, which could detrimentally impact taxes owned and stakeholder perceptions. This includes banks, airline companies, and retailers. 2) Mitigating the potentially direct negative impacts of the IFRS 16 on lessees cannot be legitimately done, however many businesses use accounting tactics too still try and hide leases or inflate asset values on reports. Moreover, software and IT tools are available for use in improving the accuracy of reporting, the accuracy of compliance, and in reducing administrative costs incurred as a result of accounting.

The present study's systematic literature review included empirical data and data from business news sources, as well as reputable consulting firms. Data were both primary and secondary and published on or after 2010. The present study thus provides a synthesis of the literature on the topic of the new IFRS 16 influence that will be useful to financial policymakers and business executives seeking to improve the financial operational efficiency, health, and sustainability of their companies while minimizing audit risk and optimizing regulatory compliance. Despite the extent of information documented through this systematic literature review, the present study still left questions unanswered and indicates need for additional research, including on the extent to which the new IFRS 16 regulations have inspired high profile businesses to move to purchasing rather than leasing and the degree to which the new standard has incentivized noncompliance and illegitimate reporting—the opposite of the transparency the standard intends to bring about. While lessors are minimally impacted, lessees are represented with the most challenges as a result of the new IFRS 16 standards. This study provides evidence concluding that it would behoove high profile corporations to seek consulting advice and implement automated software through the implementation of the IFRS 16 standard.

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