

Al-Ebel, Abood; Baatwah, Saeed; Al-Musali, Mahfoudh

## Article

# Religiosity, accounting expertise, and audit report lag: Empirical evidence from the individual level

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\*Corresponding author: Saeed Baatwah, Accounting Department, Seiyun University, Hadhramout 009675, Yemen  
E-mail: [sbaatwah@yahoo.com](mailto:sbaatwah@yahoo.com)

Reviewing editor:  
Collins G. Ntim, Accounting,  
University of Southampton,  
Southampton, United Kingdom

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## ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

# Religiosity, accounting expertise, and audit report lag: Empirical evidence from the individual level

Aboud Al-Ebel<sup>1</sup>, Saeed Baatwah<sup>2,3\*</sup> and Mahfoudh Al-Musali<sup>1</sup>

**Abstract:** Motivated mainly by three streams of research on religiosity and accounting expertise, this study investigates the effect of religiosity and accounting expertise on audit report lag. Using a unique sample and pooled regressions, it finds that the religiosity of top leaders, for example, Chief Executive Officer (CEO) and audit committee (AC) chair, is not associated with shorter audit report lag. Consistent with prior research, it reports that the accounting expertise of top leaders is significantly associated with shorter audit report lag. More importantly, it documents that a religious top leader with accounting expertise is significantly associated with a greater reduction in audit report lag. Robustness checks are applied by conducting a variety of tests, resulting in similar findings. In additional analysis, this paper documents that religious and accounting expertise of top leaders are associated with abnormal decrease in audit report lag and that Big4 audit firms interact with the religiosity and accounting expertise of the AC chair more than the CEO. Overall, this study



Aboud Al-Ebel

### ABOUT THE AUTHORS

Aboud Mohammad Al-Ebel is an Assistant Professor of Accounting in the Faculty of Administrative Sciences at the Hadhramout University, Yemen. He finished his PhD in Accounting at Universiti Utara Malaysia. His research interests are in the areas of financial reporting, corporate governance, disclosure and intellectual capital.

Saeed Rabea Baatwah is an Associate Professor of Accounting in the College of Administrative Sciences at Seiyun University, Yemen. He finished his PhD in Accounting at Universiti Malaysia Terengganu. He has a membership in accounting professions such as Certified Management Accountant (CMA) of Australia and International Arab Certified Public Accountant (IACPA). His research interests are in the areas of audit, financial reporting and corporate governance.

Mahfoudh Abdul Kareem Al-Musali is an Associate Professor of accounting at the Faculty of Administrative Sciences, Hadhramout University. He completed his PhD in the Universiti Utara Malaysia in 2013. His research interests include intellectual capital, corporate governance, banking and efficiency.

### PUBLIC INTEREST STATEMENT

Timely information either financial or non-financial is essential for users to make relevant decisions related to corporate business as a delay in providing this information increases the information asymmetry and agency problem. However, providing timely information is affected by the time taken by an external auditor to verify and scrutinise the reliability and faithfulness of financial statements. Typically, the external auditor spends this time based on the assessment of audit risks and the required effort to reduce these risks. This study examines whether the religiosity and accounting expertise of top leaders help the external auditor to reduce this time and, consequently, improve the timeliness of accounting information. This study mainly concludes that religiosity by itself is not associated with timely information whereas the timely information is achieved when it is interacted with accounting expertise. In other words, an external auditor spends a shorter time auditing financial statements for clients with religious and accounting expertise top leaders.

sheds light on the added value of religiosity and accounting expertise in the context of audit report lag.

**Subjects:** Business, Management and Accounting; Accounting; Auditing; Financial Accounting; Corporate Governance

**Keywords:** religiosity; accounting expertise; audit report lag; CEO; audit committee chair; audit risk and effort

## 1. Introduction

A key question in corporate governance is how to control problems arising from conflicts of interest between agents and principals. Because there is a separation between management and ownership in modern businesses, conflicting interests are expected between the agent and the principal; the agent can access and use information for self-interest (information asymmetry) and take the opportunity to act against the interests of the principal (moral hazard) (Jensen & Meckling, 1976). This condition forces both the agent and the principal to set up mechanisms to reduce or limit this conflict. The literature has extensively investigated traditional ways of dealing with agency problems such as hostile takeovers, the board of directors, and institutional investors, and has found mixed evidence regarding their effectiveness (García-Meca & Sánchez-Ballesta, 2009). This study extends prior research by examining how formal and informal mechanisms contribute to lowering the agency problem. Specifically, we investigate the influence of religiosity and accounting expertise of senior management on the timeliness of audit reporting, as timely information reduces information asymmetry and increases confidence in the capital markets (E.M. Bamber et al., 1993; Ettredge et al., 2006).

Indeed, shareholders, investors, regulators, and researchers have recently turned their attention inward to the firm's employees. In particular, they ask whether a firm's inherent tendency to behave opportunistically is deeply rooted in its corporate culture, commonly defined as the shared values and beliefs of the firm's employees (Farrukh et al., 2016; Weaver & Agle, 2002). Religion plays a crucial role in shaping the beliefs, values and behaviours of individuals, in turn influencing economic outcomes (Weber, 1905) and corporate decision-making (T & Dularif, 2020; Hilary & Hui, 2009). For this reason, religiosity has gained momentum with accounting and finance researchers over the last two decades (e.g., Hilary & Hui, 2009; Stulz & Williamson, 2003), and since 2012 has become an important factor in studies about the quality of financial reporting (e.g., Dyreng et al., 2012; McGuire et al., 2012). However, research concerning the effect of religiosity on auditor behaviour is in its infancy, and very few researchers have examined this effect using audit opinion and audit fees (Gul & Ng, 2018; Jaggi & Xin, 2017; Jha & Chen, 2015; Leventis et al., 2018; Omer et al., 2018). We fill this gap by investigating whether religiosity affects the behaviour of auditors in the context of audit report lag.

Timeliness of accounting information is an integral part of its quality because users' assessment of its effect on their decision-making depends on how quickly it is received. Thus, several scholars and regulatory authorities require the time taken for the dissemination to users of both financial and non-financial information to be as short as possible (Al-Ajmi, 2008; Ettredge et al., 2006; International Accounting Standards Board, 2010; Sarbanes-Oxley Act, 2002). However, timely accounting information is mainly determined by how long the external auditor takes to check and certify the credibility of this information (Al-Ajmi, 2008; Ettredge et al., 2006). In fact, the audit completion time depends on the assessment of risks and the effort required to eliminate these risks, and produce high-quality information (Dyer & McHugh, 1975; E.M. Bamber et al., 1993). If the auditor assesses high risks for a given client, he/she should apply a large number of tests, analytical procedures, and discussions with AC and management on the detected issues. This clearly lengthens the time for the audit and delays the signing of the audit report.

This study is motivated by three streams of research. The first is related to recent evidence showing religiosity as an informal mechanism affecting accounting and auditing outcomes (e.g., Callen et al., 2011; Du et al., 2015; T & Dularif, 2020; Dyreng et al., 2012; Hilary & Hui, 2009; Leventis et al., 2018; McGuire et al., 2012; Omer et al., 2018). This research builds on and measures the effect of religiosity based on the social norms theory which assumes that the ethical behaviour of managers is functionally disciplined by the religiosity of the society in which they work. The remaining question is whether a religious manager/director who works in an unreligious society will behave unethically, or vice versa. We propose that religiosity is intrinsically built into a person and governs the ethical beliefs and behaviours more than extrinsic factors such as the religiosity of society. This is consistent with the view that intrinsic, more than extrinsic religiosity, increases the integrity and ethics of individuals in all aspects of their lives (Donahue, 1985; Vitell et al., 2005). Also, unethical behaviour is more likely to create cognitive dissonance for a religious person, even if it is acceptable in society; this motivates the individual to reduce this cognitive dissonance by altering his/her belief or behaviour (Festinger, 1957). Thus, we argue that the effect of religiosity is better examined at the individual level. Specifically, we believe that the innate religiosity of top leaders is the most influential factor determining the extent of tolerance of irregularities in financial reports. We extend this stream of research by examining whether religiosity influences the ethical behaviour of top leaders and therefore audit risks and effort.

The second stream is related to how religion influences the behaviour of auditors (Gul & Ng, 2018; Jaggi & Xin, 2017; Jha & Chen, 2015; Leventis et al., 2018; Omer et al., 2018). Although these researchers adopt social religiosity for measuring the influence of religion, using US data, they do provide an ambiguous picture of its influence. For example, Omer et al. (2018) assert that auditors in religious counties have more professional scepticism and a greater propensity to issue going-concern opinions. This implies that auditors consider a false report in these settings to be associated with higher risks, encouraging them to exert additional effort and tests to conclude this type of report. In contrast, it is argued that auditors or auditees operating in religious counties are associated with lower risks and effort, premising that managers in religious counties are ethical and rarely involved in opportunistic behaviours, increasing the degree of trust in the auditor (Gul & Ng, 2018; Jaggi & Xin, 2017; Leventis et al., 2018). This literature depicts the effect of religiosity in lowering the risks and effort in the context of audit fees. We argue that audit report lag is a more appropriate surrogate for measuring the influence of religiosity on audit effort than audit fees (Jha & Chen, 2015). Further, religious managers or directors may require the auditors to expand their timing and scrutiny to ensure that the financial reports are free from irregularities (Leventis et al., 2018). We expand this research by testing the influence of religiosity on audit report lag.

The final stream is research investigating how the accounting expertise of top leaders shortens the audit report lag (Abernathy et al., 2014; Baatwah et al., 2015a, 2019b). This previous research finds that top leaders such as CEOs or AC chairs with accounting expertise are associated with shorter audit report lag. This assumes that their expertise conveys the quality of their financial reporting and internal controls to external auditors, who accordingly rely on them and reduce the risk assessment and required tests, timing, and effort. In a highly complex regulatory environment, with a variety of clients, auditors may seek additional indicators for further reduction in audit tests, timing, and effort. We extend this research by investigating the interaction between the religiosity and accounting expertise of top leaders, positing that religious leaders with accounting expertise can minimise the nature, time, and audit procedures because they are better able to maintain high-quality financial reporting and are more honest in reporting true performance. This ability and value induce the auditor's trust and reliability in the financial reports produced by such leaders, reducing their own risks and effort (Jaggi & Xin, 2017; Jha & Chen, 2015).

This study is important because most capital markets currently require firms and their auditors to provide timely information, shortening the disclosure deadlines. For example, registered firms in the US, particularly larger accelerated filers, are required to disclose their annual reports within 60 instead of 90 days. This reduction puts pressure on firms and auditors to meet this new deadline

(Ettredge et al., 2006; Impink et al., 2012). Thus, auditors under relatively greater pressure for timely audit have to reassess how to effectively and efficiently collect information on risks related to a given client and plan the work required. Another important feature of this study is the link to the top management positions. We focus on the CEO and AC chair because, in recent practice, they are extensively involved in setting, monitoring, and reassessing the financial reporting process and related controls (Baatwah et al., 2019b; Beattie et al., 2014; J. Jiang et al., 2010; L.S. Bamber et al., 2010). Empirical research also asserts that they are crucial in determining the quality of financial reports (e.g., Bergstresser & Philippon, 2006; Demerjian et al., 2013; Tanyi & Smith, 2015). Thus, we believe that auditors are inclined to consider the personal traits of these leaders in assessing the integrity and quality of the financial reports.<sup>1</sup>

We pose one question and one hypothesis and test them using data for 724 observations from Omani firms, where all corporate businesses are ethically disciplined by a single religion, Islam, and auditors may face unpleasant pressure in meeting the 60-day disclosure timeframe.<sup>2</sup> Using pooled regressions, we find that religiosity of CEOs or AC chairs is not associated with a shorter audit report lag, suggesting that religious leaders do not sufficiently signal the quality of reports, or that they may trade-off quality and timeliness and request auditors to expand tests and effort to add more credibility to the reports. Consistent with recent findings, we also observe that CEOs or AC chairs with accounting expertise are associated with shorter audit report lag. Interestingly, we document that a religious CEO or AC chair with accounting expertise is associated with a sharp reduction in audit report lag. This result indicates that auditors perceive the risk of fraudulent or dishonest reports to be minimal in firms with religious and accounting experts as CEOs or AC chairs; they, therefore, reduce the audit tests and effort, and thus the required time for completing and signing the audit report. These findings are unchanged under several robust tests. We also conduct additional analyses and find that a religious CEO or AC chair with accounting expertise is associated with an abnormal decrease in audit report lag, and that Big4 audit firms are less likely to interact with these two characteristics in CEOs than in AC chairs.

This study makes several contributions. First, it contributes to the recent literature on the determinants of audit report lag (Abernathy et al., 2014; Baatwah et al., 2015a, 2019b). We find that the religiosity and accounting expertise of top leaders shorten the audit report lag. To our knowledge, this is the first extensive evidence examining how religiosity affects audit report lag. At a broader level, we also contribute to the literature that examines the impact of religiosity on accounting proxies (e.g., Callen et al., 2011; Dyreng et al., 2012; Gul & Ng, 2018; Hilary & Hui, 2009; Jaggi & Xin, 2017; Kanagaretnam et al., 2015; Leventis et al., 2018; McGuire et al., 2012) by examining the effect of religiosity at an individual level rather than society as a whole, and by considering the influence of religiosity on a specific proxy for audit risk and effort: audit report lag. This study also contains practical implications for several stakeholders such as auditors, boards of directors, and regulators.

The remainder of this paper is structured as follows. We present in the next section the study background and prior research as well as hypothesis development. The following sections discuss the research design, main results, and additional tests. The final section provides the study's conclusion.

## **2. Background, prior research and hypothesis development**

### **2.1. Background to the study setting**

This study employs data from a single setting, Oman, which has several relevant features. Oman is an Arab country, located on the south-eastern coast of the Arabian Peninsula, and as in most Arab countries the majority of its citizens follow a single religion, Islam (Al-Hamadi et al., 2007). Mujtaba et al. (2010) indicate that although the Omani population comprises people of Arab and non-Arab ethnicity, speaking different languages, Islam remains the main religion. Al-Hamadi et al. (2007) point out that religion shapes the values and behaviours of Omanis, emphasising the importance of Islam in their daily lives. This feature offers an advantage over previous studies (e.g., Leventis



et al., 2018; McGuire et al., 2012; Omer et al., 2018) whose samples come from diverse religions with a variety of religious practices. This heterogeneity results in omitting variables, and questions the reliability of the results (Hilary & Hui, 2009).

Another feature of Oman is the tightened and sophisticated regulatory frameworks, compatible with those of more developed markets such as the US (Al-Yahyaee et al., 2010; Baatwah et al., 2019a). These regulatory frameworks may impose further burdens on firms and auditors working in Oman. For example, all types of firms listed under the Commercial Companies Law and their auditors are required to prepare audited annual reports in accordance with international standards (e.g., IFRS and IAS). They are also required to disclose these reports within 60 days of the year-end date. Furthermore, Omani regulations stipulate that external auditors are prohibited from providing non-audit services to their clients, and have to be rotated within four consecutive years. Also, since 2002 listed firms have been required to apply the principles of the Omani code of corporate governance which governs aspects related to the composition of the board of directors and the relationship between the board, management, shareholders, and auditors (Baatwah et al., 2019a, 2015a). Overall, our setting is culturally and institutionally unique and closely fits the objectives of the study.

## 2.2. Prior research and hypothesis development

We focus in this study on how religiosity and accounting expertise affect audit report lag. Thus, we start our review of prior research by focusing on audit report lag. Audit report lag is defined as the time an auditor spends on auditing, and signing the audit report (Dyer & McHugh, 1975; E.M. Bamber et al., 1993). This time period helps firms and investors to determine when the accounting information will be publicly accessible. When the audit report lag is shorter, the economic value of the accounting information is increased and public confidence is greatly enhanced (Al-Ajmi, 2008; Ettredge et al., 2006). In fact, audit report lag has long been associated with the audit risks and effort (E.M. Bamber et al., 1993). It is assumed that if the auditor considers a given engagement as risky, he/she plans a considerable amount of work to reduce this risk and spends longer on a large number of tests, collecting audit evidence, analytical procedures, and discussions, and thus delaying the completion of the audit task.

Research documents several factors influencing audit report lag and continues to explore additional determinants (see Durand, 2019; Habib et al., 2019, for more review). For example, in the earlier studies, the firm's characteristics (e.g., size, risks, and complexity) were the dominant factors in audit report lag models (e.g., Ashton et al., 1987; Carslaw & Kaplan, 1991; Davies & Whittred, 1980; Dyer & McHugh, 1975; E.M. Bamber et al., 1993; Owusu-Ansah, 2000). Some of these characteristics were associated with longer audit report lag (e.g., inventory ratio; business segments; financial distress) and others with shorter audit report lag (e.g., size; profitability). This investigation was then expanded to include the auditor's attributes (e.g., auditor type, tenure, specialisation, and audit and non-audit fees) and to report several of these characteristics associated with shorter audit report lag (e.g., Habib & Bhuiyan, 2011; Knechel & Sharma, 2012; Lee et al., 2009; Owusu-Ansah & Leventis, 2006; Sakka & Jarboui, 2016). A recent stream of audit report lag research incorporates internal corporate governance factors (e.g., board of directors, AC, and internal audit) but with inconclusive evidence (e.g., Abernathy et al., 2014; Baatwah et al., 2019a, 2015b, 2019b; Sakka & Jarboui, 2016; Sultana et al., 2015; Wan-Hussin & Bamahros, 2013). Although there is a large amount of empirical evidence on the determinants of audit report lag, to our best knowledge, prior research is largely silent on the role of religiosity.<sup>3</sup>

One major objective of this study is thus exploring the association between religiosity and audit report lag. Religiosity or religion has been extensively studied in management and finance research (Chye Koh & Boo, 2004; Stulz & Williamson, 2003; Vitell et al., 2005) and currently attracts researchers from the accounting field (e.g., T & Dularif, 2020; Dyreng et al., 2012; Leventis et al., 2018; McGuire et al., 2012; Omer et al., 2018). The underlying premise of this literature is that religion shapes the beliefs and behaviours of individuals throughout their entire life (Donahue, 1985; Farrukh et al., 2016; Weaver & Agle, 2002; Weber, 1905). Thus, it is argued that the behaviour of individuals is governed by

religious teachings that motivate them to behave ethically and avoid the discomfort resulting from violating these teachings. Adopting this premise, accounting research assumes that religious managers are more ethical and produce better-quality information because they are risk-averse and show a high degree of honesty (Dyrenge et al., 2012; Hilary & Hui, 2009). It is empirically shown that religiosity is associated with a lower incidence of restatement and misreported financial statements (Dyrenge et al., 2012; McGuire et al., 2012) and with higher-quality earnings (Du et al., 2015; Kanagaretnam et al., 2015; McGuire et al., 2012; Montenegro, 2017). This literature concludes that religion is an informal corporate governance mechanism which mitigates the agency problem.

However, the research on the effect of religion on audit behaviour is rare and takes inconsistent perspectives (Gul & Ng, 2018; Jaggi & Xin, 2017; Jha & Chen, 2015; Leventis et al., 2018; Omer et al., 2018). On one hand, it is argued that religion may increase the risks to the auditor and make him/her more conservative and detailed (Omer et al., 2018). This view suggests that auditors have to put in more work and carry out more tests as greater risks require more professional scepticism and effort to protect their reputation and avoid financial litigation. Similarly, religious clients may require the auditor to do more tests and work to meet their ethical standards, if they believe that more religiosity is translated into high-quality financial reports. On the other hand, it is contended that religiosity may reduce the audit risks and effort because it strengthens the mutual trust between auditor and client, and is associated with high-quality reports (Gul & Ng, 2018; Jaggi & Xin, 2017). If so, an auditor may conduct fewer tests and audit procedures as he/she assesses a lower risk for the religious client. Alternatively, a religious client may demand fewer tests and effort as they believe that the prepared financial statements do not contain fraudulent information.

Although this literature provides interesting insights into the effect of religiosity on the behaviour of both auditor and auditee, the majority focuses on audit fees. For example, Jaggi and Xin (2017) document that auditors in religious counties charge lower fees and sharply reduce them if both client and auditor are operating in a religious area. Gul and Ng (2018) find a negative association between the religiosity of the client and auditor and audit fees. Leventis et al. (2018) document that auditors working in high-intensity religious areas price their fees lower. Jha and Chen (2015), although religiosity is not the main interest of their study, report that it is associated with lower audit fees. In relation to audit opinion, Omer et al. (2018) show that auditors of religious clients exercise more professional scepticism and have a greater propensity to issue going-concern audit opinion.

We differ from this stream of research as we focus on the relationship between religiosity and audit report lag. Further, we directly measure religiosity at the level of managers or directors instead of society. This is supported by the view that religion is intrinsic, and beliefs and behaviours of individuals are influenced by intrinsic rather than extrinsic religiosity (Donahue, 1985; Vitell et al., 2005). Cognitive dissonance also suggests that not all managers or directors in non-religious (religious) areas will behave unethically (ethically) because they will feel cognitive discomfort and, accordingly, adapt or change their beliefs or behaviours (Festinger, 1957). Finally, recent empirical research shows that religious top leaders (e.g., CEOs) are associated with high-quality financial reporting (Abdul Rahman et al., 2018; Cai et al., 2019).

Turning to the proposed association between religiosity and audit report lag, it is not clear what the effect will be. One view suggests that religiosity is associated with shorter audit report lag because it reduces the auditor's assessed risks and increases trust in the quality of reports. Thus, the auditor performs fewer tests and spends less time completing the audit function, reducing audit report lag. The alternative view is that the auditor may have to spend longer and conduct additional tests and effort for religious clients because religious clients may require the auditor to conduct comprehensive tests and effort or the auditor himself/herself may assess a higher risk for religious clients and have to exert exceptional tests and effort to reduce this risk. Given the contradictory arguments and the lack of prior research on this issue, we explore the effect of religiosity on audit report lag with the following research question:



### Q1: Does religiosity influence audit report lag?

Regarding the effect of accounting expertise on audit report lag, recent research has emerged to explore how accounting expertise of managers or directors impacts audit report lag (e.g., Abernathy et al., 2014; Baatwah et al., 2015a, 2015b; Sultana et al., 2015). Such accounting expertise serves as a valuable trait for managers or directors and plays an important role in improving the quality of the financial reporting process and internal control systems (DeFond et al., 2005; L.S. Bamber et al., 2010). Accordingly, its role in improving the quality of the reports stems from the serious involvement of these managers in preparing and overseeing the accounting and auditing-related departments (Baatwah et al., 2015a, 2019b). This is consistent with the upper echelon theory, which suggests that the education and experience of managers are crucial in carrying out their responsibilities (Hambrick & Mason, 1984). Another salient feature of accounting expertise is that it makes the manager or director more aware of the risks and associated litigation, and reputational damage (Baatwah et al., 2015a; DeFond et al., 2005). In general, prior research provides evidence that accounting expertise is associated with high-quality reports as proxied, for example, by accruals quality (e.g., Dhaliwal et al., 2010; F. Jiang et al., 2013; Krishnan & Visvanathan, 2008; Tanyi & Smith, 2015) and by audit report timeliness (e.g., Abernathy et al., 2014; Baatwah et al., 2015b; Sultana et al., 2015).

As already discussed, we focus on the religiosity and accounting expertise of the holders of two important positions, CEO and AC chair. Accounting expertise in these positions has been greatly valued in previous research because it enables the CEO or AC chair to prevent accounting frauds (Schrand & Zechman, 2012), to limit earnings management (F. Jiang et al., 2013; Tanyi & Smith, 2015), to make conservative accounting judgements (L.S. Bamber et al., 2010), and to enhance the timeliness of information (Abernathy et al., 2014; Baatwah et al., 2015a, 2019b; Schmidt & Wilkins, 2013). We extend this research by investigating whether the combination of religiosity and accounting expertise makes a difference to the quality of financial reports, proxied in this study by audit report lag. This investigation is important because formal (accounting expertise) and informal (religiosity) monitoring mechanisms are predicted to interact or complement each other, significantly improving the overall monitoring (Montenegro, 2017). Also, research has already established that the accounting expertise of these top leaders is associated with shorter audit report lag (Abernathy et al., 2014; Baatwah et al., 2015a, 2019b). However, this research shows only a small reduction in audit report lag, on average 2 days, except for Baatwah et al. (2015a) who show CEOs with accounting expertise are associated with 8 days' less lag.

In the preceding section, we noted that the effect of religiosity on audit report lag is not clear. Here, we argue that the combination of religiosity and accounting expertise may reduce audit report lag. This is because the relevance and depth of expertise in financial reporting will increase the ability of religious leaders to improve the reporting process, in turn boosting their confidence in the quality of their reports which therefore require fewer audit tests and less work. Also, the auditor's trust in the quality of the reports based on accounting expertise is more likely to be strengthened by religiosity which is associated with honesty and reflects the real performance of the firm (Dyreg et al., 2012). Thus, the auditor relies heavily on the financial reports of leaders characterised by religiosity and accounting expertise, considering them as lower-risk clients and requiring few tests and effort. In short, signalling to the auditor the quality of financial reporting and control system or reducing the perceived audit risks by religiosity and accounting expertise should be associated with fewer tests, less audit documentation, and fewer analytical procedures and discussions, enabling completion and signing of the audit report in a shorter time. Consequently, we test the following hypothesis:

**H1: The combination of religiosity and accounting expertise is associated with shorter audit report lag.**

### 3. Research method

#### 3.1. Sample selection and data

We begin our sample selection process by identifying the listed firms on the Omani capital market during the period 2010–2019. This period follows the financial crisis (2007–2009) that hit capital markets worldwide and caused uncounted negative consequences for firms and investors (Kudlyak & Sánchez, 2017). Thus, we can limit the effect of this crisis on our results by excluding years involved in or preceding this crisis. Within this period, we identify 1,156 observations, on average comprising 116 firms, all firms listed on the capital market as shown in Table 1. Then, we eliminate 344 observations for financial firms because these have unique regulatory frameworks and business operations. We also delete 97 observations with incomplete data for the main or control variables. This leaves 724 observations as our final sample for testing the study's question and hypothesis. Panels B and C provide more detail about the sampled firms. They show that observations are evenly distributed across years, except for 2017, 2018 and 2019 when the number of observations dropped sharply. They also report the distribution of observations based on industry classification (2-digit GICS): observations for Consumer Staples constitute the highest number (171), followed by Materials (154), Energy (146), Consumer Discretionary (138), and Industrial (115).

We use multiple sources from which to collect the data for the study variables. We use audit reports for data for our dependent variables and auditor-related characteristics. We employ corporate governance reports to extract data about the AC chair and CEO, and governance-related variables. In some cases, we use Google, Bloomberg, the firm's website or a director's website to supplement data for directors or top management. For financial data, we use financial statements and DataStream.

#### 3.2. Research model

Following prior research (e.g., Baatwah et al., 2019a, 2015a; E.M. Bamber et al., 1993; Knechel & Sharma, 2012), we run pooled OLS regressions to test the question (hypothesis) of this study. The clustered standard error at firm and year levels is used to correct the potential effect of heteroscedasticity and autocorrelation, as suggested by Rogers (1993). We note that Equation (2) is not our main interest but we add it as the basis for Equation (3) and to provide supporting evidence for the recent literature (e.g., Abernathy et al., 2014; Baatwah et al., 2015a). The following equations represent the testable models. They are extracted from the proposed research model reported in the Figure in Appendix A.

$$\begin{aligned}
 ARL_{it} = & \beta_0 + \beta_1 RLGCEO_{it} + \beta_2 RLGACCH_{it} + \beta_3 BIG4_{it} + \beta_4 ADFT_{it} + \beta_5 ADINDEXP_{it} + \beta_6 ADFEE_{it} \\
 & + \beta_7 QAD_{it} + \beta_8 ACI_{it} + \beta_9 ACXPRT_{it} + \beta_{10} ACS_{it} + \beta_{11} ACMT_{it} + \beta_{12} OWS_{it} + \beta_{13} PROF_{it} \\
 & + \beta_{14} LEV_{it} + \\
 & \beta_{15} CURNT_{it} + \beta_{16} LOSS_{it} + \beta_{17} GRO_{it} + \beta_{18} NEWS_{it} + \beta_{19} BSEGM_{it} + \beta_{20} GSEGM_{it} + \beta_{21} FSIZE_{it} \\
 & + \beta_{22} INVRATIO_{it} + \beta_{23} RECRATIO_{it} + \beta_{24} MBV_{it} + \beta_{17} GRO_{it} + \beta_{18} NEWS_{it} + INDFIX \\
 & + YFIX + \varepsilon_{it}
 \end{aligned} \tag{1}$$

$$\begin{aligned}
 ARL_{it} = & \beta_0 + \beta_1 EXPCEO_{it} + \beta_2 EXPACCH_{it} + \beta_3 BIG4_{it} + \beta_4 ADFT_{it} + \beta_5 ADINDEXP_{it} + \beta_6 ADFEE_{it} \\
 & + \beta_7 QAD_{it} + \beta_8 ACI_{it} + \beta_9 ACXPRT_{it} + \beta_{10} ACS_{it} + \beta_{11} ACMT_{it} + \beta_{12} OWS_{it} + \beta_{13} PROF_{it} \\
 & + \beta_{14} LEV_{it} +
 \end{aligned}$$

Table 1. Sample descriptive												
Panel A: Sample selection												
Number of observations for listed firms in MSM over the period 2010–2019												
Less: Observations related to financial and investment firms												
Less: Observations with missing data for analysis												
Final sample (observations)												
Panel B: Sample distribution by year												
Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		
No.	74	74	73	77	78	78	75	69	65	61		
Panel C: Sample distribution by industry												
Industry	Industrial		Energy		Consumer Discretionary		Materials		Consumer Staples			
No.	115		146		138		154		171			

$$\begin{aligned} & \beta_{15}CURNT_{it} + \beta_{16}LOSS_{it} + \beta_{17}GRO_{it} + \beta_{18}NEWS_{it} + \beta_{19}BSEGM_{it} + \beta_{20}GSEGM_{it} + \beta_{21}FSIZE_{it} \\ & + \beta_{22}INVRATIO_{it} + \beta_{23}RECRATIO_{it} + \beta_{24}MBV_{it} + \beta_{17}GRO_{it} + \beta_{18}NEWS_{it} + INDFIX \\ & + YFIX + \varepsilon_{it} \end{aligned} \quad (2)$$

$$\begin{aligned} ARL_{it} = & \beta_0 + \beta_1RLGEXPCEO_{it} + \beta_2RLGEXPACCH_{it} + \beta_3BIG4_{it} + \beta_4ADFT_{it} + \beta_5ADINDEXP_{it} \\ & + \beta_6ADFEE_{it} + \beta_7QAD_{it} + \beta_8ACI_{it} + \beta_9ACXPRT_{it} + \beta_{10}ACS_{it} + \beta_{11}ACMT_{it} + \beta_{12}OWS_{it} \\ & + \beta_{13}PROF_{it} + \end{aligned}$$

$$\begin{aligned} & \beta_{14}LEV_{it} + \beta_{15}CURNT_{it} + \beta_{16}LOSS_{it} + \beta_{17}GRO_{it} + \beta_{18}NEWS_{it} + \beta_{19}BSEGM_{it} + \beta_{20}GSEGM_{it} \\ & + \beta_{21}FSIZE_{it} + \beta_{22}INVRATIO_{it} + \beta_{23}RECRATIO_{it} + \beta_{24}MBV_{it} + \beta_{17}GRO_{it} + \beta_{18}NEWS_{it} \\ & + INDFIX + YFIX + \varepsilon_{it} \end{aligned} \quad (3)$$

Table 2 shows the full definitions of these variables.<sup>4</sup> The dependent variable in the equations is audit report lag (ARL), defined as the number of days between the date of year-end and the date of signing the audit report. The main independent variables are: religious CEO (RLGCEO), religious AC chair (RLGACCH), accounting expertise CEO (EXPCEO), accounting expertise AC chair (EXPACCH), religious and accounting expertise CEO (RLGEXPCEO), and religious and accounting expertise AC chair (RLGEXPACCH). Thus, these variables are measured using a dichotomous approach. For example, a firm is assigned one if a CEO or AC chair is religious and zero otherwise. As for accounting expertise, we assign one to firms with a CEO or AC chair with accounting qualifications and zero otherwise. Finally, we assign one to a firm if the CEO or AC chair combines both traits (religiosity and accounting expertise), and zero otherwise. Unlike prior research (e.g., McGuire et al., 2012; Omer et al., 2018), our investigation examines religiosity at the individual level not the society level. Accordingly, we focus on the CEO and AC chair not only because we believe that these two leaders have a role in determining the extent of the quality of financial reporting and internal control, but also because the auditor is more likely to consider these characteristics in these two leaders than in other leaders or employees, as they are more closely linked with the financial reporting process and audit (Baatwah et al., 2015a, 2019b).

We define a religious CEO or AC chair if he/she is affiliated with Islam. Religiosity studies (e.g., Wilkes et al., 1986; Worthington et al., 2003) define a religious person as one who shows a religious affiliation, declares the importance of religion in his life, believes in God, and regularly attends religious rituals. According to World Values Surveys (<http://www.worldvaluessurvey.org/WVSOnline.jsp>), these elements exist more strongly in Muslim respondents than in the followers of other religions. Also, across-country research which has developed religiosity scores based on three values (cognitive, affective and behavioural) reports that Muslim countries are more religious than Christian or Buddhist ones (Chen et al., 2016; Halabi et al., 2019; Kanagaretnam et al., 2015). This is not surprising because Muslims are required to perform several daily rituals (e.g., five prayers; reciting the Book; attending the Mosque), which are crucial in increasing the person's religiosity and reinforcing ethical conduct (Dyrenge et al., 2012; McGuire et al., 2012). Thus, we argue that Muslims are likely to be more religious in general than the followers of other faiths, but that our findings could be applicable to individual followers of other religions who do show a high degree of religiosity.<sup>5</sup>

We identify Muslims and non-Muslims from the names of the CEOs or AC chairs. Names are used by individuals as an identification differentiating themselves from others. Thus, previous psychology and religious studies consider the names of individuals as a means of determining an individual's affiliation to a group such as nation, religion, or ethnic group (Dinur et al., 1996; Dion, 1983; Lauderdale & Kestenbaum, 2000). Muslims are readily identifiable by names such as Abdullallah, Mohamed, Ahmed, and other names extracted from the Book, the Prophet's names, the Prophet's companions, famous Islamic scholars, and Arabic names (Rahman, 2013; Şahin, 2017; Sharma, 1998). As for accounting expertise, we follow the common definition of a person who is an accountancy graduate, has accounting-related experience (e.g., CFO; accountant; controller), or

**Table 2. Variable Definitions**

Variable	Definitions
ARL	The number of days between the date of year-end and the date of signing audit report.
RLGCEO	An indicator variable equal to 1 if the firm has a religious CEO, 0 otherwise.
RLGACCH	An indicator variable equal to 1 if the firm has a religious AC chair, 0 otherwise.
EXPCO	An indicator variable equal to 1 if the firm has a CEO with accounting expertise, 0 otherwise.
EXPACCH	An indicator variable equal to 1 if the firm has an AC chair with accounting expertise, 0 otherwise.
RLGEXPCO	An indicator variable equal to 1 if the firm has a religious and accounting expertise CEO, 0 otherwise.
RLGEXPACCH	An indicator variable equal to 1 if the firm has a religious and accounting expertise AC chair, 0 otherwise.
BIG4	An indicator variable equal to 1 if the external auditor is Deloitte, PricewaterhouseCoopers, Ernst & Young or KPMG, 0 otherwise.
ADFT	The number of consecutive years the firm uses the same audit firm as external auditor.
ADINDEXP	An indicator variable equal to 1 if the external auditor is the largest industry provider, using market share approach based on audit fees, 0 otherwise.
ADFEE	The natural log of audit fees paid to the external auditor for statutory audit.
QAD	An indicator variable equal to 1 if the firm received qualified audit opinion, 0 otherwise.
ACI	The proportion of independent directors on the AC.
ACXPRT	The proportion of directors with accounting expertise on the AC after excluding the AC chair with accounting expertise.
ACS	The number of directors on the AC.
ACMT	The number of meetings held by AC during the year.
OWS	The percentage of shares held by major shareholders ( $\leq 10\%$ ).
PROF	The net income scaled by total assets.
LEV	The total liabilities scaled by total assets.
CURNIT	The current ratio computed by dividing total current assets on current liabilities.
LOSS	An indicator variable equal to 1 if the firm incurred loss in the current period, 0 otherwise.
GRO	The sales change scaled by previous year sales.
NEWS	The difference between the current EPS and previous year EPS.
BSEGM	The number of business segments.
GSEGM	The number of geography segments.

(Continued)

Table 2. (Continued)	
Variable	Definitions
<i>F<sub>SIZE</sub></i>	The natural log of total assets.
<i>INVRATIO</i>	The proportion of inventory to total assets.
<i>RECRATIO</i>	The proportion of receivables to total assets.
<i>MBV</i>	The proportion of equity market value to book value.
<i>INDFIX</i>	The indicators for industries fixed effect.
<i>YFIX</i>	The indicators for years fixed effect.



works as an auditor and is considered to have accounting expertise (Baatwah et al., 2015a; Krishnan & Visvanathan, 2008).

We include a large number of variables to control for omitting important variables and to increase the predictive value of our models. These variables were mostly used in previous audit report lag studies (Baatwah et al., 2015a; E.M. Bamber et al., 1993; Knechel & Sharma, 2012; Sharma et al., 2017), and are related to the client company's size, risk, complexity, internal control, and motivation for timely reporting. Others are related to the auditor's characteristics, including auditor type (*BIG4*), assigning one to a firm if its external auditor is one of the Big4 audit firms and zero otherwise. We also control for the tenure of the external auditor (*ADFT*), defined as the number of consecutive years the auditor has retained the position of external auditor for a client. Further, we add the expertise of the external auditor (*ADINDEXP*) into the model; to designate an auditor as an industry specialist, we use industry market share, based on audit fees, and assign one if the auditor dominates the industry in the given year, and zero otherwise. We also include audit fees (*ADFEE*) measured by the natural log of fees paid to the auditor for financial statement audits. Similarly, we control for the audit report content (*QAD*), assigning one to a firm if its external auditor issues qualified audit opinion and zero otherwise.

We control for AC independence (*ACI*), expertise (*ACXPRT*), size (*ACS*), and frequency of meetings (*ACMT*). We, respectively, measure these characteristics by the proportion of independent directors on the committee; the proportion of directors with accounting expertise after excluding the chair of the committee; the number of directors on the committee; and the number of meetings held by the committee in the year. We include the structure of ownership (*OWS*) and measure it by the percentage of shares held by major shareholders ( $\geq 10\%$ ). We control the firm performance (*PROF*) using return on assets, defined by the net income divided by total assets. We add leverage (*LEV*) and measure it by the proportion of total debt to total assets. We include current ratio (*CURNT*) and measure it by the proportion of current assets to current liabilities. We control for the negative result (*LOSS*) measured by assigning one if the firm incurred a loss in the current year and zero otherwise. We include the firm's growth (*GRO*) and measure it by the difference between sales/revenues for current and previous years scaled by previous year sales/revenues. We control for good/bad news (*NEWS*) and measure this by the difference between the current and previous earnings per share for common shares. We also include two proxies for a firm's segments (*BSEGM* and *GSEGM*), measured by the number of business segments and geographic segments respectively. We control for the firm size and proxy it by the natural log of total assets. We control for inventory intensity (*INVRATIO*) and accounts receivable (*RECRATIO*) and measure them by the proportion of inventory to total assets and the proportion of receivable to total assets, respectively. We also control for market value to book value of equity (*MBV*) which is measured by dividing the market value of shares by the book value of shares. Finally, we control for the fixed effects of industry (*INDFIX*) and year (*YFIX*). In general, we follow the literature to predict the potential association between these control variables and audit report lag.

## 4. Results

### 4.1. Results for descriptive statistics and univariate analysis

Table 3 reports the results describing the variables and testing the mean differences. For brevity, we discuss only the results related to the variables of interest in this study. Thus, descriptive results for the control variables can be extracted from Table 3. In Panel A, we observe the mean (median) for *ARL* is 51 (52) days indicating that external auditors of sampled firms take 51 days to complete audit procedures and sign the audit report. For *RLGCEO* and *RLGACCH*, the means are 0.52 and 0.75, respectively, suggesting that 52% of sampled firms employ religious CEOs while 75% have religious AC chairs. As for *EXPCEO* and *EXPACCH*, we observe that the means are 0.12 and 0.24, respectively. This result suggests that 12% of the CEOs in the sampled firms are qualified as having accounting expertise, and that AC chairs with accounting expertise represent 24%. We also observe that the means for *RLGEXPCEO* and *RLGEXPACCH* are 0.05 and 0.11 indicating that 5% of CEOs in the

**Table 3. Summary statistics**

Panel A: Descriptive statistics

Variable	Mean	Std. Dev.	Median	p25	p75
ARL	51.22	13.20	52.00	44.00	58.00
RLGCEO	0.52	0.50	1.00	0.00	1.00
RLGACCH	0.75	0.43	1.00	0.00	1.00
EXPCEO	0.12	0.32	0.00	0.00	0.00
EXPACCH	0.24	0.43	0.00	0.00	0.00
RLGEXPCEO	0.05	0.21	0.00	0.00	0.00
RLGEXPACCH	0.11	0.31	0.00	0.00	0.00
BIG4	0.63	0.48	1.00	0.00	1.00
ADFT	2.30	1.11	2.00	1.00	3.00
ADINDEXP	0.19	0.39	0.00	0.00	0.00
ADFE	8.96	0.79	8.85	8.47	9.25
QAD	0.09	0.29	0.00	0.00	0.00
ACI	0.83	0.24	1.00	0.67	1.00
ACXPRT	0.24	0.23	0.25	0.00	0.33
ACS	3.36	0.67	3.00	3.00	4.00
ACMT	4.76	1.42	5.00	4.00	5.00
OWS	59.16	22.60	60.10	45.00	76.50
PROF	0.03	0.12	0.04	0.00	0.08
LEV	0.51	0.43	0.45	0.24	0.69
CURNT	2.22	3.14	1.37	0.96	2.46
LOSS	0.21	0.41	0.00	0.00	0.00
GRO	0.21	2.38	0.03	-0.07	0.13
NEWS	-0.01	0.24	-0.00	-0.02	0.02
BSEGM	1.61	1.13	1.00	1.00	2.00
GSEGM	2.07	1.62	2.00	1.00	3.00
FSIZE	17.01	1.66	17.01	15.81	18.09
INVRATIO	0.10	0.10	0.08	0.01	0.16
RECRATIO	0.19	0.17	0.13	0.06	0.28
MBV	5.53	115.61	1.10	0.58	1.87

Panel B: Mean differences for ARL based on the groups of interested variables

Variable	RLGCEO	RLGACCH	EXPCEO	EXPACCH	RLGEXPCEO	RLGEXPACCH
G1	52.21	51.53	47.66	47.09	46.06	45.93
G2	50.14	50.30	51.70	52.57	51.48	51.89
Diff	2.07	1.23	-4.04	-5.48	-5.42	-5.96
T-value	2.15**	1.10	-2.75***	-5.05***	-2.40**	4.00***

\*\*\* <0.01; \*\*<0.05

G1 is group indicator if a firm has RLGCEO, RLGACCH, EXPCEO, EXPACCH, RLGEXPCEO, or RLGEXPACCH; G2 is group indicator if a firm has not RLGCEO, RLGACCH, EXPCEO, EXPACCH, RLGEXPCEO, or RLGEXPACCH; See Table 2 for definitions.

sampled firms are religious and have accounting expertise, whereas religious AC chairs with accounting expertise constitute 11% of the AC chairs.

Panel B provides further insight by reporting results for the mean difference of ARL based on the groups of our main independent variables. We create the groups according to whether the observation has a CEO or AC chair who is religious or has accounting expertise or combines both

(G1), and zero otherwise (G2). We observe that the means of *ARL* for observations with *EXPCFO*, *EXPACCH*, *RLGEXPCFO*, and *RLGEXPACCH* are significantly shorter than those without such CEOs or AC chairs. However, we observe that the means for observations with a religious CEO (*RLGCEO*) are significantly longer than those without such CEO. We observe no significant differences between the means of *ARL* for religious and non-religious AC chair groups.

Table 4 reports the results in a correlation matrix. Concentrating on the main variables, we observe that the correlation coefficients between *RLGCEO* and *ARL* and between *RLGACCH* and *ARL* are positive, although low (0.06). We find negative coefficients on the correlations between *ARL* and the other interested variables *EXPCFO*, *EXPACCH*, *RLGEXPCFO*, and *RLGEXPACCH*; the correlations are moderately significant in untabulated results. We also use correlation matrix analysis to check for multicollinearity. We observe that the highest correlation coefficient is between *ADFFEE* and *FSIZE* (0.77). This is lower than the suggested threshold (0.80) (Gujarati & Porter, 2009) indicating that multicollinearity is not a concern. We supplement the check for this problem by variance inflation factor (VIF) as reported in the tables for regression results. Across all tables, we observe VIF values lower than 10, again suggesting no multicollinearity issue (Gujarati & Porter, 2009).

#### 4.2. Results for main regressions

Table 5 shows the results for the main models. We winsorise all continuous variables at 1 and 99 percentiles to reduce the influence of outliers or influential observations. Column (1) reports results for *ARL* in which *RLGCEO* and *RLGACCH* are the main predictors, while columns (2) and (3) show results for *EXPCFO* and *EXPACCH* and for *RLGEXPCFO* and *RLGEXPACCH* respectively. Across all these columns, the overall significance for these models is high ( $p < 0.001$ ) and the predictive values range from 29 to 32%, indicating that our models fit well and explain the variance in audit report lag.

In column (1), we find that the coefficient on *RLGCEO* is negative but insignificant at the conventional level (Estimates =  $-0.40$  and  $t$ -statistics =  $-0.45$ ) suggesting that religious CEOs are not associated with audit report lag. Similarly, we observe that the coefficient on *RLGACCH* is positive but insignificant, indicating that religious AC chairs are not associated with audit report lag. This result is consistent with the view that religious managers may pressure the external auditor to expand audit tests and procedures to secure the quality of financial reports (Jha & Chen, 2015; Leventis et al., 2018). Another view suggests that the religiosity of the CEO or AC chair is less likely to be sufficient in building trust with the external auditor in terms of high-quality financial reports and effective control systems. This might result from a lack of the required expertise which would enable these leaders to ensure high-quality reports and controls. Thus, external auditors perceive these clients as risky, requiring more effort to reduce this risk. Overall, we find empirical evidence suggesting that religiosity is not associated with audit report lag.

Further, we observe in column (2) that the coefficients on *EXPCFO* and *EXPACCH* are negatively and significantly associated with *ARL* (Estimates =  $-3.74$  and  $t$ -statistics =  $-2.42$ ; Estimates =  $-3.51$  and  $t$ -statistics =  $-3.29$ , respectively) indicating that CEOs or AC chairs with accounting expertise are associated with shorter audit report lag. This is consistent with prior research (Abernathy et al., 2014; Baatwah et al., 2015a, 2019b). It also supports the view that the accounting expertise of CEOs or directors increases the trust of external auditors in the quality of financial statements and internal control systems, as it increases the ability of top leaders to uncover irregularities in financial reports committed by other executive managers, and increases the overall risk-aversion value (Baatwah et al., 2019b). This trust results in limited audit tests and effort, reducing the number of days required by the external auditor to complete the audit tasks.

More interestingly, in column (3), we find that the coefficients on *RLGEXPCFO* and *RLGEXPACCH* are negative and significant at a high level of  $p$ -value (Estimates =  $-11.10$  and  $t$ -statistics =  $-3.92$ ; Estimates =  $-4.85$  and  $t$ -statistics =  $-3.51$ , respectively). This indicates that religious CEOs or AC chairs with accounting expertise are associated with a significant decrease in audit report lag. In terms of economic significance, a religious CEO who also has accounting expertise is associated

**Table 4. Correlation matrix**

Panel A: Correlation for (1) ARL to (15) ACS

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) ARL	1.00														
(2) RLCEO	0.06	1.00													
(3) RLGACCH	0.06	0.40	1.00												
(4) EXPCEO	-0.10	-0.12	-0.17	1.00											
(5) EXPACCH	-0.19	-0.17	-0.39	0.03	1.00										
(6) RLGPCEO	-0.11	0.19	0.01	0.57	-0.04	1.00									
(7) RLGPACCH	-0.15	0.02	0.21	-0.01	0.61	-0.05	1.00								
(8) BIG4	-0.04	-0.09	-0.02	-0.04	0.06	0.02	0.04	1.00							
(9) ADFT	-0.02	-0.02	-0.03	0.05	0.00	0.04	0.01	0.07	1.00						
(10) ADINDEXP	0.01	-0.06	0.04	-0.06	-0.04	-0.05	-0.00	0.36	0.05	1.00					
(11) ADLEE	0.03	-0.11	-0.14	-0.07	0.01	-0.01	0.01	0.47	0.06	0.30	1.00				
(12) QAD	0.29	0.07	0.05	0.01	-0.10	-0.04	-0.05	-0.19	-0.02	-0.05	-0.11	1.00			
(13) ACI	-0.07	-0.08	-0.09	-0.04	0.16	0.09	0.01	0.21	0.03	0.09	0.08	-0.27	1.00		
(14) ACXPRT	-0.21	-0.15	-0.26	-0.01	0.56	-0.07	0.30	-0.01	-0.01	-0.13	-0.05	-0.11	0.14	1.00	
(15) ACS	0.01	0.09	0.11	-0.04	-0.08	0.06	-0.07	0.10	0.01	0.11	0.03	-0.14	0.18	-0.14	1.00
(16) ACMT	-0.03	0.05	0.09	-0.01	0.04	-0.01	0.02	0.11	0.02	-0.01	0.12	-0.18	0.22	-0.03	0.14
(17) OWS	-0.01	-0.13	-0.23	0.01	0.12	-0.12	-0.09	-0.07	-0.03	-0.07	-0.25	-0.10	-0.11	0.11	-0.01
(18) PROF	-0.25	0.10	0.05	-0.06	0.12	0.04	0.14	0.15	0.10	0.08	0.13	-0.31	0.07	0.01	0.07
(19) LEV	0.20	-0.08	-0.15	0.02	0.03	-0.05	-0.03	0.01	-0.02	-0.03	0.14	0.31	-0.10	0.03	-0.14
(20) CURNT	-0.08	0.09	0.05	-0.09	0.04	-0.01	0.03	-0.09	-0.02	-0.07	-0.16	-0.16	0.09	0.03	0.02
(21) LOSS	0.23	-0.01	0.03	-0.07	-0.14	-0.09	-0.10	-0.22	-0.09	-0.12	-0.22	0.34	-0.08	-0.01	-0.09
(22) GRO	-0.02	-0.01	-0.04	-0.06	0.08	-0.04	0.08	0.10	0.05	0.02	0.01	-0.05	0.03	0.06	0.04
(23) NEWS	-0.01	0.02	0.02	-0.03	-0.02	-0.02	0.00	-0.05	0.09	0.02	0.00	0.02	-0.02	0.01	0.04
(24) BSEGM	0.07	0.13	0.09	-0.18	0.03	-0.11	0.09	0.00	0.05	0.07	0.12	-0.08	0.05	-0.03	0.27

(Continued)

**Table 4. (Continued)**

(25) GSEGM	0.00	-0.02	0.06	0.12	-0.13	0.28	-0.04	-0.02	-0.01	-0.03	0.01	-0.07	0.08	-0.04	0.22
(26) FSIZE	-0.06	0.03	-0.07	-0.04	0.04	-0.06	0.07	0.46	0.00	0.21	0.77	-0.18	0.01	0.01	0.05
(27) INVRATIO	-0.21	-0.14	0.06	-0.08	-0.08	-0.11	-0.08	-0.12	0.00	-0.03	-0.23	-0.02	-0.01	0.05	0.07
(28) RECRATIO	-0.05	-0.04	0.06	-0.09	0.07	-0.07	0.12	0.02	0.02	-0.05	0.09	-0.08	0.08	0.01	0.07
(29) MBV	0.04	-0.04	0.02	-0.02	-0.02	-0.01	-0.01	0.03	-0.0	-0.02	0.07	-0.01	0.03	-0.04	-0.02
Panel B: Correlation for (16) ACMT to (30) MBV															
(16) ACMT	1.00														
(17) OWS	-0.11	1.00													
(18) PROF	0.08	-0.11	1.00												
(19) LEV	-0.07	0.03	-0.43	1.00											
(20) CURNT	0.06	-0.10	0.07	-0.26	1.00										
(21) LOSS	-0.08	0.08	-0.71	0.26	-0.00	1.00									
(22) GRO	0.02	0.06	0.22	-0.02	-0.07	-0.14	1.00								
(23) NEWS	-0.02	0.00	0.17	-0.02	-0.17	-0.11	0.19	1.00							
(24) BSEGM	0.21	-0.01	-0.01	-0.06	0.10	0.04	0.02	0.02	1.00						
(25) GSEGM	0.12	-0.07	-0.02	-0.02	-0.02	0.03	0.01	0.02	-0.11	1.00					
(26) FSIZE	0.15	-0.13	0.28	0.07	-0.23	-0.33	0.10	0.01	0.09	-0.10	1.00				
(27) INVRATIO	0.08	-0.04	-0.07	0.09	0.01	0.07	-0.02	-0.02	-0.14	0.31	-0.25	1.00			
(28) RECRATIO	0.21	-0.17	0.03	0.10	0.03	-0.05	0.06	0.02	0.31	0.09	-0.07	0.25	1.00		
(29) MBV	-0.02	0.00	0.00	0.04	-0.01	-0.02	-0.00	0.03	-0.02	-0.03	0.06	-0.04	-0.03	1.00	

See Table 2 for definitions

**Table 5. Regression results for the main analysis**

Variable	ARL					
	(1)		(2)		(3)	
	Estimates	t-statistics	Estimates	t-statistics	Estimates	t-statistics
RLGCEO	-0.40	(-0.45)				
RLGACCH	0.91	(0.88)				
EXPCEO			-3.74**	(-2.42)		
EXPACCH			-3.51***	(-3.29)		
RLGEXPCEO					-11.10***	(-3.92)
RLGEXPACCH					-4.85***	(-3.51)
BIG4	-1.20	(-1.21)	-1.15	(-1.19)	-0.91	(-0.98)
ADFT	-0.35	(-.99)	-0.30	(-0.85)	-0.26	(-0.76)
ADINDEXP	-1.15	(-1.07)	-0.98	(-0.95)	-1.14	(-1.11)
ADFEF	2.32***	(3.14)	1.83***	(2.60)	1.53**	(2.21)
QAD	5.94***	(3.01)	5.89***	(3.05)	6.42***	(3.34)
ACI	0.47	(0.21)	0.47	(0.23)	0.54	(0.26)
ACXPRT	-7.13***	(-3.95)	-3.71*	(-1.79)	-5.83***	(-3.37)
ACS	0.46	(0.62)	0.47	(0.64)	0.48	(0.66)
ACMT	0.07	(0.22)	0.14	(0.45)	0.04	(0.14)
OWS	-0.06***	(-2.73)	-0.05***	(-2.74)	-0.08***	(-4.01)
PROF	-21.72***	(-3.23)	-22.67***	(-3.49)	-21.00***	(-3.25)
LEV	3.86**	(2.35)	4.08**	(2.51)	3.34**	(2.07)
CURNT	-0.31	(-1.54)	-0.36*	(-1.75)	-0.33*	(-1.65)
LOSS	0.59	(0.41)	-0.35	(-0.25)	-0.07	(-0.05)
GRO	1.54	(1.17)	1.40	(1.09)	1.41	(1.06)
NEWS	0.55	(0.24)	0.10	(0.04)	0.10	(0.04)
BSEGM	0.89**	(2.03)	0.68	(1.60)	0.78*	(1.93)
GSEGM	-0.01	(-0.04)	0.07	(0.22)	0.54*	(1.84)
FSIZE	-3.81***	(-3.48)	-3.27***	(-3.02)	-3.75***	(-3.58)
INVRATIO	-31.98***	(-6.53)	-34.68***	(-7.51)	-37.37***	(-8.06)
RECRATIO	2.38	(0.91)	3.03	(1.16)	3.30	(1.27)
MBV	0.09	(0.43)	0.04	(0.20)	0.02	(0.08)
INDFIX	YES		YES		YES	
YFIX	YES		YES		YES	
CONST	40.48***	(4.92)	44.99***	(5.98)	50.49***	(6.87)
Observations	724		724		724	
P-value	0.001***		0.001***		0.001***	
R-squared	0.29		0.30		0.32	
Max VIF	2.72		2.75		2.74	

\*\*\* p <.01, \*\* p <.05, \* p <.1

See Table 2 for definitions.

with reduction in the audit report lag by 11 days; this reduction is higher than the reduction in audit report lag of 7 days if a CEO has only accounting expertise. For an AC chair with both traits, the result is also of economic substance as it is associated with a reduction in audit report lag of 5 days, although there is little difference between this AC chair and one with accounting expertise. Based on this result, we argue that auditors are more affected by the religiosity and accounting expertise of CEOs than of AC chairs. Logically, involvement in preparing and overseeing the



financial reporting process and setting the tone of the control system is more likely to belong to the CEO than the AC chair. Also, the CEO position is the most involved in directives concerning manipulating earnings for self-interest (Bergstresser & Philippon, 2006; J. Jiang et al., 2010). Thus, the auditor may perceive that the CEO's contribution to lowering the risk of fraudulent reports is greater than the AC chair's. Overall, the results are consistent with the hypothesis that the combination of religiosity and accounting expertise reduces the need for more audit and enhances the trust of the auditor in the quality of such clients, in turn shortening the audit report lag.

We discuss the results for control variables only briefly because, in most cases, they are consistent with prior research (e.g., Baatwah et al., 2019a, 2015a; Sharma et al., 2017; Wan-Hussin & Bamahros, 2013). Across all columns, we find that audit fees (*ADFEE*), audit opinion (*QAD*), and leverage (*LEV*) are positively and significantly associated with *ARL*, indicating that firms with high audit fees, qualified audit opinion, and a high ratio of debt have longer audit report lag. We also observe in columns (1) and (3) positive and significant coefficients for business segments (*BSEGM*), and for geographic segments (*GSEGM*) indicating, in general, that firms with diversified business and geographic segments have longer audit report lag. Further, we find that AC accounting expertise (*ACXPRT*), ownership structure (*OWS*), performance (*PROF*), firm size (*FSIZE*), and inventory ratio (*INVRATIO*) have negative and significant coefficients across the columns suggesting that firms with a concentrated ownership structure, profitable, large size, and high inventory have shorter audit report lags. We also find current ratio (*CURNT*) negatively associated with *ARL*, although this is only significant in columns (2) and (3), indicating that those with a high ratio of current assets to current liabilities have shorter audit report lag. However, we observe that auditor type (*BIG4*), auditor tenure (*ADFT*), industry specialist auditor (*ADINDEXP*), AC independence (*ACI*), AC size (*ACS*), AC meetings (*ACMT*), loss (*LOSS*), firm growth (*GRO*), earnings news (*NEWS*), receivable ratio (*RECRATIO*), and equity market value to book value (*MBV*) have insignificant coefficients, indicating that these control variables are not important predictors of *ARL* in this study.

We conduct further analyses to check the robustness of the main results.<sup>6</sup> First, we replace the measurement of audit report lag by using the natural log of the number of days between the date of year end and the date of audit report signature, as used in prior research (Knechel & Sharma, 2012; Wan-Hussin & Bamahros, 2013). We regress the three equations using the natural log of *ARL* as dependent variable and, in untabulated results, we observe that *RLGCEO* and *RLGACCH* are not significantly associated with the natural log of *ARL* while *EXPCEO*, *EXPACCH*, *RLGEXPCEO*, and *RLGEXPACCH* are negatively and significantly associated with it. These findings are consistent with the main findings. Second, we add or replace some control variables to reduce the issue of omitting variables. For example, we add board of directors' characteristics such as independence, expertise, size, meetings, and chair's religiosity. In untabulated findings, we observe no change in the results of the main variables. We also include new control variables such as financial condition, year-end month, issuing new equity, auditor change, and firm's age, and observe, in unreported results, that results for the main variables are quantitatively similar to those in Table 5. Third, we use alternative approaches to run Equation (3) because this result is more interesting. Specifically, we employ interaction regression where the interaction terms for *RLGCEO* and *EXPCEO* and for *RLGACCH* and *EXPACCH* are included, in addition to their components. In untabulated results, we find these interaction terms are negatively and significantly associated with *ARL*, indicating consistent findings with those of Equation (3). We also conduct sub-sample analysis based on the religiosity groups. In unreported results, we find that the coefficients on *EXPCEO* and *EXPACCH* are negatively and significantly correlated to *ARL* for the religious group and insignificantly for the non-religious group, suggesting consistent findings with Equation (3).

We also examine the potential influence of endogeneity or bias selection on the main results. Prior research (e.g., Larcker & Rusticus, 2010) discusses several sources of endogeneity or bias-selection in accounting or auditing research. Although we have included several control variables and control for the industry and year fixed effects, we employ approaches to secure that our results are not driven by other explanations. In this analysis, we concentrate on the results of

**Equation (3).** First, we use Heckman's two-step approach. In the first step, we run two probit regressions in which *RLGEXPCEO* and *RLGEXPACCH* are dependent variables, with the firm characteristics *PROF*, *GRO*, *FSIZE*, *CURNT*, *INVRATIO*, *RECRATIO*, *LEV*, and *MBV* as predictors. From these two probit regressions, we extract Inverse Mills ratios for *RLGEXPCEO* and *RLGEXPACCH*. Then, we conduct the second step which is **Equation (3)** after including both Inverse Mills ratios. Another approach used here is propensity score matching (PSM). We first run two logistic regressions for *RLGEXPCEO* and *RLGEXPACCH* to create propensity scores for matching the samples in which the above firm characteristics are used as predictors in these regressions. We generate the first sample by matching firms with and without *RLGEXPCEO* using the closest propensity score, without replacement. A similar procedure is used for generating the second sample for *RLGEXPACCH*. Then, we regress **Equation (3)** for each sample. Overall, we find that the results for the second step of the Heckman approach and for the PSM approach indicate that a religious CEO or AC chair with accounting expertise is associated with shorter audit report lag, consistent with the main findings.

## 5. Additional analysis

### 5.1. Abnormal audit report lag

To shed more light on how the religiosity and accounting expertise of top leaders can improve the timeliness of audit reports, we conduct abnormal audit report lag analysis. A recent accounting conceptual framework emphasises the timeliness of information and contends that the value of accounting information can lose its relevance if the users are unable to access it in a timely manner (International Accounting Standards Board, 2010). Also, empirical research suggests that the shorter audit report lag is crucial for users and significantly contributes to investors' confidence (Al-Ajmi, 2008; Ettredge et al., 2006). The question we pose is whether religiosity and accounting expertise of the CEO or AC chair are associated with a considerable decrease in audit risk and effort and, if so, whether this decrease is reflected in an abnormal decrease in audit report lag.

To explore this issue, we perform two-step analysis in which we first regress the standard model of audit report lag, as suggested by E.M. Bamber et al. (1993), and extract the regression's residuals to proxy abnormal audit report lag. We then use these residuals as our dependent variable. In this analysis, we employ **Equation (3)**, after replacing *ARL* by the abnormal audit report lag because this equation is more interesting, although untabulated results suggest that religious CEOs or AC chairs are not associated with abnormal *ARL*, while only CEOs with accounting expertise are associated with abnormal reduction in *ARL*. To facilitate the analysis and interpretation of the results, we transfer the residuals to absolute values and divide the sample into three: abnormal audit report lag (*ABSABNARL*), shorter abnormal audit report lag (*SHABNARL*), and longer abnormal audit report lag (*LNABNARL*). Table 6 shows the results of this analysis. In column (1) we observe significant and positive coefficients on *RLGEXPCEO* and *RLGEXPACCH* indicating that a religious CEO or AC chair with accounting expertise is associated with abnormal audit report lag.

Columns (2) and (3) elaborate this finding to conclude whether *RLGEXPCEO* and *RLGEXPACCH* are associated with abnormal decrease or increase in the lag of audit report. Column (2) reports the results for **Equation (3)** for observations with shorter abnormal audit report lag using *ABSABNARL* as dependent variable. We find that *RLGEXPCEO* and *RLGEXPACCH* are positively and significantly associated with *ABSABNARL* indicating that a religious CEO or AC chair with accounting expertise is associated with abnormal decrease in the audit report lag. We also find from column (3) that *RLGEXPCEO* and *RLGEXPACCH* are not significantly associated with *ABSABNARL*, as we run **Equation (3)** for observations with longer abnormal audit report lag, suggesting that a religious CEO or AC chair with accounting expertise is not associated with an abnormal increase in the audit report lag. Overall, the findings in Table 6 suggest that a religious and accounting expertise CEO or AC chair is associated with an abnormal reduction in the audit report lag which implicitly provides evidence of lower risk and less audit effort.<sup>7</sup>

**Table 6. Regression results for abnormal ARL**

Variable	ABNARL					
	(1)		(2)		(3)	
	ABSABNARL		SHABNARL		LNABNARL	
	Estimates	t-statistics	Estimates	t-statistics	Estimates	t-statistics
RLGEXPCO	5.25***	(4.02)	8.80***	(4.36)	0.97	(0.48)
RLGEXPACCH	2.47***	(3.26)	2.80***	(2.65)	0.90	(0.80)
BIG4	0.47	(0.81)	0.76	(0.76)	0.03	(0.05)
ADFT	0.22	(1.19)	0.17	(0.52)	0.11	(0.47)
ADINDEXP	0.12	(0.20)	0.14	(0.15)	0.31	(0.44)
ADFE	-0.90**	(-2.13)	-1.03	(-1.17)	-0.73	(-1.54)
QAD	2.85***	(2.64)	3.82*	(1.89)	1.89	(1.61)
ACI	-2.04*	(-1.71)	-1.72	(-1.02)	-1.64	(-0.97)
ACXPRT	-2.64***	(-2.77)	-3.12*	(-1.96)	-2.75**	(-2.24)
ACS	1.10***	(2.68)	0.29	(0.41)	2.17***	(4.22)
ACMT	-0.46***	(-2.74)	-0.71*	(-1.78)	-0.44**	(-2.30)
OWS	0.02*	(1.80)	0.05***	(3.18)	0.01	(0.83)
PROF	20.22***	(5.51)	38.93***	(5.84)	11.35***	(2.67)
LEV	0.93	(0.91)	1.63	(0.98)	-0.11	(-0.09)
CURNT	0.04	(0.33)	0.037	(0.18)	-0.04	(-0.22)
LOSS	2.73***	(3.37)	5.17***	(3.85)	1.55	(1.57)
GRO	-0.58	(-0.86)	0.34	(0.28)	-0.23	(-0.35)
NEWS	0.53	(0.41)	0.41	(0.21)	0.92	(0.66)
BSEGM	.001	(0.01)	-0.34	(-0.87)	-0.27	(-0.85)
GSEGM	-0.12	(-0.73)	-0.62**	(-2.46)	0.32	(1.20)
FSIZE	0.64	(1.04)	0.04	(0.03)	0.97	(1.27)
INVRATIO	9.70***	(3.80)	13.40***	(3.23)	6.16*	(1.80)
RECRATIO	5.69***	(3.57)	6.13**	(2.41)	7.66***	(3.95)
MBV	0.13*	(1.67)	-0.05	(-0.37)	0.19*	(1.93)
INDFIX	YES		YES		YES	
YFIX	YES		YES		YES	
CONST	10.20**	(2.46)	12.71	(1.62)	3.38	(0.69)
Observations	724		329		395	
P-value	0.001***		0.001***		0.001***	
R-squared	0.21		0.30		0.25	
Max VIF	2.74		3.29		2.98	

\*\*\* p < .01, \*\* p < .05, \* p < .1

ABNARL is an indicator for abnormal ARL; ABSABNARL is the absolute values of residuals extracted from the standard ARL model; SHABNARL is an indicator for a sample of firms with abnormal shorter ARL; LNABNARL is an indicator for a sample of firms with abnormal longer ARL; See Table 2 for definitions.

## 5.2. Analysis of interaction between auditor type and religiosity and accounting expertise

The assessment of risks and required effort can vary according to whether the auditor is a Big4 or non-Big4 audit firm. The general view is that Big4 audit firms are conservative and have sufficient incentives to reduce the risks, leading to a higher level of effort than non-Big4 audit firms (DeAngelo, 1981; DeFond & Zhang, 2014; Shakhathreh et al., 2020). However, the audit report lag research suggests that Big4 audit firms are equipped with highly qualified partners and staff, state-of-the-art technology, and innumerable resources that enable them to produce timely reports,

implying less effort and fewer audit tests (e.g., Baatwah et al., 2015a; Wan-Hussin & Bamahros, 2013). The results in Table 5 challenge this latter claim and suggest that Big4 audit firms are more sensitive in assessing the risk of fraudulent reports and putting conservative trust in their clients. Thus, we extend our study by examining whether auditors interact differently with religiosity and accounting expertise in the context of audit report lag.

To explore this issue, we interact *BIG4* with *RLGCEO*, *RLGACCH*, *EXPCEO*, *EXPACCH*, *RLGEXPCEO*, and *RLGEXPACCH* respectively.<sup>8</sup> Table 7 reports the results for the three equations after including the interaction terms *RLGSCEOBG4*, *RLGSACCHBG4*, *EXPTCEOBIG4*, *EXPTACCHBIG4*, *RLGEXPCEOBG4*, and *RLGEXPACCHBG4*. In column (1), we observe that the coefficients on the interaction terms of *RLGSCEOBG4* and *RLGSACCHBG4* are negatively associated with *ARL* but highly significant for *RLGSACCHBG4*, indicating that Big4 audit firms interact with a religious AC chair more than a religious CEO, as reflected in the shorter audit report lag. We also find in column (2) that *EXPTCEOBIG4* has a positive and significant coefficient while *EXPTACCHBIG4* has a negative and significant coefficient, suggesting that Big4 audit firms interact with AC chairs with accounting expertise more than CEOs with accounting expertise. Further, we observe a positive and significant association between *RLGEXPCEOBG4* and *ARL* and a negative and significant association between *EXPTACCHBIG4* and *ARL*, suggesting that Big4 audit firms significantly interact with a religious and accounting expertise AC chair, resulting in shorter audit report lag, than with a religious and accounting expertise CEO. Overall, the results suggest that the effect of religiosity and accounting expertise on lowering the auditor's assessment of risks and effort is more obvious for Big4 audit firms if the religious and accounting expert is the AC chair.

## 6. Conclusion

Timely reporting is still a prominent issue with policymakers, and a large number of capital market authorities worldwide have adopted guidelines to promote more timely information. We know very little about the influence of religiosity on the timeliness of financial reports, specifically on audit report lag. Thus, we explore in this study how religiosity and accounting expertise affect this lag. Unlike prior research (e.g., Gul & Ng, 2018; Leventis et al., 2018), we examine the religiosity effect at the level of individuals, specifically the CEO and AC chair, instead of at the society level. Using 724 observations for a unique setting, we find that the religiosity of the CEO or AC chair is not associated with timely audit reporting as proxied by a shorter lag. We also find evidence consistent with prior research indicating that accounting expertise of the CEO or AC chair is associated with shorter audit report lag. Further, we document that CEOs or AC chairs who combine these characteristics contribute to a significant reduction in audit report lag. We observe similar findings when we change the measurement of audit report lag, add further control variables, and control for the potential threat of endogeneity. We observe in additional analysis that a religious CEO or AC chair with accounting expertise is associated with abnormal audit report lag, specifically abnormal shorter lag, and that Big4 audit firms interact with AC chairs with accounting expertise or religious and accounting expertise more than with CEOs with similar characteristics.

Based on the findings of this study, we offer theoretical and practical contributions. First, we extend the audit report lag literature by providing evidence that religiosity does not support timely audit reports unless this trait is combined with accounting expertise. This evidence is the first to link religiosity with audit report lag. Second, we extend the religiosity literature by documenting that the religiosity of managers or directors affects the behaviour of external auditors in the context of audit report lag. This study is the first to document this finding; it suggests that auditor assessment of risks and effort is influenced more by religiosity at the managers/directors level, not at the society level in which they work. Third, our findings have implications for auditors, firm's policymakers and regulators. For example, our findings suggest that auditors can reduce the pressure to meet the recent trend in capital market policy of shortening disclosure deadlines by considering the accounting expertise and religiosity of top leaders. As for firms' policymakers, such as the board of directors and shareholders, our results indicate that decisions concerning

**Table 7. Regression results for the interaction between high-quality auditor and the religiosity and accounting expertise**

Variable	ARL					
	(1)		(2)		(3)	
	Estimates	t-statistics	Estimates	t-statistics	Estimates	t-statistics
RLGCEO	0.03	(0.02)				
RLGACCH	5.48***	(2.93)				
EXPCEO			-9.03***	(-3.55)		
EXPACCH			-0.60	(-0.34)		
RLGEXPCEO					-20.89***	(-6.37)
RLGEXPACCH					0.41	(0.16)
BIG4	4.71***	(2.72)	-1.42	(-1.28)	-0.91	(-0.95)
RLGSCCEOBG4	-1.12	(-0.57)				
RLGSACCHBG4	-7.19***	(-3.41)				
EXPTCEOBIG4			9.29***	(3.23)		
EXPTACCHBIG4			-4.19**	(-2.23)		
RLGEXPCEOBG4					14.65***	(3.06)
RLGEXPACCHBG4					-7.59***	(-2.62)
CONTROLS	YES		YES		YES	
INDFIX	YES		YES		YES	
YFIX	YES		YES		YES	
CONST	35.94***	(4.42)	45.20***	(5.94)	52.47***	(7.12)
Observations	724		724		724	
P-value	0.001***		0.001***		0.001***	
R-squared	0.30		0.32		0.34	
Max VIF	8.03		4.30		4.22	

\*\*\* p < .01, \*\* p < .05, \* p < .1

RLGSCCEOBG4 is the interaction term between CEO religiosity and Big4 audit firms; RLGSACCHBG4 is the interaction term between AC chair religiosity and Big4 audit firms; EXPTCEOBIG4 is the interaction term between CEO accounting expertise and Big4 audit firms; EXPTACCHBIG4 is the interaction term between AC chair accounting expertise and Big4 audit firms; RLGEXPCEOBG4 is the interaction term between religious CEO with accounting expertise and Big4 audit firms; RLGEXPACCHBG4 is the interaction term between religious AC chair with accounting expertise and Big4 audit firms; CONTROLS is an indicator for the included control variables; See Table 2 for definitions.

nominating director(s) to the board or appointing executive manager(s) should be taken only after a careful assessment of the candidate's religiosity and expertise. This is more likely to result in improvement in the reliability and relevance of accounting information disclosed by the firm. Finally, regulators can benefit by considering our findings in cases which might further shorten the disclosure deadlines. Our results suggest that firms and auditors can make accounting information available for public users in a short time if the firms have leaders who are religious and/or have accounting expertise. Thus, regulators can ensure that firms and auditors are able to meet the new disclosure deadlines if the policy is complemented by recommending or requiring firms to consider the accounting expertise and religiosity of their top leaders.

Our study is not free from limitations. First, we rely solely on affiliation to a single religion, Islam, as the measure of religiosity. Although prior research suggests that Muslims are more religious, we cannot assume that there is no variation in the degree of religiosity of individuals. We also encountered difficulty in finding data for other senior managers with financial reporting responsibility, for example, CFOs. Thus, we encourage future research to employ a qualitative approach or survey to measure religiosity. Finally, although our findings may be applicable to several countries, we encourage readers to be careful in generalising them to countries with different institutional and cultural characteristics.

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#### Author details

Abood Al-Ebel<sup>1</sup>

E-mail: [aboodalebel@hu.edu.ye](mailto:aboodalebel@hu.edu.ye)

Saeed Baatwah<sup>2,3</sup>

E-mail: [sbaatwah@yahoo.com](mailto:sbaatwah@yahoo.com)

ORCID ID: <http://orcid.org/0000-0001-8357-9908>

Mahfoudh Al-Musali<sup>1</sup>

<sup>1</sup> Accounting Department, Hadhramout University of Science and Technology, FWA, Hadhramout, 009675, Yemen.

<sup>2</sup> Accounting Department, Seiyun University, Hadhramout, 009675, Yemen.

<sup>3</sup> Accounting Department, Shaqra University, Afif, Saudi Arabia.

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#### Notes

1. We recognise that the Chief Financial Officer (CFO) is the manager most involved in the financial reporting process, and has an influence on the quality of this process. However, we are unable to collect data for this manager because most sampled firms do not disclose sufficient information about the CFO. Thus, as the CFO is subordinate to the CEO and the CEO is the ultimate manager responsible for performance and reporting in the firm, we assume the CEO as influential in the process of reporting and internal control.
2. In comparison with the US, UK, Malaysia, and China among others, we consider Oman as a single-religion country; there are very few non-Muslims. In Omani corporate business, it is nevertheless common to hire employees and managers/directors from non-Muslim countries such as the US, UK, Canada, India and the Philippines who are themselves mostly non-Muslims (Al-Hamadi et al., 2007).

3. We note that when examining the impact of social capital on audit report lag in the additional analysis, Jha and Chen (2015) include religiosity as a control variable and find that it is associated with longer audit report lag. In fact, their study fails to discuss the channel(s) through which religiosity will influence the lag and, similar to US research, measures religiosity based on that of society and not the individual manager or director.
4. We use alternative approaches to run this equation. However, we prefer Equation (3) over interaction or sub-sample approaches for at least three reasons. First, results for the components of interaction terms are inconsistent with the results in equations (1) and (2). This inconsistency is traced to high correlation between these components and their interaction terms, and these components are dichotomous variables, that is, it is impractical to eliminate the collinearity between them using a centring method. Second, sub-sample analysis reduces the statistical power of regression because the sample size for each group becomes smaller than the full sample. Finally, we have no strong theory suggesting the moderator variables, whether accounting expertise or religiosity.
5. We note that generalising all Muslims as being religious and uninvolved in unethical behaviour is not guaranteed. However, the basic Islamic teachings encourage and reinforce morality and ethical behaviour. Thus, consistent with McGuire et al. (2012) and Dyreng et al. (2012), we can anticipate, on average, that the strength of Muslims' adherence to Islamic teaching is less likely to be associated with irregular conduct.
6. We opt for excluding or not reporting the results for the robust analysis for reasons of space; they can be supplied on request.
7. We wonder if focusing on short audit report lag may force the auditor to sacrifice the quality of the audit. Knechel and Sharma (2012) posit and report that shorter audit report lag is less likely to be associated with low-quality audit proxied by lower discretionary accruals and restatement incidence. Further, it is suggested that when auditors reduce their effort and tests for a given reason, for example, religiosity, this does not imply that the auditor is violating the standards; rather it is a type of auditor's prudence in assessment



of the potential poor quality of reports (Jha & Chen, 2015). Thus, we presume that shorter audit report lag is not an indicator of lower-quality reports.

8. In this analysis, we observe results that are inconsistent with the main ones for some important variables (e.g., *RLGACCH*, *EXPACCH*, *RLGEXPACCH*, and *BIG4*). We follow up the cause and find that there is a high correlation between these variables and their components. Thus, we use sub-sample analysis to robustly answer the question in this section. Using Big4 and non-Big4 sub-samples, in unreported results, we find similar results to those reported in Table 7.

## References

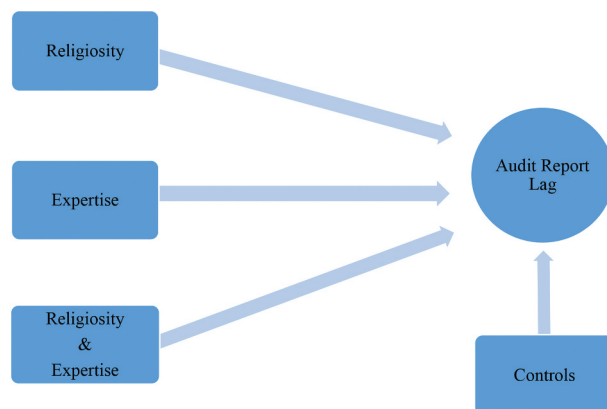
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## Appendix A

**Appendix A: Figure for the proposed research model**





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