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Who Appropriates Centrality Rents? The Role of Institutions in Regulating Social Networks in the Global Islamic Finance Industry

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ABSTRACT

This study explains and tests the effects of country-level institutions on the distribution of centrality rents between two sets of actors in an interorganizational network. Building on the literature on corporate elites, we propose that a cohesive elite following organizational logics other than profit-maximization diverts centrality rents and induces costs on firms, and that macro institutions act as external governance mechanisms to shape this relationship. We develop our theory in the emerging Islamic finance industry, where "Shariah scholars" connect firms and constitute a religious corporate elite. While central scholars in this network create legitimacy for firms, they also shirk and cause information leakage suggesting a negative centrality-performance relationship for the firms. Country-level institutions such as government regulation and democracy, we argue, ameliorate these effects by influencing this religious elite's institutional logic and restraining their actions, while institutions developed from within the industry strengthen the power of the elite. Testing our theory in a network of 367 scholars and 396 institutions over 31 countries using multi-level methods, we indeed find a negative centrality-performance relationship that is ameliorated by stronger government regulation but exacerbated by better-developed industry-specific institutions, as well as a negative relationship between democratic and regulatory institutions and centrality.

Keywords: network theory, institutional environment, firm performance, corporate governance, networks, emerging markets, multi-level analysis

Inspired by the new institutionalism in economics (Acemoglu & Robinson, 2012; North, 1990) and sociology (DiMaggio & Powell, 1983; Scott, 1995), the institution-based view of strategic management has shown that country-level institutions constrain and enable the strategic actions of managers and firms (Ingram & Silverman, 2002; Oliver, 1997; Peng, 2002; Peng & Heath, 1996; Peng, Wang, & Jian, 2008). Yet, academic inquiry into the embeddedness of social networks within these institutions has been limited to studies that have explored how such institutions moderate the effects of structural holes (Vasudeva, Zaheer, & Hernandez, 2013) or density (Shaner & Maznevski, 2011) on firm performance. Hence, the effects of country-level institutions on the determinants, consequences or dynamics of other network characteristics remain largely unexplored.

In this paper, we argue that one network-related phenomenon on which country-level institutions have a strong effect is the distribution of centrality rents. Earlier studies on networks have shown that a group of central actors (e.g., managers) can form a 'corporate elite' and utilize the network for the parochial benefit of the group while causing losses for another group of actors (e.g., shareholders) (Davis, 1991; Useem, 1984). However, most prior work has been performed in single country settings and has focused on one specific type of network – interlocking directorates – and conflicting results have been reported (e.g., Martin, Gözübüyük, & Becerra, 2015; Mizruchi, 1996; Non & Franses, 2007; Peng, 2004). We challenge the assumption in this literature that the socio-economic dynamics among the elites and the organizations to which they are tied are independent of the institutional context. Specifically, our research question is: How does the institutional environment affect the distribution of centrality rents between two sets of

actors in a network? In other words, how does the country-specific institutional context affect who appropriates more of the rents from centrality and who bears the costs – the organization that hires central actors and hopes to benefit from their knowledge or reputation, or the central actors themselves?

We utilize the rapidly evolving Islamic finance (IF) industry and the interlocking network of Shariah scholars, who play a very active role in this industry, as the setting to develop and test our hypotheses. Emerging from comparatively less developed economies, the IF industry has evolved into a global industry with presence in over 30 countries. Shariah scholars are experts in Islamic law and they populate the so-called 'Shariah boards,' which give legitimacy to an organization as an Islamic Financial Institution (IFI) (e.g., Al-Salem, 2009; Y-Sing, 2014) and are active in developing and approving the Shariah compliance of new products and in designing Shariah-compliant business operations and practices (e.g., Awais & Tipu, 2014; Grais & Pellegrini, 2006).

Our key insights are as follows: First, IFIs depend on Shariah scholars to create, approve and legitimize Shariah-compliant Islamic banking products to obtain profits. However, Shariah scholars form a 'religious elite' that is not primarily driven by a profit maximization logic but rather by service to a deity, thereby creating a conflict of interest with owners of IFIs who have both religious and financial interests. Second, the legitimization and information benefits from having well-connected – central – Shariah scholars on a Shariah board are offset by the lower attention 'busy' scholars can devote to the firm as well as information leakage across firms. These effects are, to an extent, amplified when IFIs rely on scholars that are central within the network of IFIs in the focal firms' home countries where firms directly compete with each other. Finally, the

negative financial consequences of relying on a few central Shariah scholars are mitigated in countries with strong institutions and regulatory regimes; in such regimes, firms may benefit from hiring central scholars. By contrast, attempts at self-regulation from within the industry tip the balance towards Shariah scholars and against the firms.

Our study contributes to the emerging literature on the relationship between institutions and networks (Shaner & Maznevski, 2011; Vasudeva et al., 2013) by showing how the institutional context affects the benefits that actors receive and the costs that they incur from their centrality in social elite networks. Additionally, we aim to contribute to resolving the contradictory findings in the literature on social elite networks (e.g., Martin et al. 2015; Mizruchi, 1996; Non & Franses, 2007) by using a multiple-country approach to tease out the effects of the institutional context on the relationship between the centrality of firms in social elite networks and their performance. We also add to the discussion on whether industry-specific developments lead to a global convergence of standards (Khanna & Palepu, 2004; Shleifer & Vishny, 1997) by identifying the regressive tendencies of industry self-regulation under the condition of a strong elite group that is dominant. Further, we broaden the lens of interlocking to include elite groups that are outside the firm hierarchy. While this has been neglected, as most research has focused on the top executives who create high-level interlocking networks among firms[1], we argue that Shariah scholars, as well as groups such as consultants, auditors or lawyers, perform very similar activities with economically significant impacts on firms. Finally, while there is a substantial body of research on the effects of corporate governance in IFIs (e.g., Hayat, Butter, & Kock, 2013; Li, Armstrong, & Clarke, 2014; Mollah & Zaman, 2015; Safieddine, 2009), our study is the first to examine this issue by

focusing on the crucial role of the network of Shariah scholars in interaction with institutions across countries.

ISLAMIC FINANCE INDUSTRY AND THE ROLE OF SHARIAH SCHOLARS

Islamic finance is a recent but fast growing financial sector with 2016 assets of nearly US$1.8 trillion (Ünal, 2011; IFSB, 2017). The industry is active in approximately 35 different markets, including Western countries, such as the UK, the US, and Germany (IFSB 2017). Per Imam and Kpodar (2010), historically, most financial activities in Muslim countries were carried out according to the Shariah (Islamic jurisprudence), but during the 19th century, Western business law gradually replaced its Islamic equivalent. Starting 1963 in Egypt, the sector experienced a revival that gained impetus with the setting-up of two standard setters: AAOIFI (Accounting and Auditing Organization for Islamic Finance Institutions) in 1992 in Bahrain and IFSB (Islamic Finance Services Board) in 2002 in Malaysia. Wealth effects from increasing oil prices fueled the development of IF, and, per Grais and Pellegrini (2006: 1), *"its reemergence was [also] prompted by the introduction of innovative Islamic financial products and a demand by Muslim populations for financial services compatible with their religious beliefs."*

Like traditional financial institutions, IFIs are profit-maximizing entities that act as intermediaries between savers and investors and offer custodial and other services (Imam & Kpodar, 2010). Yet, IFIs face a set of restrictions based on Shariah law that include prohibitions on charging interest (*Riba*) or engaging in illegal activities, such as gambling or alcohol (*Haram*), bans on speculation and games of chance (*Maysir* and *Gharar*), and the requirement to pay part of the firm's profits to benefit society (*Zakat*) (El-Gamal, 2006).

The body that is specifically responsible for supervising Shariah compliance, and a legal requirement for granting an Islamic banking license in many countries (Grais & Pellegrini, 2006; Safieddine, 2009), is the Shariah 'board' of each IFI. This board consists of multiple Shariah scholars with backgrounds in Shariah, Islamic or general law, whose primary functions are *"certifying permissible financial instruments through fatwas [religious edicts] …, verifying that transactions comply with issued fatwas …, calculating and paying Zakat, disposing of non-Shariah compliant earnings, and advising on the distribution of income or expenses among shareholders and investment account holders"* (Grais & Pellegrini, 2006: 4). The faith-based nature of the Islamic banking business (Hassan, Ibrahim, Abdullah, Aziz, & Sawari, 2010) thus results in the Shariah board becoming an additional governance layer charged with attending to the uniquely Islamic agency problem of reconciling the religious demands of IFI customers, who are very concerned about the Shariah-compliant use of their investments, with the profit goals of the IFI (Safieddine, 2009).

For an IFI, this is in addition to the usual governance structure that is dominated by the board of directors for addressing the classic agency problem between owners and managers. Therefore, some scholars view the importance of Shariah scholars to be on par with that of the firm's CEO or board of directors (Hassan et al., 2010). Yet, while the IFI's organizational structure is formed, as in conventional firms, by the executives and the board of directors who monitor those executives, the Shariah board performs a crucial role that, we believe, can best be described as 'outside the hierarchy' – they are not managing the firm per se, but without their contracted services, an IFI could not function.

In addition to this governance role, Shariah scholars are also a central part of the

product innovation process in this industry. In fact, *"it was the ability of religious scholars and Islamic jurors to use the Shari'ah adaptability to develop an alternative to interest-oriented financial transactions that laid the foundation for the first Islamic banks"* (Institute of Islamic Banking and Finance, 2017). Concurrently, as many Islamic customers question whether Islamic finance products are truly 'Islamic' (Al-Salem, 2009), product innovation appears to be of crucial importance to help the industry grow and mature. Stubing (2016: 40), for instance, explained that *"innovation, whether in products or processes, is a crucial differentiator in a market in which Islamic institutions compete with conventional banks as well as each other*," and Al-Salem (2009) and Awais and Tipu (2014) showed that IFIs create bespoke instruments and uniquely Islamic finance products. Shariah board involvement in these innovation tasks is crucial, as they have to approve all products to ensure true Shariah compliance (Grais & Pellegrini, 2006), confer legitimacy to these Islamic finance products (Al-Salem, 2009), provide information on best practices from other firms, and generally be a part of the product development process from idea creation to implementation (Awais & Tipu, 2014).

Shariah scholars often enjoy a multiplicity of ties and exert influence not only through board seats in profit-oriented IFIs but also by providing consulting and auditing services and serving on international standard setting organizations as well as the Shariah boards of central banks (Ünal, 2011). Across countries, we observe a rather large variety of regulations regarding the composition of Shariah boards, the appointment or dismissal of Shariah scholars to the boards, decision making processes, permit requirements and so on (Grais & Pellegrini, 2006). By the end of July 2010 we counted a total of 1392 Shariah board positions in profit-oriented financial services companies across 32 different

countries, with an average board size of 3.47 scholars. Particularly interesting for our study is the relatively high centralization of scholars, with the top 10 scholars holding 450 (32.32%) and the top 100 scholars holding 953 (68.46%) of all board positions. The top two scholars even have 85 positions each (Ünal, 2011; Grais & Pellegrini, 2006).

Shariah Scholars as a Corporate Religious Elite

Building on Useem's (1984) work, a significant amount of literature (e.g., Davis, 1991; Davis & Greve, 1997; Palmer & Barber, 2001; Westphal & Shani, 2016) has analyzed the role of 'corporate elites,' which are typically defined as *"the social group comprised of the top managers of large corporations who sit on multiple boards of directors of large firms"* (McDonald & Westphal, 2010: 343). Useem (1984: 202) suggested that reaching a first executive position as well as, perhaps, *"old school ties"* and *"signs of proper breeding"* allow for entry into the *"trans-corporate network,"* but that the subsequent experience of acting on various boards provides for a broader understanding of the interests of the corporate elite and thus gives rise to a *"classwide rationality,"* or what Thornton and Ocasio (1999) would call an *'institutional logic.'* As Davis (1991: 593) succinctly puts it: *"Due to this broader outlook, directors of multiple boards come to act as agents of the corporate elite as a class rather than strictly as agents of the shareholders of particular firms."* As a result of this, networks often work as mechanisms of elite cohesion (Useem, 1984). For example, Davis (1991) found that the 'poison pill,' a managerial response to hostile takeovers that tends to benefit managers but harm shareholders, diffused through interlocking directorships, illustrating that interlock networks can act as a tool for social cohesion for the corporate elite of managers even against the interests of shareholders.

In much the same way, we argue, the international network of Shariah scholars forms a well-defined corporate elite that revolves around a strong, shared religious belief system that is continually reinforced through interactions of like-minded scholars on many Shariah boards. Coupled with the importance of their role for IFIs, and the entry requirement that Shariah board members *"shall be practicing Muslims who preach what they believe"* (Laldin, 2017, no page number), we find it reasonable to assume that these scholars will form a strong elite community around their religious belief system and develop a sense of self-worth and importance, as well as a desire to maintain and defend the elite, its foundational religious priorities, and the resulting power and privileges.

Yet, while the members of the traditional corporate elite – executives and other directors – are essentially the 'agents' for shareholders (the 'principals') and are charged with maximizing firm profits (Jensen & Meckling, 1976), Shariah scholars, as agents, are tasked not with profit maximization but with upholding religious imperatives. That is, their principal in this case is a religious deity (Al-Salem, 2009; Laldin, 2017; Safieddine, 2009). This priority of religious values over the interests of IFIs as their nominal principals is also reflected in the description of scholar's duties by the Islamic standard setters (IFSB, 2017; Laldin, 2017). While IFI shareholders and Shariah scholars share religious preferences (Grais & Pellegrini, 2006; Safieddine, 2009), a conflict of interest arises as the shareholders (especially of 'for profit' IFIs) also have private financial goals. We argue that a strong focus on faith, coupled with the nature of religion as a dogma, is quite likely to lead to a very strong classwide rationality (Useem, 1984) or institutional logic (Thornton & Ocasio, 1999) for this international group of Sharia scholars that we term the 'corporate religious elite.'

THEORY AND HYPOTHESES

Shariah scholars' know-how about Shariah, finance, legal and other areas and their prestige are critical in creating and approving genuine Islamic finance products and legitimizing (Rao, 1994; Suchman, 1995) these products to faith-based investors. Accordingly, an IFI has an incentive to hire those scholars who bring the necessary know-how and who have high prestige in the industry.[2] Furthermore, the more often Shariah scholars engage in product development or Shariah audits, the more proficient they should become at these tasks according to learning theory (e.g., Levitt & March, 1988). In turn, this suggests that the more board seats a scholar already has, the more valuable his knowledge will be. Additionally, a multitude of board seats should also anchor a scholar more strongly in the corporate religious elite, thus further enhancing his prestige. Highly visible Shariah scholars are indeed held in great esteem (Ünal, 2011; Y-Sing, 2014), which, in turn, bestows *"trust and credibility in the operation of these institutions"* (Al-Salem, 2009: 193) and leads to a context in which we observe a small number of central scholars with knowledge and prestige working across many firms.

The network of Shariah scholars and IFIs is very similar to the aforementioned and often researched interlocking corporate directors setting (e.g., Haunschild & Beckman, 1998; McDonald & Westphal, 2010; Mizruchi, 1996; Zajac, 1988), where firms are connected to each other through directors sitting on multiple boards. Analogously, Shariah scholars, by virtue of sitting on the boards of various IFIs, connect these different firms in a network of the Islamic finance industry. Being 'central' in this network implies for an IFI that its Shariah scholars have many other board seats and, thus, provide knowledge, prestige and legitimacy – benefits that are akin to those that accrue to a focal

firm from interlocking corporate directorates (Mizruchi, 1996). Yet, this beneficial centrality of firms is, in fact, derived from the centrality of the Shariah scholars themselves, bestowing a high degree of power on these providers of critical resources.

Governance Issues related to Shariah Boards

Following basic agency logic (e.g., Fama & Jensen, 1983; Jensen & Meckling, 1976), the presence of powerful central scholars who may act in their own self-interest might lead to behavior that exploits such power while being detrimental to the interests of the nominal principal (the IFIs who pay them). Complicating the issue in the IF industry is that the 'true' principal that the scholars steeped in the corporate religious elite serve appears to be their deity. We therefore would expect less intentional rent seeking by these scholars in terms of aggressively exploiting their power to extract large payments from any one IFI. Rather, we suspect that, in addition to the monetary incentive from multiple appointments, their religious dedication and sense of importance may lead these scholars to assume a great many board seats. Yet, regardless of whether a scholar's amassing of board seats is driven by self-interested financial goals or by well-intentioned concern about ensuring good Shariah governance, a high concentration of board seats comes with a number of corollaries and potential collateral damage. Specifically, taking on dozens of board seats, first, amounts to rent extraction across the network rather than from any one firm; second, it may lead to problems of underperformance, mirroring the 'busy directors' hypothesis in the interlock literature (Core, Holthausen, & Larcker, 1999); and third, it could cause damaging information leakage across firms.

On the first count, the most central Shariah scholars clearly derive considerable economic gains from their numerous board appointments, with estimates of annual

compensation ranging up to US$4,500,000 (Hayat et al., 2013: 609). Yet, these amounts are earned across a large number of board seats and, therefore, likely do not materially affect any one IFI. Rather, this rent-extraction from the overall network of IFIs becomes damaging to individual firms if scholars neglect to perform their work in terms of the development and supervision of Shariah compliant products, thereby undermining the process of value creation inside the firms. In fact, having some scholars sit on up to 85 different Shariah boards gives Core et al.'s (1999: 383) notion of 'busy directors' (three or more appointments for outside directors of corporate boards) an entirely new meaning. Fich and Shivdasani (2006), for example, found busy boards (with multiple 'busy' directors) to neglect their monitoring duty as they are simply overtaxed and distracted, while other studies reported negative effects on firm value (Loderer & Peyer, 2002; Santos, da Silveira, & Barros, 2012) or excessive CEO pay (Core et al., 1999). Likewise, Shariah scholars that divide their attention between dozens of boards will have very little time for any one board. While these 'busy scholars' are not taxed with overseeing and monitoring the whole firm, they do form an important bottleneck in the development and launch of Islamic banking products, as discussed above. Hence, being that busy might lead to scheduling difficulties, little attention paid to each IFI's product pipeline, and a generally low quality of work. Accordingly, what we observe is a classic agency problem, where scholars intentionally or unintentionally 'shirk' their obligations to individual IFIs (e.g., Jensen & Meckling, 1976) while extracting rents from the network.

A related agency-problem stems from the conflicts of interests that Shariah scholars face. Since networks are the pipes through which information travels, highly central individuals will have access to more information (Ahuja, 2000; Podolny, 2001; Uzzi,

1996). For firms, this implies a potential for information 'leaking' from the company as much as for obtaining information. Cotter, Shivdasani and Zenner (1997) and Loderer and Peyer (2002) discuss such issues for interlocked corporate directors – particularly in a takeover context prone to strategic maneuvering, information leakage could shift bargaining power significantly and result in large negative effects for the side not favored.

In the Shariah network, since these scholars are typically not involved in M&A activity or similar corporate strategies, we would argue that such conflicts of interest are of a more operational nature, revolving around the involvement of Shariah scholars in the development of new financial instruments. Specifically, Shariah scholars with knowledge of which products a certain IFI intends to launch may intentionally or inadvertently leak that information to its competitors, thereby likely prompting the receiving firms to match or beat the product features planned by the focal firm.[3] Whether products are directly copied or altered somewhat, customers will have more alternatives for the same product attributes. This reduction of differentiation suggests that the market structure shifts towards perfect competition, implying increasing price competition and profit margins that move towards zero (e.g., Porter, 1991). By thus commoditizing the industry, neither firm wins and the industry overall, while providing more value to customers, loses profits. Scholars may cause such leaks intentionally to further their personal interests (e.g., to impress other IFIs to win more board seats) or because they follow their religious elite logic and attempt to ensure that all IFIs offer true Islamic products. As one scholar states: *"[Shariah scholars] explain the rule of Allah in the issues presented to them, and their fatwas are not considered the property of the mustafti [questioner] who asks them,*

such that the rule of Allah cannot be given to someone else" (Gulf News, 2010, no page number). Hence, as scholars believe that they adjudicate a higher authority's will that is not owned by any given firm, their main concern will be the development of religiously correct products and they will see no harm in discussing these with other scholars; to the contrary, they even may consider it their duty to spread such products for the benefit of the industry, without giving consideration to the competitive implications for individual firms. Overall, we suggest the following hypothesis:

H1a: There will be a negative relationship between a firm's centrality in the Shariah board network and its financial performance.

While the preceding discussion has focused on negative agency problems, we have earlier identified knowledge, prestige and legitimacy as positive contributions of central Shariah scholars, which form the likely reason why firms hire these scholars in the first place. Given that we have two countervailing arguments, we would expect the final effect to be an inverted u-shape in the sense that initially increasing centrality adds knowledge and credibility to an IFI's Shariah board and thus creates a positive effect that can be appropriated by the firm. Yet, as scholars become more central, such positives are outweighed by the scholars increasingly becoming busy and leaking information.

H1b: There will be an inverted U-shape relationship between a firm's centrality in the Shariah board network and its financial performance.

Local vs. International Information Leakage

While interlocked directors of the commonly considered corporate elite typically do not serve on the boards of directly competing firms (e.g., 15 U.S. Code § 19 prohibits interlocks between direct competitors), for a Shariah scholar looking for additional board

seats, there is very little choice but to serve on other IFIs that are competing in the same industry. Such interlocks between directly competing firms created by scholars with in-depth product development knowledge, we argue, will give rise to mixed effects depending on the degree of direct competitive interaction between the different IFIs. Specifically, if firms directly compete in product markets, then, as we discussed above, leakage of product-related information will likely lead to rampant imitation and commoditizing pressures on the industry. On the other hand, if the firms' markets do not directly overlap, this commoditizing effect should be less important.

At the time of our study, IFIs competed mostly locally (e.g., Euromoney, 2006; Middle East Insurance Review, 2014). Therefore, we would expect that firms that are highly central within a given country (i.e., whose scholars have multiple other board seats with local firms) will experience the commoditization effect that we have identified above. Conversely, for firms that are central in the international network (i.e., whose Shariah scholars have other appointments across national borders), the ideas from an IFI in one country may stimulate the product innovation of IFIs in other countries (Scalera, Perri, & Hannigan, 2017; Turkina & Van Assche, 2018) and thus create value for these firms without the collateral damage of undermining the local industry structure. Combined with the 'busyness' issue that we expect to be strictly negative, we are thus left with a double negative effect within a country, while internationally, we expect the negative performance effects of busy directors to be balanced with positive effects from innovative stimuli due to leakage. Formally, we hypothesize the following:

H2: The negative relationship between an IFI's centrality and financial performance will be stronger for domestic than for international centrality.

Institutions and Governance

Institutions are *"the rules of the game in a society … the humanly devised constraints that shape human interaction,"* (North, 1990: 3) and are *"regulative, normative, and cognitive structures and activities that provide stability and meaning to social behavior"* (Scott 1995: 33). In recent decades, the new institutionalism (Acemoglu & Robinson, 2012; DiMaggio & Powell, 1983; North, 1990; Scott, 1995) has led to an institution-based view of strategic management (Ingram & Silverman, 2002; Oliver, 1997; Peng, 2002; Peng & Heath, 1996; Peng et al., 2008). Per this view, formal and informal institutions combine to constrain and enable managers' actions and firms' strategic choices (Banalieva, Cuervo-Cazurra, & Sarathy, 2018; Doh, Rodrigues, Saka-Helmhout, & Makhija, 2017) such as internationalization (Arregle, Miller, Hitt, & Beamish, 2016) or merger and acquisition decisions (Kim & Song, 2017), essentially functioning as external governance mechanisms (Griffin, Guedhami, Kwok, Li & Shao, 2017; Walsh & Seward, 1990). The level of institutional development, furthermore, varies across countries (Aguilera & Jackson, 2010; Cuervo-Cazurra & Genc, 2008; Khanna & Palepu, 2010; Van Hoorn & Maseland, 2016). Accordingly, we argue that the quality of the institutions in a country will help to shape or influence the institutional logic of the Shariah religious elite, as well as to act as a restraint on the actions of the scholars. More formally, we expect both a mediation effect in that institutions may directly affect centrality, which in turn impacts performance, as well as a moderating effect of institutions on the effect of centrality on firm performance.

Country-level Institutions. Institutions, such as the quality of the judicial and democratic systems that affect everybody, define the level of governance at the country level (Kim &

Ozdemir, 2014; Miletkov, Poulsen & Wintoki, 2017). By pervading the environment that individual actors exist within, strong institutions should lead to the internalization of norms, ideas and behaviors (Scott 1995), such as lawful conduct, opposition to corruption, and so on, by individual actors and thus to the emergence of a corresponding institutional logic (Thornton, 2004; Thornton & Ocasio, 1999), which, in turn, likely affects and constrains the behavior of actors.

Typically defined as *"a government in which the supreme power is vested in the people and exercised by them directly or indirectly through a system of representation"* (Merriam Webster Dictionary), democracy creates more inclusive environments that provide voice and influence for a variety of social groups rather than restricting power to one ruling elite. If such democratic institutions prevail in a country, we would expect that the norms of inclusiveness and balance between social groups should be internalized by the actors operating in that environment. Accordingly, an elite group with an institutional logic that may otherwise narrowly focus on its own foundational requirements – such as religious priorities – might be challenged, and its logic broadened in the process. Instead of narrowly maintaining a religious focus, scholars may incorporate concerns for other actors, such as the IFI they work for, customers, or shareholders. While such a change in institutional logics may be construed as betraying religious imperatives to cater to other groups (see, e.g., concerns about 'Fatwa shopping' as an IFI might try to find the most lenient Shariah scholars – IFSB, 2009: 25), we argue that a key positive effect of integrating democratic norms can occur without violating religious prudence. Moving their focus away from a sole concern with religious issues and introducing a more balanced view of their duties to multiple stakeholders may lead to more conscientious

scholar behavior that also considers such potential negative effects as an inability to carry out their duties (financial and religious) if they spread themselves too thin. Accordingly, scholars may defer from adding more board seats and concentrate their work instead, thereby alleviating the busy scholar problem, leading to better financial – and potentially religious – outcomes. By assuming fewer board seats, the centrality of these scholars and, by implication, the centrality of the IFIs they serve, will decrease. Similarly, internalizing democratic norms may cause the Shariah religious elite to be more open and inclusive and extend membership to others, such as younger scholars or groups that are typically not part of the elite. For example, the only female scholar in our sample was from Malaysia, a relatively more democratic country in the sample. Overall, the following hypothesis is proposed:

H3a: The stronger the country-level democratic institutions are, the lower the IFI centrality.

Furthermore, conscientious Shariah scholars who balance democratic and purely religious elite logics should be expected to be more careful in their information sharing – using it more for the benefit of the firms they work for instead of as an artifact of their centrality-induced power for their own benefit or the satisfaction of religious needs. Thus, we propose the following hypothesis:

H3b: The relationship between IFI centrality and performance will become less negative with the increasing strength of country-level democratic institutions.

A second key effect of institutions on the behavior of the Shariah religious elite comes, we suggest, from government regulation. In the extreme case of (Islamic) regulation, Shariah boards are removed from the system and the government takes on

their duties, as is the case in Iran (Ünal, 2011). At the other extreme, there are no regulations, leaving firms and scholars to act in a free market environment. We argue that countries with strongly involved governments regulate industries by setting standards and rules that can affect industry dynamics and act as external governance mechanisms (Griffin et al., 2017; Walsh & Seward, 1990) that align the scholars' incentives with those of firms and/or provide for monitoring and enforcing by various external actors, such as auditors or regulators to limit the discretion of individual scholars. A clear example of this in the IF industry is the restriction on the number of board seats that the governments in Pakistan and Malaysia have created (Ünal, 2011).

In addition to mandating a lower number of board seats, these constraints are also likely to have an indirect effect. Specifically, in the absence of constraints, we would expect scholars to simply apply the institutional logic of the corporate religious elite. Yet, the existence of strong rules, permit processes, and so on, is likely to prevent an unfettered pursuit of this religious elite logic – not because of incorporating a more inclusionary (democratic) logic, but simply because of restrictions on free behavior. In turn, this should reduce the number of board seats that a scholar can and will acquire. Thus, we hypothesize the following:

H3c: The stricter the government regulatory institutions are, the lower the IFI centrality.

At the same time, while an absence of enforcement and restrictions may lead to a permissive attitude with regard to 'private' firm information, or even active information sharing by Shariah scholars across boards, stronger government interference, oversight and credible enforcement threats should also shift these scholars' logics to be more

heedful of the importance of protecting the firm's intellectual property. Therefore, we suggest the following hypothesis:

H3d: The relationship between IFI centrality and performance will become less negative with the increasing strictness of government regulatory institutions in a country.

Industry-specific Institutions. Prior work (e.g., Khanna & Palepu, 2004) shows that when institutions at the country level are not effective or are underdeveloped, certain industries might attempt to develop their own governance mechanisms. In the IF industry, we indeed observe such an attempt at industry self-regulation with the creation of the standard-setters AAOIFI in Bahrain and IFSB in Malaysia.

AAOIFI's stated objective is *"to enhance the industry's ... governance structures"* and *"provide markets with standards and guidelines"* (AAOIFI, 2016), while IFSB likewise aims to issue *"global prudential standards and guiding principles for the industry"* (IFSB, 2016). Whereas these statements suggest that the express aim of these associations is to further the quality of governance in the Islamic finance industry, the presence of two different agency issues in this industry raises the question of whether this 'quality' refers to business or religious imperatives. The concurrent discussions in the IF industry squarely suggest the latter – complaints by standard setters or scholars about conflicts of interest are not about problems related to profits, but about scholars not being religiously rigorous enough in their fatwas and perhaps heeding firm financial goals instead (e.g., Gulf Business, 2014; Gulf News, 2010; IFSB, 2009; Vizcaino, 2017).

In developed environments, such as the USA, networks often act as mechanisms of elite cohesion (Davis, 1991; Useem, 1984), and we argue that the same role of networks as strong tools of exercising and maintaining power for a specific elite applies to the IF

context. Thus, industry associations may not be inclusive and may instead favor already dominant players. In the context of Shariah scholars, this suggests that the same scholars that make up the current board network leverage their position of power to collectively create and control these industry-specific institutions to reinforce their corporate religious elite and its dominant logic. In fact, even as of 2016, eight of the nine members of the AAOIFI Shariah board were among the top 20 most connected Shariah scholars – a pattern that is suggestive of an alignment of incentives between the central network actors and the emerging industry-specific institutions. Accordingly, we expect the power in these industry institutions to be held by the Shariah scholars and the focus to be squarely on serving the 'religious principal.' In summary, we argue that industry-specific institutions that emerge in response to a regulatory void at the country level will essentially extend and reinforce the powerful corporate religious elite of Shariah scholars. In turn, this should exacerbate the busy scholar and information leakage problems. Thus, we hypothesize the following:

H4a: The presence of industry-specific institutions in a country will be associated with higher IFI centrality.

H4b: The relationship between an IFI's centrality in the Shariah board network and its performance will be more negative in the presence of industry-specific institutions.

METHODS

Data

The data for this study was gathered personally by one of the authors by screening over 2000 financial services organizations worldwide for their IFI-related activities. Data sources were triangulated using central bank registries, the websites and annual

reports of financial services companies, news streams, direct engagement with the organizations (by e-mail and phone) and the Zawya database (2010). We identified 367 Shariah scholars who – as of 2010 – occupied positions in 396 institutions (predominantly profit-oriented as well as non-profit entities) that are either fully Islamic or conventional financial services firms with IFI-related products (a so-called 'Islamic window') in 31 countries with 1392 Shariah board seats overall. The financial services firms include banks, insurance companies, asset management companies, real estate firms and others. Company-related performance data of fully Islamic banks were added using the Zawya database and publicly accessible company reports. Governance data at the country level was collected from the World Bank's "The Worldwide Governance Indicators" (WGI) survey (Kaufmann, Kraay, & Mastruzzi, 2010) and the Economic Intelligence Unit's "Democracy Index."

Network Creation

To create the Shariah board network data, we first formed a 2-mode network by linking each scholar with each institution where s/he (all Shariah scholars we identified outside Malaysia are male) is a member of the Shariah board. We manipulated this matrix using UCINET6 to form an organization-to-organization network (396-by-396), in which the nodes are organizations and a link is formed between two IFIs when the same Shariah scholar sits on both of their boards.

Sample

The 367 Shariah scholars represent the complete set of scholars that are active in the field, and the 396 IFIs represent the majority of the organizations in this area. We tried to be comprehensive and all-inclusive in our search for Shariah scholars and institutions and

we are confident that our *network* data include an almost exact representation of IFI Board membership in 2009 and 2010. However, our final sample is limited by the availability of *financial* data for three reasons. First, some major Western financial institutions are active IFIs, and they do have Shariah boards, but few of them publish separate financial statements for their IFI operations. Second, some of the IFIs were non-profits (e.g., the Development Banks). Third, some of these institutions are not required to report their financial statements in accordance with regulations in their home countries. In summary, even though we were able to calculate network variables from the larger sample that almost matches the whole population of IFIs, our sample for measuring financial performance was limited to 103 IFIs in 13 countries. Due to these restrictions, in the models that include two years of data, the total number of observations is limited to 155 firm-years.

Variables

Firm Performance. We used financial performance, measured by a firm's return-on-assets (ROA), calculated by dividing net income by total firm assets.

Centrality. We calculated the degree centrality by counting the number of other IFIs that the Shariah scholars of an organization are members of. We normalized this number by dividing it with the potential maximum number of connections that the firm can have (n-1) and multiplying by 100, which gave us the normalized degree centrality (Freeman, 1978). Consistent with our arguments in hypotheses 1 and 2, we calculated three different centrality measures. First, we calculated a total normalized degree centrality, as follows: the total number of all other IFIs that a focal IFI is connected to, divided by 395. Second, we calculated a domestic normalized degree centrality, as follows: the total number of

alters which are located in the same country as the ego, divided by the total potential alters for the ego in that country. Finally, we calculated an international normalized degree centrality: the total number of alters which are located outside the home country of the ego, divided by the total potential alters for ego outside its home country.

Democratic institutions. The Worldwide Governance Indicators (WGI) have been collected by the World Bank annually since 1996 across over 200 countries through a survey of a large number of data sources that capture the perceptions of survey respondents, experts in public and private sectors, and NGOs (Kaufmann et al., 2010). These data have previously been used to measure the institutional quality in international business studies (e.g., Cuervo-Cazurra & Genc, 2008). The WGI consists of 6 measures (voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption), each of which, in turn, is an aggregate of multiple items from various surveys performed all over the world. To proxy for democratic institutions, we use the measure of 'voice and accountability,' which is defined as *"capturing perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media"* (Kaufmann et al., 2010: 4). We also used a second measure, i.e., the score of a country in the Democracy Index of the Economist Intelligence Unit. This measure is already included in the Voice and Accountability index as one of the variables, but we use it also as a separate variable that more directly measures the concept of democracy.

Government regulation. To proxy for the regulatory institutional environment, we used the measure 'Regulatory Quality' (a.k.a. regulatory burden) from the WGI. Regulatory

quality is described as *"capturing perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development"* (Kaufmann et al., 2010: 4). Many of the components of this measure are, in fact, about the lack of government intervention in the market (e.g., lack of price controls, tariffs, excessive protections, regulation burden, investment freedom, financial freedom, etc.). Thus, higher scores in this measure are associated with a lack of regulation and the presence of freer markets. However, since we are interested in measuring the regulatory strength of the government as a measure of the institutional constraints faced by individual actors in a country, we have reversed this measure so that an increase in this variable denotes more regulation or less freedom to operate.

Industry-specific institutions. We identified countries in which non-governmental, industry-specific regulatory organizations for the IF industry have been formed and also conducted interviews to understand in which countries the industry is most active in creating such institutions. In addition to Bahrain (home of AAOIFI) and Malaysia (IFSB), experts pointed to Kuwait and Pakistan as countries in which the IF industry was most pro-active in defining rules and regulations. Hence, we coded the variable 'Industry Institutions' as '1' if an IFI resides in one of these four countries, and '0' otherwise.

Control variables. We controlled for the IFI's age, as younger firms can suffer a liability of newness, and their financial performance may suffer. We also controlled for the size of the company, measured as the log of annual revenues in dollar terms. We created dummy variables to capture the type of IFI as either a bank, insurance company, investment company, leasing company, or diversified. Further, we calculated the percentage growth in dollar revenues from the previous year, as periods of growth can be associated with

negative financial results due to the required investments. We also controlled for the observation year since our sample period (2009 and 2010) was close to the financial crisis of 2008, which might have an effect on the ROA. Finally, we controlled for leverage, which is calculated as liabilities divided by equity and then divided by ten to enhance reportability. At the country level, we controlled for the country wealth (GDP/capita) and potential market size (total number of Muslims living in the country and percentage of Muslims of the total population), both of which may affect IFI performance. Table 1 lists the descriptive statistics.

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Analysis

In our empirical analysis, we started by employing ordinary least squares (OLS) regression with ROA as the dependent variable. However, our research design suggests two methodological concerns with OLS. First, there is a concern for endogeneity due to reverse causality. As Shariah scholars are crucial actors in this industry, it is also possible that underperforming IFIs could see adding highly connected actors to their Shariah boards as a way to improve their performance. Second, our organizational level variables are nested within countries, resulting in a hierarchical (or multi-level) model. Thus, the standard errors of the regression coefficients can be underestimated, leading to false positives (Peterson, Arregle, & Martin, 2012). To deal with these two issues, we conducted additional analyses, as explained below.

Endogeneity. To deal with endogeneity, we ran a two-stage least squares (2SLS) analysis with instrumental variables. Since centrality is the endogenous variable in our model, we identified two instruments for centrality, as follows: population density

(population divided by the area of a country; Martin et al., 2015) and past centrality. Population density satisfies the necessary relevance and exogeneity conditions for an instrumental variable (Angrist & Pischke, 2009; Bascle, 2008), i.e., it is relevant because interpersonal relationships across organizations are spatial phenomena (Kono, Palmer, Friedland & Zafonte, 1998) and physical proximity increases the chance of forming connections (Allen, 1977). Furthermore, population density will be exogenous to the structural model as there is no reason to believe that IFIs in countries with high population density have characteristics other than increased level of connections and interactions that will have an effect on firm performance (Saxenian, 1994). Similarly, we expect past centrality to be relevant and to correlate strongly with current centrality, as there is a certain amount of stability within the networks (Palmer, Friedland, & Singh, 1986). We also expect it to be exogenous to the structural model, as the effects of centrality in the earlier years, such as information leakage, should not have an effect in the current year, as last year's information will not be very relevant for current business decisions and is not expected to affect performance (Martin et al., 2015; Soda, Usai & Zaheer, 2004). To instrument the squared term of centrality for H1b, we used the squared term of both population density and the lagged centrality measures (Wooldridge, 2002: 237). Since tests suggested the presence of heteroscedasticity in our data, we used heteroscedasticity robust standard errors. We also used cluster robust standard errors, as error terms can be interdependent within countries.

We furthermore ran tests for instrument exogeneity, under-identification of instruments, weak identification, and endogeneity. For testing instrument exogeneity, we used Hansen's J-statistic (Hansen, 1982), which, in both the model with total centrality (Table

3, Model 2: 4.64, p=0.10) and the model with domestic and international centralities (Table 3, Model 5: 2.63, p=0.10), failed to reject the null hypothesis, suggesting that the instruments can be considered exogenous. We tested for under-identification using the Kleiberger-Paap *rk-LM* (Kleiberger & Paap, 2006) statistic, and the results for both the model with total centrality (47.98) and the model with domestic and international centralities (31.66) were significant ($p < 0.001$), showing that the instruments are sufficiently correlated with the endogenous variable and can be considered relevant. For the weak identification test, we used the Cragg-Donald Wald F statistic. In both the model with total centrality (124.15) and the model with both centralities (196.26), this statistic exceeded the respective cutoff points (4.72 and 5.44) suggested by Stock & Yogo (2005), indicating that the instruments were not weak. Finally, the Durbin-Wu-Hausman statistic in both models was not significantly different from zero (1.94, p=0.38 and 2.21, p=0.33), suggesting that there is no evidence of endogeneity. All test values are reported at the bottom of Table 3.

We ran different types of model specifications, including 2-stage least square (2SLS), limited information maximum likelihood (LIML), Fuller's modified LIML (FULL) and, for models with a single endogenous variable, also Moreira's CLR. The results were fully consistent across the different methods, and we report the LIML results as they are less sensitive to a small sample size. The results for the other methods are available upon request.

As a robustness test, we also replicated the OLS analysis only for firms that are younger than five years to partially control for reverse causality, based on the assumption

that younger firms will be less affected by the performance considerations. The results, which are available upon request, were fully consistent with the full sample analysis.

Multi-level Models. To deal with the multi-level nature of our data, we employ two alternative strategies. First, for the OLS regressions, we used cluster robust standard errors as the error terms can be correlated within clusters (i.e., countries). Second, we also ran multi-level model analysis using the xtmixed command in Stata, where IFIs constitute the first level and countries the second level. We tested the difference between a single-level model and the multi-level model using a likelihood-ratio (LR) test. In our full models, the LR test statistic was 0 (p=1.00), suggesting that there is no evidence of a difference between the models. However, since there was evidence of difference in some of our models, we report multi-level models in Table 4 and Table 5. The OLS results were fully consistent with these models.

RESULTS

Table 2 presents the OLS and Table 3 the LIML estimations that allow us to address the first two sets of hypotheses. The results for both methods were consistent and the Durbin-Wu-Hausman tests of endogeneity for all models in Table 3 failed to reject the null hypothesis of the OLS estimator being a consistent estimator. Since OLS estimators are the more efficient estimators of the two, we base the following discussion on the OLS regressions in Table 2. These results indicate a robust, strong support for H1a, as Model 2 shows a significant negative coefficient for centrality on ROA of -2.00 (p<0.05), which means that for a one standard deviation increase in firm centrality (we standardized the centrality measure to avoid multicollinearity in interaction and squared terms), the ROA decreases by 2.0 percentage points. An increase from the minimum to the maximum

value of the centrality score within the sample would be associated with a decrease of 8.6 percentage points of ROA, illustrating the rather significant economic effect of this result.

----- INSERT TABLE 2 & 3 ABOUT HERE -----

H1b, which suggests a curvilinear effect of centrality on performance, however, fails to find support, as the coefficient of the squared term in Model 3 is insignificant (β=-0.79, p>0.1). Similarly, the coefficients for the squared term of domestic centrality (β=-1.40, p>0.1) and international centrality (β=-0.74, p>0.1) in Model 9 are not significantly different than zero. Thus, we find no empirical evidence that the centrality of scholars provides IFIs with advantages that balance the cost of having Shariah scholars that are 'too busy' or leak information.

Hypothesis 2 receives mixed support. In Models 8 and 9 of Table 2, the coefficients of both domestic centrality and international centrality are negative and significant (standardized coefficients are directly comparable). When we include both variables in Model 8, the negative coefficient for domestic centrality (β=-1.40, p<0.1) is larger than the coefficient for international centrality (β=-0.98, p<0.05). Furthermore, in Model 9, when the squared-terms are included, the coefficient for international centrality (β=-0.43, p>0.1) is not significant and is smaller than the coefficient for domestic centrality (β=-1.65), which is significant at the p<0.1 level. However, the difference between the coefficients is not significantly different from zero (p>0.1). We ran additional analyses (available on request) using multi-level models as well as OLS with country dummy variables and found that the difference between the coefficients was significantly different from zero in some of the equivalent models, but not all. Overall, while in all of our models the results are consistent with H2, which suggests that the negative

relationship between centrality and performance will be stronger for domestic than for international centrality, the lack of significance in difference in some of the models weakens the support for this hypothesis.

--- INSERT TABLE 4 & TABLE 5 ABOUT HERE ---

Tables 4 and 5 address the third and fourth sets of hypotheses. In Table 4, the dependent variable is IFI centrality, and the results show whether institutions affect this centrality directly, providing a test of the first part of a possible mediation effect between institutions, centrality, and performance. Table 5, with ROA as the dependent variable, investigates whether the centrality-performance relationship is moderated by institutions.

We find strong support for H3a and H3c. Model 7 in Table 4 shows that the coefficients for both democracy index (β=-5.24, p<0.001) and government regulation (β=-16.92, p<0.001) are negative and significant. Similarly, Model 6 shows that the coefficient for voice and accountability (β=-7.55, p<0.01) is negative and significant, which suggests that as the level of democratic and regulatory institutions increases, the average centrality of an IFI decreases – in other words, scholars subjected to the specific institutional environment in a certain country have fewer board seats, leading to a decrease in the centrality score of the firms. One unit of increase in the level of democratic institutions is associated with an approximately 0.05 units decrease in normalized centrality, while a one unit increase in government regulation is associated with a decrease of 0.17 units and a one unit increase in voice and accountability is associated with a decrease of 0.08 units in normalized centrality. The row starting with Var(constant) specifies the across-country level variance unexplained by the variables in the model. Once we specify the full models (6 and 7), the country level variance drops

down to arbitrarily small numbers , suggesting that almost all of the country level variance in ROA can be explained by the three institutional factors and country level control variables. To formally test for mediation, we conducted a Sobel test (Sobel, 1982). The results show that there is a significant mediation effect of government regulation on firm performance through centrality (p<0.01) with approximately 64 percent of the total effect of government regulation on firm performance being mediated through centrality. Similarly, we find a mediation effect of the voice and accountability measure (p<0.1), which implies that approximately 72 percent of the total effect was mediated, whereas the mediation effect for the democracy index measure was 42 percent (p<0.05).

H4a is not supported, as the coefficient for 'governance specific to IF' is not significant in any of the models and adding this variable does not change the unexplained across-country variance. Likewise, the Sobel test shows no mediation effect.

--- INSERT FIGURE 1 & FIGURE 2 ABOUT HERE ---

For our hypotheses concerning a moderating effect of institutions on the relationship between centrality and ROA, we find mixed support (Table 5). First, H3b is not supported, as both measures of democratic institutions (voice and accountability and democracy index) are not significantly different from zero when they are the only interactions in a model (Models 2 and 3) or when they are included with other interactions in Models 6 and 7. Conversely, H3d is supported, as the coefficient of the interaction term of centrality and government regulation is significant and positive in Model 6 of Table 5 (β=2.07, p<0.05), suggesting that stronger government regulation – and less free markets – makes the relationship between centrality and performance less

negative. Figure 1, in fact, shows that the benefits from hiring central Shariah scholars can only be recognized in high-regulation environments. As before, we find that including government regulation intensity significantly reduces the unexplained across-country variance Var(constant) in the sample. Finally, H4b is supported, as the coefficient for the interaction term of centrality with governance specific to IF is negative and significant (β=-1.16, p<0.05) in Model 6 of Table 5, suggesting that the relationship between centrality and performance becomes even more negative (as illustrated in Figure 2) when there is strong self-regulation in this industry.

DISCUSSION

Our consistent and strong findings that show a negative relationship between the centrality of firms in the network spanned by Shariah scholars and firm performance suggest that the costs of centrality in this network consistently outweigh its benefits for the firms. In other words, firms hiring central actors to benefit from the prestige or other factors associated with that centrality may not be able to appropriate financial rents from these beneficial effects as the central actors (scholars) take steps either to benefit privately from their position (through multiple salaries) or to pursue other goals dictated by their (religious) elite logic, which induces costs on the focal firms.

For our second hypothesis, which suggests that the negative effects on performance are stronger for domestic centrality compared to international centrality, we find mixed support. Our findings are broadly consistent with the argument that information leakage by Shariah scholars with potential competitors in the home market would be more harmful compared to such sharing with foreign companies.

More importantly, our theory proposes, and our results show, that external institutions

can attenuate the potent negative consequences of power differences between a strong social elite group and firms that are interlocked by members of that elite group. The internalization of democratic norms or direct government intervention can alter the rules of the game and reduce the power differentials between actors, protecting firms or shareholders against, in this case, the religious elite of Shariah scholars. It is interesting to note that while democracy and government regulation seem to reduce the level of centrality in a country, only strong regulation was effective in attenuating the negative effects of centrality on performance. In fact, at the strongest levels of regulation, the relationship between centrality and performance becomes positive, which we interpret to suggest that when information leakage and 'busyness' can be limited, companies can indeed enjoy the economic benefits from employing highly central Shariah scholars. Furthermore, in contrast to the country level institutional effects, self-regulation by the IF industry exacerbates the negative relationship between centrality and performance, suggesting that Shariah scholars, as a religious corporate elite, play a dominant role in these self-regulatory organizations and thus reduce the rents that the shareholders of IFIs can appropriate from centrality.

Our study makes several contributions to the literature. First, we add to the emerging literature on the effects of country-level institutions on social networks by showing that institutions have an effect on the social network structure beyond structural holes or ego density, specifically on centrality. We establish that institutions not only moderate the relationship between social networks and performance, as some earlier studies have shown (Vasudeva et al., 2013), but can also directly affect the structure of the networks as democratic institutions and government regulation demonstrably have a direct effect

on firm centrality in our setting. Our overall findings show that as the level of democracy and government regulation increase, the number of board seats and, thus, the centrality rents obtained by a corporate social elite, as well as the costs of centrality borne by shareholders, decrease. These findings also help to disentangle recent contradictory results in the interlocking directorates literature, where some studies have demonstrated a positive performance effect of firm centrality in US (Martin et al., 2015) or Hong Kong interlocks (Peng, Mutlu, Sauerwald, Au, & Wang, 2015), while Non and Franses (2007) have reported negative effects for a Dutch sample. To our knowledge, there has been no attempt to systematically analyze how variations in the institutional context across countries affect these relationships, and our study is a step-forward in this direction. By showing that country level differences in the centrality-performance relationship in elite networks can be explained by the institutional context, we thus provide support for the view that institutions are more than background conditions and are fundamental in determining the behavior, strategy, and performance of actors (Peng, 2002).

Second, we extend the research stream on the 'networks as a tool for social cohesion' idea developed by Useem (1984) and Davis (1991). Their work focused on the conflict between shareholders and top-managers; however, our findings suggest that these conflicts are more general in nature and can equally be applied to out-of-hierarchy settings in which two separate social actor networks with different incentives and ideologies come together. In Islamic finance, the worlds of Shariah scholars and bankers collide. The network becomes a tool for social cohesion, and the non-financial objectives of one group dominate the financial objectives of another. While the issue of centrality has often been studied in the context of corporate director interlocks, we thus provide a

fresh perspective by expanding the inquiry into a similar network. In fact, there are several other types of elites that are outside of firm hierarchies, including auditors, consultants and lawyers that, just like Shariah scholars but unlike corporate directors, often specialize in certain industries (e.g., Zerni, 2012) and, thus, likely work for competing firms. Most of these elites are also more similar to Shariah scholars than to corporate directors in the sense that the knowledge they carry is more at the operational level. Accordingly, our extensions to the theory of corporate elites and institutional effects might be generalizable to these other elite groups, suggesting a fertile area for further research.

Another observation pertains to Khanna and Palepu's (2004) argument that product and labor market globalization causes convergence in corporate governance. Their starting point was the observation that the Indian software industry has better corporate governance practices than other industries in India. Their explanation was that Indian software firms, by virtue of acting more globally than other Indian industries, had to adapt to international standards to attract global customers and highly skilled labor while more local industries did not. This reasoning suggests that it is possible for industries to develop standards that can help them achieve higher levels of governance than the rest of the country (Shleifer & Vishny, 1997). However, our findings somewhat contradict this argument. We found that industry-specific institutions may not represent the *economic principal* but may fall into the hands of the *agent* (who may follow another principal altogether), particularly when the *agent* constitutes a strong social elite and controls the network. This contradiction invites further study.

Moreover, while proponents of Islamic finance are counting on increased levels of

industry-specific institutions as a way forward for the industry (e.g., McBain, 2012; Y-Sing, 2014), our findings suggest that this hope may be misplaced. In fact, the industry-specific institutions that appear in this arena seem to be simply extensions of the existing network of Shariah scholars, exacerbating (rather than solving) the problems of centrality for IFIs due to the conflict of interest between the scholars and shareholders. Thus, we provide empirical support for prior calls (e.g., Hayat et al., 2013: 610) to *"certify the certifiers"* and to ensure that industry institutions, such as AAOIFI and IFSB, indeed reach the quality they aspire to and are inclusive of the interests of both religious and economic principals and a novel lens to the analysis of governance in the Islamic finance industry (e.g., Hayat et al, 2013; Li et al., 2014; Mollah & Zaman, 2015).

Our troubling finding that the negative effects of centrality for firms are made even worse under industry self-regulation also has some immediate managerial implications. Firms interested in Islamic finance should be mindful of the role played by industry regulators and central Shariah actors and should perhaps even shy away from existing self-regulation bodies and instead appeal to regulation from more impartial country level institutions. Similarly, firms need to take the strong impact of country-level institutions into account in their location choice. Specifically, our results suggest that seeking out more democratic countries and/or countries with more (rather than less) government regulation and intervention could help to soften even the entrenched Shariah network so that firms can perform better. Our results also suggests that individual Shariah scholars – despite their international network of board seats – do adapt to local institutional logics.

While our analysis involving financial and centrality measures has yielded results that support our hypotheses, we do acknowledge that a limitation of our study is that we did

not have any direct measures of the underlying causal mechanisms. Thus, future research should attempt to derive direct measures of social elites becoming too busy or leaking information when engaged in interlocks of essentially competing organizations.

CONCLUSION

Our study revolved around the question of who receives the rents from centrality and who pays for the collateral damage of not acting in the best economic interest of a focal principal, as well as the governance effects of institutions in balancing the relationship between firms and those actors that create the centrality in the first place. Delving deeper into this logic, we proposed that direct rents (for scholars) may be appropriated less inside the dyadic firm-scholar relationship and more across the whole network, as members of the corporate religious elite of Shariah scholars exploit their position to take on many board seats. In turn, firms suffer less from giving money directly to scholars and more from a shirking effect, i.e., not only do they receive less work than is 'paid for' from the 'busy scholar' but since the scholars form a bottleneck in new product development and approval, profits are lost due to delays in the whole production process. Additionally, leakage of information about product development due to the scholars' interactions across competing firms' boards forms a type of moral hazard that further negatively impacts a focal firm due to a commoditization of its offerings. Governance mechanisms, such as democratic institutions or regulation, may help to prevent or reduce these problems by either preventing 'busy scholar' behavior or by reducing information leakage and thus allowing the firm to earn higher rents from employing central actors without suffering these drawbacks.

REFERENCES

AAOIFI website. 2016. aaoifi.com. Accessed 7 October 2016.

Acemoglu, D., & Robinson, J. 2012. *Why nations fail: The origins of power, prosperity, and poverty*. New York: Random House Inc.

Aguilera, R. V., & Jackson, G. 2010. Comparative and international corporate governance. *The Academy of Management Annals,* 4(1): 485–556

Ahuja, G. 2000. Collaboration networks, structural holes, and innovation: A longitudinal study. *Administrative Science Quarterly,* 45(3): 425-455.

Allen, T. J. 1977. *Managing the flow of technology*. Massachusetts: MIT Press.

Al-Salem, F. H. 2009. Islamic financial product innovation. *International Journal of Islamic and Middle Eastern Finance and Management,* Vol. 2(3): 187-200.

Angrist, J. D., & Pischke J., 2009. *Mostly harmless econometrics: An empiricist's companion.* New Jersey: Princeton University Press.

Arregle, J., Miller T. L., Hitt, M. A., & Beamish, P. W. 2016. How does regional institutional complexity affect MNE internalization? *Journal of International Business Studies*, 47(6): 697-722.

Awais, S., & Tipu, A. 2014. Employees' involvement in developing service product innovations in Islamic banks. *International Journal of Commerce and Management,* Vol. 24(1): 85-108.

Banalieva, E. R., Cuervo-Cazurra, A., & Sarathy, R. 2018. Dynamics of pro-market institutions and firm performance. *Journal of International Business Studies*, 49(7): 858-880.

Bascle, G. 2008. Controlling for endogeneity with instrumental variables in strategic management research. *Strategic Organization*. 6(3): 285-327.

Core, J., Holthausen, R., & Larcker, D. 1999. Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics,* 51(3): 371–406.

Cotter, J., Shivdasani, A., & Zenner, M. 1997. Do independent directors enhance target shareholder wealth during tender offers? *Journal of Financial Economics,* 43(2): 95– 218.

Cuervo-Cazurra, A., & Genc, M. 2008. Transforming disadvantages into advantages: Developing country MNEs in the least developed countries. *Journal of International*

Business Studies, 29(6): 957-979.

Davis, G. F. 1991. Agents without principles? The spread of the poison pill through the intercorporate network." *Administrative Science Quarterly,* 36(4)**:** 583-613.

Davis, G. F., & Greve, H. R. 1997. Corporate Elite Networks and Governance Changes in the 1980s. *American Journal of Sociology,* 103(1): 1-37.

DiMaggio, P. J., & Powell, W. W. 1983. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review,* 48(2): 147-160.

Doh, J., Rodrigues, S., Saka-Helmhout, A., & Makhija, M. 2017. International business responses to institutional voids. *Journal of International Business Studies*, 48(3): 293-307.

El-Gamal, M. A. 2006. *Islamic finance: Law, economics and practice.* Cambridge, UK: Cambridge University Press.

Euromoney. 2006. Local markets make it to the mainstream. January 37(441): 176-185.

Fama, E. F., & Jensen, M. C. 1983. Separation of ownership and control. *Journal of Law and Economics,* 26(2)**:** 301-325.

Fich, E., & Shivdasani, A. 2006. Are busy boards effective monitors? *Journal of Finance*, 61(2): 689–724.

Freeman, L. C. 1978. Centrality in social networks: Conceptual clarification. *Social Networks*, 1(3): 215-239.

Grais, W., & Pellegrini, M. 2006. Corporate Governance and *Shariah* Compliance in Institutions Offering Islamic Financial Services. World Bank Policy Research Working Paper 4054, November 2006.

Griffin, D., Guedhami, O., Kwok, C., Li, K., & Shao, L. 2017. National culture: The missing country-level determinant of corporate governance. *Journal of International Business Studies*, 48(6): 740-762.

Gulf Business. 2014. Independent Entity Needed For Shariah Supervision - Kuwait Central Bank. http://gulfbusiness.com. Tuesday 11 February 2014. Accessed 10 December 2017.

Gulf News. 2010. A Shariah scholar's place on the board. http:// gulfnews.com. 12

May 2010. Accessed 12 November 2017.

Hansen, L. P. 1982. Large sample properties of generalized methods of moments estimators. *Econometrica,* 50(4): 1029-1054.

Harrison, J. S., Hitt, M. A., Hoskisson, R. E., & Ireland, R. D. 2001. Resource complementarity in business combinations: Extending the logic to organizational alliances. *Journal of Management,* 27(6): 679-691.

Hassan, R., Ibrahim, U., Abdullah, N. I., Aziz, A. A., & Sawari, M. F. 2010, An Analysis of the Role and Competency of the Shari'ah Committees (SCs) of Islamic Banks and Financial Service Providers**,** *Research Paper,* 18/2010, Malaysia: ISRA**.**

Haunschild, P. R., & Beckman, C. M. 1998. When do interlocks matter? Alternate sources of information and interlock influence. *Administrative Science Quarterly***,** 43(4): 815-844.

Hayat, R., Butter, F. D. & Kock, U. 2013. Halal certification for financial products: A transaction cost perspective. *Journal of Business Ethics,* 117(3): 601–613.

IFSB website. www.ifsb.org, accessed on 7 October 2016.

IFSB. 2009. Islamic Financial Services Board – Guiding principles on Shariah governance systems for institutions offering Islamic financial services.

IFSB. 2017. Islamic Financial Services Board – Islamic Financial Services Industry Stability Report.

Imam, P., & Kpodar, K. 2010. Islamic Banking: How has it diffused? *IMF Working Paper*, WP/10/195, August 2010.

Ingram, P., & Silverman, B. 2002. *The new institutionalism in strategic management.* Amsterdam: Elsevier.

Institute of Islamic Banking and Finance, 2017. http://www.islamic-banking.com/Shariah_supervisory_board.aspx. Accessed 5 June 2017.

Jensen, M. C., & Meckling, W. H. 1976. Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, 3(4): 305-360.

Kaufmann, D., Kraay, A., & Mastruzzi, M. 2010. The Worldwide Governance Indicators: Methodology and analytical issues. *World Bank Policy Research Working Paper* No. 5430.

Khanna, T., & Palepu, K. G. 2004. Globalization and convergence in corporate

governance: Evidence from Infosys and the Indian software industry" *Journal of International Business Studies,* 35(6)**:** 484-507.

Khanna, T., & Palepu, K. G. 2010. *Winning in emerging markets: A road map for strategy and execution.* Boston: Harvard University Press.

Kim, H., & Song, J. 2017. Filling institutional voids in emerging market economies: The impact of capital market development and business groups on M&A deal abandonment. *Journal of International Business Studies*, 48(3): 308-323.

Kim, Y. U., & Ozdemir, S. Z. 2014. Structuring corporate boards for wealth protection and/or wealth creation: The effects of national institutional characteristics. *Corporate Governance: An International Review*, 22(3): 266–289.

Kleiberger, F., & Paap, R. 2006. Generalized reduced rank tests using the singular value decomposition. *Journal of Econometrics,* 133(1): 97-126.

Kono, C., Palmer, D., Friedland, R., & Zafonte, M., 1998. Lost in space: The geography of corporate interlocking directorates. *American Journal of Sociology,* 103(4): 863-911.

Laldin, M. A. 2017. Duties and Responsibilities of Shari'ah Boards from a Legal and Regulatory Perspective. http://www.amanieacademy.com. Accessed 10 June 2017.

Levitt, B., & March, J. 1988. Organizational learning. *Annual Review of Sociology,* 14:119-140.

Li, Y., Armstrong, A., & Clarke, A. 2014. Relationships of corporate governance mechanisms and financial performance in Islamic banks: A meta-analysis. *Journal of Business Systems, Governance and Ethics*, 9(1): 50-63.

Loderer, C., & Peyer, U. 2002. Board overlap, seat accumulation and share prices. *European Financial Management*, 8(2): 165–192.

Martin, G., Gözübüyük, R. & Becerra, M., 2015. Interlocks and firm performance: The role of uncertainty in the directorate interlock-performance relationship. *Strategic Management Journal*, 36(2): 235-253.

McBain, S. 2012. Islamic finance's 'scholar problem': Why are Shariah scholars paid so much? *Spears*, http://Spearswms.com. Accessed 7 October 2016.

McDonald, M. L., & Westphal, J. D. 2010. A little help here? Board control, CEO identification with the corporate elite, and strategic help provided to CEOs at other firms.

Academy of Management Journal, 53(2): 343–370.

Merriam Webster Dictionary. http://www.merriam-webster.com. Accessed 10 June 2017.

Middle East Insurance Review. 2014. Global: Lack of integration keeps sukuk a local affair. June: 22-22.

Miletkov, M., Poulsen, A., & Wintoki M. 2017. Foreing independent directors and the quality of legal institutions. *Journal of International Business Studies*, 48(2): 267-292.

Mizruchi, M. 1996. What do interlocks do? An analysis, critique, and assessment of research on interlocking directorates. *Annual Review of Sociology*, 22: 271-98.

Mollah, S., & Zaman, M. 2015. Shari'ah supervision, corporate governance and performance: Conventional vs. Islamic banks. *Journal of Banking & Finance*, 58: 418–435.

Non, M. & Franses, P. H. 2007. Interlocking boards and firm performance: Evidence from a new panel database. *Tinbergen Institute Discussion Paper.*

North, D. C. 1990. *Institutions, institutional change and economic performance.* Cambridge, UK: Cambridge University Press.

Oliver, C. 1997. Sustainable competitive advantage: Combining institutional and resource-based views. *Strategic Management Journal,* 18(9): 697-713.

Palmer, D., & Barber, B. M. 2001. Challengers, elites, and owning families: A social class theory of corporate acquisitions in the 1960s. *Administrative Science Quarterly,* 46(1): 87-120.

Palmer, D., Friedland, R., & Singh J.V., 1986. The ties that bind: Organizational and class bases of stability in a corporate interlock network. *American Sociological Review,* 51(6): 781-796.

Peng, M. W. 2002 Towards an institution-based view of business strategy. *Asia Pacific Journal of Management,* 19(2/3): 251-267.

Peng, M. W. 2004. Outside directors and firm performance during institutional transitions. *Strategic Management Journal,* 25(5): 453-471.

Peng, M. W., & Heath, P. S. 1996. The growth of the firm in planned economies in transition: Institutions, organizations, and strategic choice. *Academy of Management*

Review, 21(2): 492-528.

Peng, M. W., Wang, D. Y. L., & Jiang, Y. 2008. An institution-based view of international business strategy: A focus on emerging economies. *Journal of International Business Studies*, 39(5): 920-936.

Peng, M. W., Mutlu, C. C., Sauerwald, S., Au, K. Y., & Wang, D. Y. L. 2015. Board interlocks and corporate performance among firms listed abroad. *Journal of Management History,* 21(2): 257-282.

Peterson, M. F., Arregle J., Martin, X. 2012. Multilevel models in international business research. *Journal of International Business Studies*, 43(5):451-457.

Podolny, J. M. 2001. Networks as the pipes and prisms of the market." *American Journal of Sociology***,** 107(1): 33-60.

Porter, M. E. 1991. Towards a dynamic theory of strategy. *Strategic Management Journal,* 12(S2): 95-117.

Rao, H. 1994. The social construction of reputation: Certification, contests, legitimation, and the survival of organizations in the American automobile industry: 1895-1912. *Strategic Management Journal*, 15(S1): 29-44.

Safieddine, A. 2009. Islamic Financial Institutions and Corporate Governance: New Insights for Agency Theory. *Corporate Governance: An International Review*, 17(2): 142–158

Santos, R. L., da Silveira, A. D. M., & Barros, L. A. 2012. Board interlocking in Brazil: Directors' participation in multiple Companies and its effect on firm value and profitability. *Latin American Business Review,* 13(1): 1–28.

Saxenian, A. 1994. *Regional advantage: Culture and competition in Silicon Valley and Route 128.* Massachusetts: Harvard University Press.

Scalera, V. G., Perri, A., & Hannigan, T. J. 2017. Knowledge connectedness within and across home country borders: Spatial heterogeneity and the technological scope of firm innovations. *Journal of International Business Studies*, advance online publication October 12, 2017. doi: 10.1057/s41267-017-0109-5.

Scott, R. W. 1995. *Institutions and organizations*. Thousand Oaks, California: Sage Publications Inc.

Shaner, J., & Maznevski, M. 2011. The relationship between networks, institutional

development, and performance in foreign investments. *Strategic Management Journal*, 32(5)**:** 556-568.

Shleifer, A., & Vishny, R. W. 1997. A survey of corporate governance. *The Journal of Finance*, 52(2)**:** 737-783.

Sobel, M. E. 1982. Asymptotic confidence intervals for indirect effects in structural equation models. In *Sociological Methodology*, Leinhart, S. (ed). San Francisco, CA: Jossey-Bass: 290-312.

Soda, G., Usai, A, & Zaheer, A., 2004.Network memory: The influence of past and current networks on performance. *The Academy of Management Journal,* 47(6): 893-906.

Stock, J. H., & Yogo, M. 2005. Linear IV regressions. In D.W. K. Andrews & J.H. Stock (Eds), *Identification and Inference for Econometric Models: Essays in honor of Thomas Rothenberg:* 80-108. Cambridge, UK: Cambridge University Press.

Stubing, D. 2016. Rivals Add To Pressure For Islamic Innovations. *Global Finance, 30(6)*: 40-43.

Suchman, M. C. 1995. Managing legitimacy: Strategic and institutional approaches. *The Academy of Management Review,* 20(3):571-610.

Thornton, P. H. 2004. *Markets from culture: Institutional logics and organizational decisions in higher education publishing*. Stanford, CA: Stanford University Press.

Thornton, P. H., & Ocasio, W. 1999. Institutional logics and the historical contingency of power in organizations: Executive succession in the higher education publishing industry, 1958-1990. *American Journal of Sociology*, 105(3): 801-843.

Turkina, E., & Van Assche, A. 2018. Global connectedness and local innovation in industrial clusters. *Journal of International Business Studies*, 49(6): 706-728.

Useem, M. 1984. Classwide rationality in the politics of managers and directors of large corporations in the United States and Great Britain. *Administrative Science Quarterly,* 27(2): 199-226.

Uzzi, B. 1996. The sources and consequences of embeddedness for the economic performance of organizations: The network effect." *American Sociological Review*, 61(4): 674-698.

Ünal, M. 2011. The Small World of Islamic Finance – Shariah scholars and Governance – A Network Analytic Perspective, available as a report on the Funds@Work

website, www.funds-atwork. com/uploads/media/Shariah-Network_by_Funds_at_Work_AG.pdf.

Van Hoorn, A., & Maseland, R. 2016. How institutions matter for international business: Institutional distance effects vs. institutional profile effects. *Journal of International Business Studies*, 47(3): 374-381.

Vasudeva, G., Zaheer, A., & Hernandez, E. 2013. The embeddedness of networks: Institutions, structural holes, and innovativeness in the fuel cell industry" *Organization Science*, 24(3): 645–663.

Vizcaino, B. 2017. Islamic finance body drafts new standard for centralised Shariah boards. reuters.com, February 9, 2017; http://reuters.com. Accessed 10 December 2017.

Walsh, J. P., & Seward, J. K. 1990. On the efficiency of internal and external corporate control mechanisms. *Academy of Management Review*, 15(3): 421-458.

Westphal, J. D., & Shani, G. 2016. Psyched-up to suck-up: Self-regulated cognition, interpersonal influence, and recommendations for board appointments in the corporate elite. *Academy of Management Journal, 59(2):* 479-509.

Wooldridge, J. M. 2002. *Economic Analysis of Cross Section and Panel Data.* Cambridge, Massachusetts: MIT Press.

Y-Sing, L. 2014. Scholar fees targeted by regulators: Islamic finance. *bloomberg.com*, accessed 7 October 2016.

Zajac, E. J. 1988. Interlocking directorates as an interorganizational strategy: A test of critical assumptions. *Academy of Management Journal*, 32(2): 428-438.

Zawya. 2010. https://www.zawya.com/mena/en/. Accessed 1 December 2010.

Zerni, M. 2012. Audit Partner Specialization and Audit Fees: Some Evidence from Sweden. *Contemporary Accounting Research,* 29(1): 312-340.

15 U.S. Code § 19. http://www.law.cornell.edu. Accessed 17 December 2017.

Table 1 – Descriptive Statistics

	N	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) ROA	155	-0.84	6.70													
(2) Total Centrality	155	0.18	0.14	-0.29												
(3) Domestic Centrality	155	0.44	0.26	-0.26	0.67											
(4) International Centrality	155	0.16	0.14	-0.26	0.98	0.53										
(5) Age	155	17.37	18.24	0.14	0.01	0.09	-0.01									
(6) Size	155	18.09	2.35	0.29	0.08	0.02	0.08	0.41								
(7) Growth	155	14.32	168.73	-0.14	-0.11	-0.13	-0.09	-0.07	-0.03							
(8) Leverage	155	25.95	261.54	-0.18	0.09	0.01	0.10	-0.01	0.01	-0.01						
(9) GDP per capita	155	9.67	1.13	-0.02	0.20	0.22	0.11	-0.17	0.07	0.003	0.01					
(10) Muslim Population	155	15.29	1.63	0.23	-0.26	-0.16	-0.22	0.28	0.17	0.09	-0.08	-0.67				
(11) Muslim Percentage	155	83.17	11.92	-0.01	0.10	0.08	0.06	0.21	0.13	0.09	-0.01	-0.19	0.34			
(12) Voice and Accountability	155	-0.96	0.46	-0.11	-0.08	-0.07	-0.09	-0.31	-0.28	-0.14	-0.01	0.32	-0.48	-0.53		
(13) Government Regulation	155	0.28	0.50	-0.22	0.38	0.20	0.35	-0.31	-0.13	-0.03	0.06	0.72	-0.73	-0.24	0.45	
(14) Democracy Index	155	3.35	1.12	-0.09	-0.18	-0.21	-0.13	-0.28	-0.34	-0.11	0.01	-0.09	-0.13	-0.57	0.80	0.22

Table 2 – Centrality and performance with OLS regression (H1a, H1b & H2)

Dependent Variable: ROA	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
Size	0.92**	0.98***	0.99***	0.86***	0.67***	1.00**	1.01**	0.92***	0.74***
	(0.25)	(0.22)	(0.23)	(0.19)	(0.15)	(0.25)	(0.26)	(0.20)	(0.15)
Growth Rate	-0.01***	-0.01***	-0.01***	-0.01***	-0.01**	-0.01**	-0.01**	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leverage	-0.04***	-0.03***	-0.03***	-0.04***	-0.04*	-0.03***	-0.03***	-0.04***	-0.04***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age	-0.01	-0.01	-0.01	0.004	0.01	-0.01	-0.01	-0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)
Bank	2.25+	2.57+	2.44+	2.45+	2.96+	2.51+	2.40+	2.54+	2.88*
	(1.16)	(1.34)	(1.30)	(1.17)	(1.40)	(1.36)	(1.26)	(1.20)	(1.30)
Leasing Company	5.24*	3.79*	4.04*	4.23**	3.23**	3.94*	4.26+	3.77**	3.28*
	(1.98)	(1.28)	(1.76)	(1.21)	(0.94)	(1.38)	(2.04)	(1.10)	(1.43)
Investment Company	0.40	0.37	0.53	0.69	0.95	0.29	0.43	0.55	1.01
	(1.86)	(2.19)	(2.62)	(1.54)	(1.94)	(2.26)	(2.61)	(1.84)	(2.54)
Insurance Company	5.71*	6.55*	6.32**	6.01**	5.89**	6.62*	6.34**	6.44**	5.89**
	(1.85)	(2.22)	(2.07)	(1.70)	(1.82)	(2.32)	(1.97)	(1.98)	(1.71)
GDP per Capita	0.63	0.79+	0.62	1.07+	1.18*	0.60	0.57	0.94+	1.04*
	(0.64)	(0.36)	(0.41)	(0.59)	(0.42)	(0.41)	(0.44)	(0.49)	(0.42)
Muslim Population	1.00+	0.62*	0.66*	0.95*	1.10**	0.66*	0.72+	0.77*	1.03*
	(0.52)	(0.22)	(0.27)	(0.35)	(0.36)	(0.26)	(0.36)	(0.30)	(0.42)
Muslim Percentage	-0.08+	-0.04	-0.06+	-0.06	-0.07	-0.06+	-0.06+	-0.05	-0.07
	(0.04)	(0.03)	(0.03)	(0.04)	(0.05)	(0.03)	(0.03)	(0.04)	(0.05)
Year 2009	-1.79*	-0.95+	-0.93+	-1.44*	-1.02	-1.04*	-1.08+	-1.11*	-0.80*
	(0.81)	(0.46)	(0.45)	(0.64)	(0.59)	(0.47)	(0.51)	(0.49)	(0.52)
Total Centrality		-2.00*	-1.60**						
		(0.81)	(0.39)						
(Total Centrality)^2			-0.79						
			(0.87)						
Domestic Centrality				-1.90*	-2.02*			-1.40+	-1.65+
				(0.83)	(0.84)			(0.69)	(0.79)
(Domestic Centrality)^2					-1.48				-1.40
					(0.94)				(0.88)
International Centrality						-1.75**	-1.45***	-0.98*	-0.43
						(0.77)	(0.34)	(0.45)	(0.52)
(International Centrality)^2							-0.54		-0.74
							(0.92)		(0.84)
Intercept	-33.48*	-33.62**	-30.88**	-38.10**	-36.30**	-31.32**	-31.04**	-35.68**	-34.11**
	(14.71)	(9.08)	(7.70)	(10.48)	(9.03)	(9.77)	(10.24)	(9.21)	(9.46)
R^2	0.25	0.32	0.33	0.32	0.34	0.30	0.31	0.33	0.36

***: $p < 0.001$; **: $p < 0.01$; *: $p < 0.05$; +: $p < 0.1$. N=155 firm-years. All tests are two-tailed. Standard errors are in parentheses.

Table 3 – Centrality and performance with LIML regression (H1a, H1b, & H2)

Dependent Variable: ROA	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Size	0.79**	0.82**	0.63*	0.82***	0.75**
	(0.26)	(0.26)	(0.30)	(0.26)	(0.26)
Growth Rate	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leverage	-0.03**	-0.03***	-0.04***	-0.03**	-0.03**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Age	-0.00	-0.01	0.00	-0.01	-0.00
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Bank	2.02	1.24	2.06	1.86	2.07
	(1.44)	(1.83)	(1.33)	(1.50)	(1.40)
Investment Company	-0.46	-0.69	0.18	-0.56	-0.35
	(2.43)	(2.52)	(2.30)	(2.55)	(2.47)
Insurance Company	5.57**	4.62+	5.04**	5.68**	5.63**
	(1.92)	(2.39)	(1.83)	(1.96)	(1.87)
GDP per capita	0.85	0.51	1.31	0.60	0.91
	(0.73)	(0.64)	(0.91)	(0.66)	(0.68)
Muslim Population	0.26	0.40	0.78	0.27	0.42
	(0.44)	(0.46)	(0.60)	(0.44)	(0.44)
Muslim Percentage	-0.01	-0.05+	-0.04	-0.03	-0.03
	(0.02)	(0.03)	(0.03)	(0.02)	(0.03)
Total Centrality	-2.42*	-1.45*			
	(0.98)	(0.67)			
(Total Centrality)^2		-2.05			
		(1.42)			
Domestic Centrality			-1.81*		-1.04*
			(0.68)		(0.49)
International Centrality				-2.20*	-1.67+
				(0.99)	(0.97)
Intercept	-27.32*	-20.58	-34.03*	-23.93+	-28.01*
	(13.40)	(13.59)	(15.26)	(12.71)	(12.77)
Uncentered R^2	0.39	0.42	0.36	0.36	0.39
Kleibergen-Paap rk LM statistic	34.54	47.98	40.31	33.31	31.66
	(p=0.00)	(p=0.00)	(p=0.00)	(p=0.00)	(p=0.00)
F-statistic or Cragg-Donald Wald F-statistic /	168.05 /	124.15 /	515.56	222.35	196.26 /
10% maximal value of Stock-Yogo	8.68	4.72	/8.68	/8.68	5.44
Hansen J Statistic	2.80+	4.64	3.57	3.75	2.63
	(p=0.09)	(p=0.10)	(p=0.06)	(p=0.05)	(p=0.10)
Durbin-Wu-Hausman Statistic	0.14	1.94	0.62	0.14	2.21
	(p=0.71)	(p=0.38)	(p=0.43)	(p=0.70)	(p= 0.33)

***: $p < 0.001$; **: $p < 0.01$; *: $p < 0.05$; +: $p < 0.1$. N = 94 firms. All tests are two-tailed. Standard errors are in parentheses.

Table 4 – Determinants of centrality with multi-level modeling (H3a, H3c, H4a)

Dependent Variable: Centrality	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
ROA	-0.50***	-0.50***	-0.50***	-0.50***	-0.50***	-0.53***	-0.48***
	(0.07)	(0.07)	(0.07)	(0.08)	(0.08)	(0.11)	(0.08)
Size	0.70	0.71	0.71	0.86	0.70	0.85	0.67
	(0.48)	(0.52)	(0.51)	(0.52)	(0.50)	(0.57)	(0.51)
Growth Rate	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leverage	0.01**	0.01**	0.01**	0.01*	0.01**	0.01*	0.01
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.04)	(0.03)
Age	0.05	0.05	0.05	0.05	0.05	0.04	0.04
	(0.05)	(0.04)	(0.04)	(0.04)	(0.05)	(0.04)	(0.06)
Bank	4.66*	4.67*	4.63*	4.18+	4.66*	2.98	4.44*
	(2.25)	(2.25)	(2.29)	(2.23)	(2.26)	(2.31)	(2.13)
Leasing Company	0.54	0.56	0.54	0.27	0.54	-0.34	0.81
	(2.06)	(2.13)	(2.10)	(2.18)	(1.98)	(2.66)	(2.37)
Investment Company	2.13	2.12	2.11	1.80	2.13	1.18	1.93
	(3.38)	(3.41)	(3.39)	(3.27)	(3.30)	(3.20)	(3.15)
Insurance Company	7.38**	7.40**	7.40**	7.53***	7.38**	6.35**	6.83*
	(2.44)	(2.35)	(2.39)	(2.10)	(2.60)	(2.46)	(2.77)
GDP per capita	2.77	2.77	2.81	0.41	2.77	-0.92	-2.57**
	(2.16)	(2.16)	(2.53)	(2.16)	(2.18)	(1.20)	(0.97)
Muslim Population	-0.57	-0.52	-0.57	-0.27	-0.57	-0.84	0.71
	(1.80)	(1.91)	(1.80)	(1.36)	(1.76)	(0.94)	(1.03)
Muslim Percentage	0.16+	0.16	0.17	0.18+	0.16+	0.08	-0.08
	(0.09)	(0.14)	(0.15)	(0.10)	(0.09)	(0.11)	(0.10)
Year 2009	3.60**	3.57**	3.60**	3.40**	3.60**	3.59*	3.04*
	(1.17)	(1.18)	(1.18)	(1.28)	(1.23)	(1.67)	(1.55)
Voice and Accountability		0.56				-7.55**	
		(4.73)				(2.73)	
Democracy Index			0.22				-5.24***
			(1.57)				(1.65)
Government Regulation				- 8.44*		-12.87***	-16.92***
				(3.68)		(2.66)	(3.17)
Industry Institutions					-0.03	0.59	4.45
					(4.01)	(2.86)	(3.39)
Intercept	-33.04	-34.12	1.76	-21.47	-33.04	1.76	31.54
	(45.44)	(49.42)	(23.95)	(35.16)	(46.29)	(20.33)	(14.70)
Var(constant)	20.34	20.92	20.68	10.12	20.34	0.00	0.00
Var(residual)	115.26	115.09	115.16	116.14	115.26	119.11	115.99
LR Test (Chibar^2)	11.63***	8.32**	10.24***	3.09*	11.24***	0.00	0.00
Wald Chi^2	32.06**	31.91**	31.98***	41.93***	32.06**	84.44***	90.88***

***: $p < 0.001$; **: $p < 0.01$; *: $p < 0.05$; +: $p < 0.1$. N = 155 firm-years. All tests are two-tailed. Standard errors are in parentheses. We multiplied normalized centrality by 100 for the ease of reporting the coefficients, as they tend to become too small when the DV is between 0 and 1.

Table 5 – Interaction effects on performance with multi-level modeling (H3b, H3d, H4b)

Dependent Variable: ROA	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Size	0.92***	0.84***	0.87***	0.92***	0.85***	0.84***	0.86***
	(0.25)	(0.26)	(0.26)	(0.26)	(0.26)	(0.26)	(0.26)
Growth Rate	-0.01**	-0.01**	-0.01**	-0.01**	-0.01**	-0.01**	-0.01**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Leverage	-0.03+	-0.03+	-0.03+	-0.03+	-0.03+	-0.03+	-0.03+
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Age	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Bank	2.63+	2.90+	2.71+	3.02+	2.81+	3.08*	3.09*
	(1.60)	(1.59)	(1.60)	(1.60)	(1.59)	(1.56)	(1.58)
Leasing Company	3.94	4.19	3.92	4.15	3.35	4.27	3.92
	(5.58)	(5.63)	(5.63)	(5.65)	(5.64)	(5.57)	(5.58)
Investment Company	0.82	0.97	0.84	0.79	0.93	1.20	1.19
	(1.89)	(1.90)	(1.90)	(1.90)	(1.90)	(1.88)	(1.89)
Insurance Company	6.63**	6.16*	6.09*	6.53**	6.02*	6.41**	6.55**
	(2.42)	(2.45)	(2.44)	(2.46)	(2.43)	(2.43)	(2.43)
GDP per Capita	-0.07	0.30	0.74	0.53	0.33	-0.04	-0.07
	(0.67)	(0.74)	(0.77)	(0.78)	(0.81)	(0.75)	(0.83)
Muslim Population	-0.29	-0.34	-0.37	-0.82	-0.56	-1.00	-0.80
	(0.52)	(0.60)	(0.61)	(0.62)	(0.57)	(0.66)	(0.67)
Muslim Percentage	-0.03	-0.03	0.003	-0.03	-0.01	-0.06	-0.05
	(0.04)	(0.05)	(0.06)	(0.06)	(0.06)	(0.05)	(0.06)
Year 2009	-0.86	-0.92	-0.89	-0.78	-0.96	-0.77	-0.82
	(0.98)	(0.99)	(0.98)	(0.99)	(0.98)	(0.98)	(0.98)
Centrality	-1.40*	-1.49+	-1.33+	-1.99***	-1.74***	-1.81*	-1.73*
	(0.71)	(0.71)	(0.71)	(0.71)	(0.53)	(0.72)	(0.64)
Voice and Accountability		0.07				-0.99	
		(1.39)				(1.35)	
Democracy Index			1.44	0.46	0.92		0.03
			(1.49)	(1.57)	(1.49)		(1.57)
Government Regulation		0.87	1.37	3.46*	1.36	2.66+	2.18
		(1.26)	(1.37)	(1.44)	(1.23)	(1.49)	(1.66)
Industry Institutions		-0.82	-1.31+	-1.27+	-1.59*	-1.17*	-1.28+
		(0.61)	(0.74)	(0.74)	(0.72)	(0.74)	(0.73)
Centrality * Voice and Accountability		-0.19				0.72	
		(1.37)				(1.17)	
Centrality * Democracy Index			0.13				0.79
			(1.00)				(1.02)
Centrality * Government Regulation				2.12*		2.07*	1.50
				(0.95)		(1.01)	(0.99)
Centrality * Industry Institutions					-1.26*	-1.16*	-1.30*
					(0.54)	(0.57)	(0.66)
Intercept	-10.62	-12.49	-19.16	-9.04	-11.61	2.96	-0.57
	(13.16)	(13.63)	(12.96)	(14.47)	(13.56)	(14.98)	(15.67)
Var(centrality)	1.91	1.34	1.17	0.00	0.00	0.00	0.00
Var(constant)	0.49	0.12	0.02	0.00	0.00	0.00	0.00
Var(residual)	28.03	27.95	27.92	28.18	28.08	27.39	27.46
LR Test (Chibar^2)	5.20	2.09	1.80	0.00	0.00	0.00	0.00
Wald Chi^2	35.11***	42.43***	47.89***	89.97***	90.85***	97.07***	96.38***

***: $p < 0.001$; **: $p < 0.01$; *: $p < 0.05$; +: $p < 0.1$. N = 155 firm-years. All tests are two-tailed. Standard errors are in parentheses.

Figure 1 – H3d: Moderation effect of government regulatory institutions

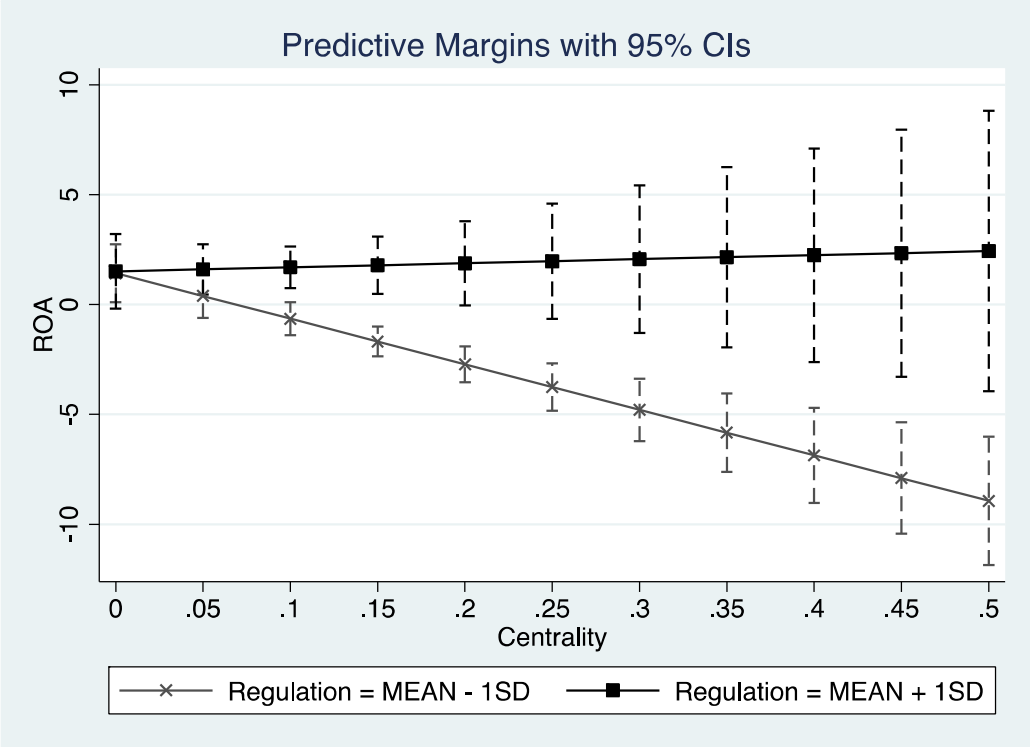
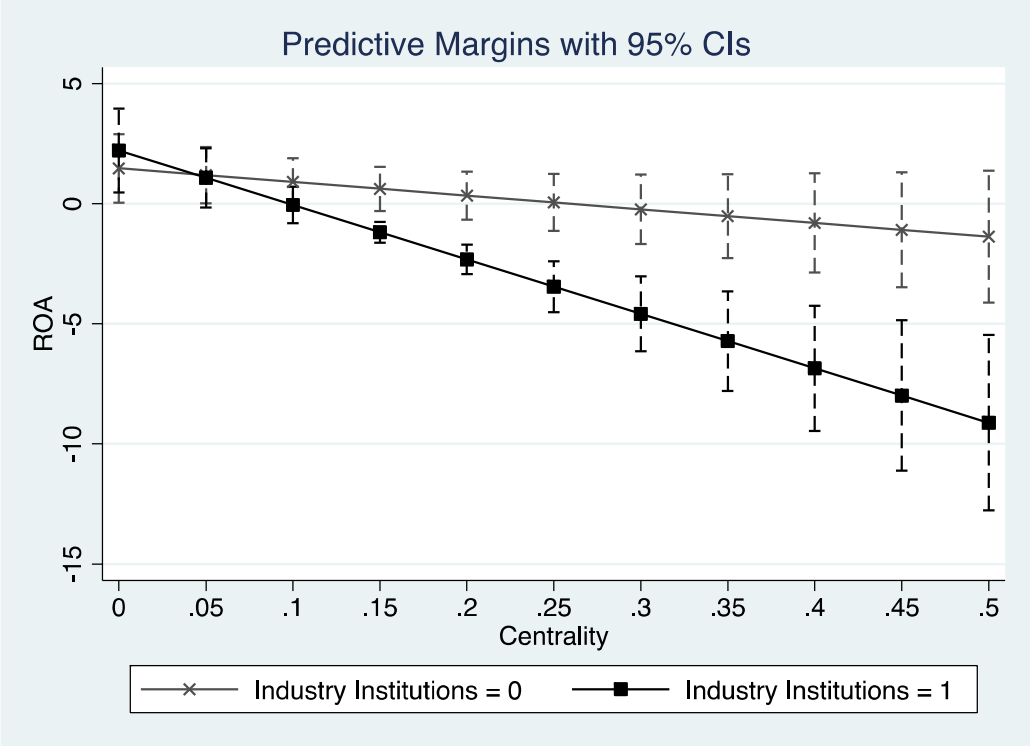


Figure 2 – H4b: Moderation effect of industry-specific institutions



[1] A search for the term 'board interlocks' returned 3730 papers in google scholar, whereas searches for 'consultant interlocks' and 'auditor interlocks' yielded only 2 and 1 papers, respectively; Searches for variations of these terms, such as 'interlocking boards', 'interlocking directorate', 'interlocking consultants', and so on yielded similar results that clearly indicate the near exclusive focus of the extant research on corporate board interlocks.

[2] In addition, an IFI, as a for profit firm, may also have an incentive to select more lenient scholars who are more permissive with respect to Islamic banking products. Yet, we argue that scholars will internalize a strong religious focus, and the more they do, the more they are part of the corporate religious elite. As we focus in the following on the effects of scholars maintaining many simultaneous board seats and thus being strongly anchored in the religious elite, we suggest that leniency will not be an important issue here.

[3] While some of this leaked information may be recombined with the receiving firm's own similar or complementary resources (Harrison, Hitt, Hoskisson & Ireland, 2001), to create new product variations, we find it reasonable to assume that, in many instances, products that 'work' will simply be copied.