

A shared boundary object: Financial innovation and engineering in Islamic financial institutions

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A Shared Boundary Object: Financial Innovation and Engineering in Islamic Financial Institutions

Abstract

This paper explores the way in which ethico-faith-based rules act as a boundary object in constraining the process of financial innovation and engineering (FIE) in Islamic Financial Institutions (IFIs). The paper examines how this faith-based approach is enacted in the FIE process amid different social worlds and groups that cooperate without consensus within IFIs. We contribute to studies of governance in faith-based organizations, by identifying the plasticity of faith-based rules that act as boundary objects in the governance of the FIE process. The plasticity of ethico-faith based rules allows coordination among local and global actors with intersecting faith-based values, logics, and interests. IFIs ensure that the products of FIE become an integral part of and as compatible as possible with the logics of global financial markets.

Keywords: Islamic financial institutions, Governing innovation, Financial engineering, Ethico-faith-based rules, Boundary object plasticity

1. Introduction

The importance of religion, religious beliefs and practices to contemporary forms of organizations and organizational research has increased in recent decades (Holt and den Hond, 2013, Biberman and Altman, 2004, Tracey, 2012, Robbins and Lapsley, 2015). Research has revealed the influence of religion in organizational practices (Coghlan, 1987, McGrath, 2005, Miller, 2002, Bartunek, 1984, Pearce et al., 2010, Sørensen, 2010, Bigoni et al., 2020, Dobie, 2015). Others have explored the meaningful influence of religion in promoting spiritual movements within organizations, including the rise of social business movements (Spear, 2010, Soule, 2012, Proffitt Jr and Spicer, 2006, Chiarello, 2011, Jingjit and Fotaki, 2010, Koning and Waistell, 2012, Momin and Parker, 2013), and pressures to include social and ethical considerations in the investment strategies (Louche et al., 2012, Alshehri et al., 2013, Hidayah et al., 2019). Similarly, the ethos of Islamic financial institutions (IFIs) provides alternative approaches in the undertaking of financial activities in line with Islamic religious rules (Shariah) (Nienhaus, 2011, Warde, 2010, DiVanna et al., 2009).

As an alternative to existing banking institutions, IFIs are meant to offer asset-backed and interest-free banking and financial transactions, to avoid speculative activities in order to promote equality, entrepreneurship, and partnership (Iqbal and Mirakhor, 2007, Diwany,

2010). Islamic law, as it relates to commerce, directs IFIs to provide ethico-faith-based financial support in the form of equity-type investments based on the principle of profit and loss sharing, while avoiding predetermined or fixed returns (Archer and Karim, 2007, Henry and Wilson, 2004, Duqi et al., 2019). In contrast to conventional finance, 'money is to be tied to real (material) assets to make them grow; it ought not to be used as a commodity in itself or used as collateral' (Pollard and Samers, 2007 p. 314). Some research studies in IFI practices have explored controversies around governance issues in IFIs and whether they may, at times, be departing too far from established religious/faith-based rules (Pitluck, 2012, Maurer, 2005, Fang, 2014, Rethel, 2010, Pollard and Samers, 2013, Hasan, 2012).

In line with Pollard and Samers (2013), we argue that the governance of IFI practices requires actors to mobilize and adapt to the local legalities that include inscribed laws, policies, regulations and standards to shape, enable and circumscribe financial innovation and engineering (FIE). Pressure to follow global financial logics (Maurer, 2001, Pitluck, 2012, Hidayah et al., 2019) have led the governing structures of FIE process in IFIs to exhibit a lack of inclusiveness in their decision-making processes (Rethel, 2010, Maurer, 2012, Hidayah et al., 2020). As a result, recent innovations in IFIs have focused on repackaging modern financial instruments and making them compatible with Islamic principles (Pitluck, 2012, Maurer, 2005, Fang, 2014). However, the literature shows a limited exploration on how IFIs' practitioners engage with diverse global market players, and how they co-construct the emergent, shared meaning of faith-based rules governing IFIs practices. This raises important questions with regards to how professionals in the FIE process can use, maintain or perhaps bridge meanings between the religious/faith-based and the diverse knowledge and perspectives embedded in global financial imperatives.

Our paper aims to examine critical aspects of how the complex FIE process of ethico-faith-based financial products is governed and overseen. Our focus is on how diverse actors curate different knowledge in the faith-based FIE process in IFIs. We explore the FIE process through interviews with 40 IFI practitioners, together with observations and documentary analysis of FIE processes in five IFIs. We use boundary objects (Carlile, 2002, Leigh Star, 2010, Nicolini et al., 2012, Scarbrough et al., 2015) and the pragmatic view of the boundary object concept (Carlile, 2004, Trompette and Vinck, 2009, Sapsed and Salter, 2004) to explore the capacity of religious artefacts to support collaboration across diverse specialist groups. We seek to provide an in-depth understanding of the role religious values play in underpinning alternative/ethical models of finance and its mobilisation when it has to interact and integrate with the dominant knowledge and perspective derived from the capitalist models of finance

(Warde, 2010, Rethel, 2017, Pollard and Samers, 2013, Hidayah et al., 2020, Hidayah et al., 2019).

We contribute to the Islamic finance literature by showing how the pliability of faith-based principles or Shariah serve as both cognitive and social mediators that sustain collaboration among diverse actors from different social worlds and groups that cooperate without the need for consensus. We extend boundary object theory by revealing the way in which diverse actors make use of the plasticity mechanism in a complex financial services context. The plasticity mechanism involves transferring, translating, and transforming different knowledge and perspectives among actors, in order, to create a shared vision in a collaborative process. In a contested FIE process, IFIs demonstrate a degree of fluidity in the (re)interpretation of religious rules that enables the reengineering of financial instruments to suit the global financial markets.

This paper is structured as follows; first, we outline some of the key processes around financial engineering and innovation under religious rules and the conceptualization of religious rules as a boundary object in governing FIE processes. Second, we set out the process for data collection and the analysis of our data. Third, we present our findings as emerged from the data analysis by linking them to the theoretical lens. In the discussion section, we outline our contribution and potential implications. The paper concludes with a summary and avenues for future research.

2. Financial Innovation and Engineering under Religious Rules

Financial innovation may be defined as consisting of acts of invention, ongoing research and development, diffusion or adoption of new financial products, services or ideas (Tufano, 2003). In the marketplace, financial innovation is seen as a means to lessen internal and external financial constraints (Silber, 1983) to achieve greater economic efficiency (Merton, 1995, Laeven et al., 2015). Since Miller (1986), financial innovation has been seen as a critical part of the economic landscape (Tufano, 2003). Product innovations include new derivative contracts, corporate securities, or pooled investment products. Process innovation is represented through new means of distributing securities, processing, and pricing transactions. Modern financial innovations are said to have improved the ability to bear risk, lowered transaction costs and circumvented regulations, but arguably failed to provide real economic benefit to society (Silber, 1983, Elul, 1995, Pitluck, 2012, Maurer, 2005, Maurer, 2003).

In contrast, conventional financial engineering is defined as a process of gradually building up a coherent body of information, until it provides a formula for creating a new financial product (Alamad, 2017: 37-39). The key differentiators between Islamic FIE and conventional financial engineering, is that faith-based financial engineering is either asset-based or asset-backed, unlike its conventional counterpart (Hidayah et al., 2019). Research has acknowledged that, at least in part, IFIs offer a way to connect financial innovation to the real economy (Hidayah et al., 2020, Hidayah et al., 2019, Iqbal and Mirakhor, 2007). IFIs have sought to provide alternative finance, at least ostensibly with an aim to promote equality, entrepreneurship, and partnership in line with a religious orientation and spirit (Grais and Pellegrini, 2006, Asutay, 2012, Hegazy, 2006, Rethel, 2017, Iqbal and Mirakhor, 2007). Those imperatives are meant to guide the development of FIE within IFIs in order to encourage productive activities, in which 'money is to be tied to real (material) assets to make them grow; it should not be used as a commodity in itself or used as collateral' (Pollard and Samers, 2007 p. 314, Hidayah et al., 2019).

The literature on faith-based FIE, however, shows how the identity of IFIs and the Islamic financial products been drifting away from their original faith-based rules and mission (Hidayah et al., 2020, Rethel, 2017). Commentators on the theory and practice of Islamic finance and the financial engineering process (e.g. Alamad, 2019 & 2017, Iqbal and Mirakhor, 2007, Maurer, 2005) are aware of tension between being essentially similar to conventional finance (in terms of competitiveness and efficiency) and effort needed to preserve its unique faith-based character. Within those drifts of mission (Hidayah et al., 2020), how the collaborative process between diverse experts take place and the way in which diverse actors approach such tensions within the FIE process, have not been explored in prior studies. Our paper seeks to contribute by focusing on this area of exploration.

We identify that prior studies have explored how the process of FIE in IFIs involves a combination of Shariah principles and other financial innovation principles (Hidayah et al., 2020, Alamad, 2017, Maurer, 2012, Pitluck, 2012). IFIs have to ensure that the Shariah principles will fit together with the financial and legal regulatory frameworks, the operational considerations and the financial market prescriptions (Rethel, 2018, Pollard and Samers, 2007). Different knowledge and perspectives need to be assembled. The Islamic product innovation eventually fabricates various elements/principles into the products developed by the FIE process. In doing so, IFIs tend to explore the loophole within the existing legal principles (Hegazy, 2006). IFIs approach the tensions and pressures within FIE process by utilising the interpretive flexibility in the Islamic principles around commercial activities.

From classical Islamic literature, there are two views on the interpretation of rules in the development of Islamic financial products. Firstly, the idea of constant Shariah rules (*al qwa'ed al Shar'iyah al thabitah*) in Islamic law, suggests that critical (constant) rules should remain largely unchangeable regardless of place or time (Al-Zarqa, 1968 p. 924-926). Qutub (1974 p. 83) describes this theory of constant Shariah rules as offering a way of establishing justice, honesty and truthfulness by maintaining matters according to their objectives, removing excessive uncertainty and the prohibition of usury. These 'constant' rules serve as a general ethico-faith reference that should be maintained in all Islamic business transactions (Schoon, 2011, Nienhaus, 2011, Riham Ragab, 2008, Chapra, 2007).

Secondly, the classical Islamic literature also recognises the flexibility of Shariah rules on commercial activities, which suggests 'the origin of all activities is permissibility, (*al-asl fi al-ashya' al-ibahah*)' (Al-Zarqa, 1968 p. 481). Transactions are deemed feasible as long as they are not prohibited by any explicit textual Shariah rules (such as trading in prohibited financial activities, gambling, and fraudulent activity). IFIs use this rule flexibility to argue every activity/transaction is permissible until proved otherwise (Iqbal, 2012, Mahbubi Ali, 2014, Salim and Hossain, 2016). IFIs argue that Shariah rules cannot remain viable without an object for their application. Shariah rules are believed to be adaptable to the passage of time and new emerging facts, which enable them to support the common good, economic, and technological development (Akhtar et al., 2008, Warde, 2010).

It has been argued that without legal appropriation and innovative commercial application, Shariah rules would be like a dead language (DeLorenzo and McMillen, 2007 p. 133, Ullah et al., 2012, Oseni et al., 2016). The combination of the constant and flexible rules enables IFIs to govern the contested FIE process (Hasan, 2011, Halliday, 2008, Ahmed, 2011). Shariah norms are interpreted to open up spaces to manage conflicts or diverging logics between the concept of ethico-faith based financial products and what constitute acceptable instruments in the global financial market (Poon et al., 2018, Lai, 2015, Hidayah et al., 2020). That is a mechanism IFIs use in order to balance the tensions and to calibrate the compatibility of global capitalism and the moral economy (Rethel, 2018, Hidayah et al., 2019).

We concluded our review of the FIE literature by identifying the limited exploration on how IFIs' actors, including Islamic scholars and practitioners, engage with global market players. The faith-based FIE literature has not explored the way in which diverse experts translate and bridge meanings between the ethico-faith reference and the global financial imperatives. This provides an underlying motivation for our research to explore how IFIs practitioners collaborate

with diverse experts, and co-construct the emergent, shared meaning of faith-based rules in the context of FIE. We seek to frame this exploration using boundary object theory that we conceptualise in a faith-based rules context, as discussed in the following sections.

3. Boundary Objects: A Framework for Interpreting FIE under Faith-Based Rules

3.1 The Boundary Objects in Governing Cooperative Work

Corporate management is accomplished through the cooperative work of multiple actors and elements within and beyond the organization. Diverse disciplinary experts are engaged in interdependent collaboration (Bechky, 2006, Okhuysen and Bechky, 2009, Nicolini et al., 2012). Such cross-disciplinary collaboration in practice is a social accomplishment, which is increasingly mediated by objects or artefacts (Orlikowski, 2002, Nicolini et al., 2012, Cetina, 1997). The object typically comprises a set of material and processual work arrangements that are situated within alternative social worlds or communities of practice (Star and Griesemer, 1989, Leigh Star, 2010). Objects work, not only as boundary devices, but also serve in the scaffolding of human knowledge, epistemic things, object utilised activities, and infrastructures within collaborative works (Nicolini et al., 2012, Swan, 2006). Objects are needed to provide bridges between intersecting social and cultural worlds of different actors involved in collaborative work. This allows diverse actors to both act at a distance and make use of inter-objectivity in order to mediate an enduring interaction (Latour, 1996, Nicolini et al., 2012).

Boundary objects serve as mediating artefact of various knowledge boundaries that are shared among its actors, such as in the context of a software management team (Barrett and Oborn, 2010), bioreactor research teams (Nicolini et al., 2012), participatory poverty alleviation projects (Green, 2010) or in low power radio policy making (Dunbar-Hester, 2013). Boundary objects are useful in promoting sharing of knowledge and in mediating among multiple disciplinary experts to negotiate collective meaning (Sapsed and Salter, 2004). Boundary objects allow interacting actors to arrive at a degree of consensus (Carlile, 2002). Disparate groups of actors can maintain the boundary objects vague identity, while tailoring it to local uses within a common social practice. Boundary objects assist actors to transfer, translate and transform knowledge across boundaries.

The interactional perspective of boundary objects, however, is not a magic bullet, as people and problems around the collective work change (Barrett and Oborn, 2010). Actors might have unequal access to resources and authority (Briers and Chua, 2001), which could lead to potential consequences of silencing and fragmentation (Levina, 2005). To work as a boundary

object, therefore, artefacts should have interpretive flexibility, especially in the context of collective work with the absence of consensus (Star, 1989, Star and Griesemer, 1989). Boundary object should not be too rigid so that it allows effective integration of knowledge and learning process across groups in diverse teams (Vaast and Levina, 2006, Barrett and Oborn, 2010). Interpretive flexibility enables actors to designate an object/artefact that allows the spanning of knowledge boundaries. Some researchers have referred to this interpretive flexibility of an object as its plasticity in use. Plasticity refers to the object being flexible enough to be used for sense-making by different groups (Spee and Jarzabkowski, 2009, Levina and Vaast, 2005), as we further conceptualise in the following section.

3.2 Conceptualising the Plasticity of Faith-Based Rules as Boundary Objects

In this section, we seek to conceptualise religious rules as constituting a boundary object and the nature of its plasticity. Religion has become sacred and influential in a variety of cultural and institutional environments within organizations, as actors ascribe collective meaning to religious rules (Tracey, 2012). The symbolic expression of religious experience converts the collective understandings into a set of categories, which form the basis of a system of meaning or logic in organizations (Davie, 2006, p. 175; Tracey, 2012). Research has explored how religion and spirituality shape and reshape corporate strategy (Coghlan, 1987, King and Smith, 1982, Miller, 2002) and organizational performance (Odom and Boxx, 1988, Pearce et al., 2010).

Religion influences the dynamic within organizations and plays a role in organizational change (Bartunek, 1984, Ludwig, 1993, Plowman et al., 2007), organizational culture (Angus, 1993, Sørensen, 2010), and power dynamics within organizations (Ghumman and Jackson, 2010, Weima, 1965). Weaver and Agle (2002) and Jackall (1988) identify similar cases, where moral values or bureaucratic ethics are deployed to engender collective understanding of individual and managerial roles and commitments. Existing studies, however, mainly focus on the way religion and religious belief affect individual and organizational behaviour, such as individual religiosity or religious lifestyle and individual role orientation within the organization (Nielsen and Edwards, 1982). Literature shows how religion shapes and reshapes individual identity (Anson et al., 1990, Chusmir and Koberg, 1988, Drakopoulou and Seaman, 1998) and organizational identity (Essers and Benschop, 2009, Gutierrez et al., 2010, Weaver and Agle, 2002) in both religious and secular contexts (Bell and Taylor, 2004, Boyle and Healy, 2003, Zaidman et al., 2009, Bartunek, 2006).

However, there is a dearth of findings on how religious beliefs influence the mixing of individual or group behaviour/attitudes in organizations (Tracey, 2012). This motivates us to offer a conceptual framework on how groups of individuals work and collaborate in groups in these contexts of religious belief, which is still relatively under-researched. Through this conceptualisation we seek to provide a framing of how religion and religious belief/rules influence the governance of collaboration by diverse groups of experts across complex business practices. We also seek to identify the mechanisms of plasticity or plastic behaviour, in which diverse actors mobilise and manoeuvre within the increasing demands to achieve economic efficiency while maintaining a religious orientation. The boundary objects literature helps us to explain why in practice, religious rules: a) are not necessarily applied instrumentally, b) may be flexibly implemented, and c) are shaped and reshaped by social, economic, and political context.

We draw from the interactive view of boundary objects (Carlile, 2004, Trompette and Vinck, 2009, Sapsed and Salter, 2004) to explore the management of knowledge and collaborative practice in organisations through the plasticity enabled by boundary objects. At a micro level, the religious rules become the boundary objects, which function as translational and transformative devices at the boundaries of different disciplinary or professional communities (Nicolini et al., 2012, Carlile, 2002, Star and Griesemer, 1989). To enable interpretive flexibility, the boundary objects need to play a role as a *cognitive mediator* that provides a transaction zone for the diverse perspectives in attendance (Trompette and Vinck, 2009). The boundary objects also need to become a *social mediator*, in order to manage/resolve issues of power and allegiances, exchanges of contributions and identity (Sapsed and Salter, 2004).

Any perspectives and underlying values that are perceived to be too different or too rigid/difficult in the collaborative work will be rejected and require reconfigurations (Turnhout, 2009). Neff et al. (2010) suggest that some experts might have a difficult time in accepting the reconfigured perspectives, and withdraw their contribution to the collaborative work. These experts might have different interpretive flexibility and ability to span knowledge boundaries. These actors might perceive a lack of material stability in the shared boundary and refuse to expand the interpretive flexibility to maintain negotiations across knowledge boundaries. Diverse actors engage in collaboration need to have an interpretive flexibility in mind to sustain the collaborative work.

The boundary object should work as both cognitive and social mediator. The boundary object should enable a knowledge integration that allows heterogeneous translations within the

coordination process of various experts. The integration of diverse knowledge and interests allows actors to engage in the engineering of shared visions through the following mechanism of plasticity of the boundary object (Sapsed and Salter, 2004, Trompette and Vinck, 2009, Carlile, 2004):

1. *Transfer of divergent of knowledge*, where actors are engaged in management of formats of information, values, and practices. This enables diverse experts to respond to situations and seek to develop stable relationships by creating shared repertoires.
2. *Translation from one perspective to another*: This enables interacting actors in a joint activity to provide explanation and confrontation from differing points of view, to mobilise, manoeuvre, and (re)appropriate practices where meanings are ambiguous or unknown.
3. *Transformation of diverse knowledge and interests into shared visions*: This enables actors with divergent interests to negotiate and construct acceptable compromises and shared visions.

The above mechanisms are relevant to explain how religion/religious rules are mobilised fluidly in corporate management, as represented in the application of ethico-faith or Shariah rules in the context of IFIs. Weiss (1998) explores the contested application of religious values in modern corporate management. Weiss further explores the difficulty in blending Shariah principles in modern commercial transactions. The religious values guiding Islamic financial contracts often contradict the logic of financial markets (Hidayah et al., 2019). In order for products to be acceptable and sustainable, IFIs have to follow shareholder interests, as well as financial market and regulatory requirements (Hidayah et al., 2020).

In the FIE process, Islamic financial products must be engineered in order to cater for market and regulatory appetite. The FIE process also involves collaboration and coordination of both the external experts and internal functions in the IFI. The collaborative work extends to both local and global levels, legal and tax professionals, financial regulators involved in the inter-banking relations among IFIs or various players in different jurisdictions. The FIE in IFIs represents a contested process of adjustment and modification of faith-based rules and strategic direction, formal and informal systems, and competencies and interests of key actors (Bruns, 2013).

The clashes among logics, various interests and practices have to be resolved on a case-by-case basis. In this process, IFI practitioners mobilise the constant and flexible rules of Shariah in order to transfer, translate and transform competing knowledge and perspectives. The general rules in Islamic law (which consist of both constant and flexible rules) are used as a

basis for plasticity mechanism. The flexible nature religious rules are utilised in transferring various knowledge and judicial discretions that allows IFIs practitioners to transform competing perspectives in order to create a sense of equity in a collective effort of interpretation (Mansour et al., 2015). The flexible nature of religious rules is mobilised fluidly to bridge the ethico-faith and market capitalistic values, logics and interests. The plastic mechanism enables various stakeholders who collaborate without consensus to establish Shariah as a shared object that governs the cooperative work. The dynamic element of enacting faith-based rules as a shared boundary object in the FIE process is conceptualised in Figure 1 below.

Figure 1: The role of faith-based rules as a shared boundary object in FIE

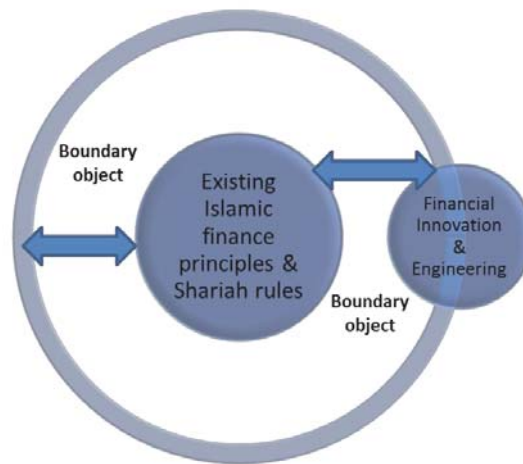


Figure 1 conceptualises the interaction between the faith-based rules within the boundary object

The inner circle in Figure 1 represents the dynamic interactions between constant and flexible Shariah rules in the FIE process. The flexible rules i.e. the outer circle, allow the pushing or modification of boundaries as part of the plasticity of interpretation of Shariah rules to introduce a new financial innovation that can then fall within these modified boundaries. Diverse experts engage in the plasticity provided by Shariah rules, as they transfer and translate diverse knowledge and perspectives. This allows them to transform and re-appropriate practices to achieve a shared vision in the contested FIE process (Carlile, 2004, Trompette and Vinck, 2009, Sapsed and Salter, 2004). In developing a home finance product, for example, problems may arise where IFIs need to raise funds to buy assets. IFIs cannot adopt a non-Shariah compliant means of financing in the money market, such as short selling or future transactions as these would include interest in the transaction or the absence of exchange of counter

values at the time of execution. This would contradict the constant religious rules, which should be followed.

Experts in IFIs translate among various perspectives to make use of or appropriate the flexibility of faith-based rules. IFIs practitioners resolve boundary constraints by transforming the normative rules into a procedural and legalistic conception of ethico-faith references (Hegazy, 2006, Hidayah et al., 2019). In a home financing transaction, IFIs experts engage in translation and transformation of Shariah rules by developing contract combinations to achieve apparent convergence with a fundamental Shariah rule. The combination of lease and joint co-ownership contracts in home financing is in a way of transforming practices to ensure the legal ownership/management rights of the assets are satisfied. Through this combination both Shariah compliance and product marketability aspects are fulfilled. The original contract is transformed as IFIs re-engineer the use of the unilateral promise that customers can purchase an asset, so that a legally acceptable outcome that provides protection to the IFI is achieved (Alamad, 2017, 2019). This enables IFIs to accommodate different prescriptions imposed by financial regulators.

IFIs religious rules as boundary objects can thus be mobilised as flexible, epistemic artefacts that concurrently “inhabit several intersecting social worlds and satisfy the information requirements of each of them”, (Star and Griesemer 1989: 393). In the context of FIE, balancing various interests and values among different social worlds are constituted in the contributions made by different professional groups and experts in the interpretation of Shariah rules (Hidayah et al., 2020). Religious rules can be used flexibly to bridge different meanings and logics due to the case of various Islamic schools of thought (Weiss, 1998, Vogel and Hayes, 1998), diversity of Shariah opinions (DeLorenzo and McMillen, 2007 p. 133, Ullah et al., 2012), and the epistemological clashes between Islamic finance and the financial markets (Rethel, 2017, Pollard and Samers, 2007).

The shared object balances the deep emotional power in the static Shariah rules and the flexibility of Shariah rules. This ability to facilitate different contributions to the achievement of a shared language that helps deal with the complexity of the FIE process, where diverse opinions and interpretations co-exist requires collaboration among different actors (Nicolini et al., 2012, Langlely et al., 2019). Shariah rules as a boundary object are constructed and employed by diverse actors in a dynamic process that represents and enacts foci for their actions and activities (Scarborough et al., 2015). The pressures to achieve significant growth has put IFIs under pressure to provide suitable instruments for a complex spectrum of needs and interests (Adam and Thomas, 2004, DeLorenzo and McMillen, 2007). The shared rules

must be sufficiently accommodating to allow for interpretive flexibility across different knowledge boundaries. IFIs demonstrate a 'plasticity' (Barrett and Oborn, 2010), through which the boundary object may be appropriated by various communities of practice. This enables the Islamic finance industry to fit their faith-based financial products to the global banking and financial industry.

4. Methodology

4.1. Data collection

We collected qualitative data from various sources, including interviews, documentary analysis and observations. A semi-structured interview method was used in order to explore more in-depth the role of faith-based values as a shared boundary object in the FIE in IFIs. We interviewed 40 participants that include Islamic finance scholars, legal experts and practitioners in IFIs, and also regulatory/independent bodies involved in the faith-based FIE process, as shown in Table 1. We conducted interviews at four key important global industry and academic conferences, where all key players from 12 countries were gathered. We selected the interviewees based on their close engagement with the FIE process.

We identified participants who were part of the decision-making in the FIE process within their IFIs, such as experts who are involved in the governance, supervision, or management of the FIE process. We also interviewed regulatory and standard setting experts who are engaged in the consultancy, negotiation, or approval stage in the FIE process. We selected interviewees who have been active in the Islamic financial product development and engineering of Islamic finance instruments in a senior role for at least 5 years. This is because their decision influences the financial innovation and engineering process globally. This is to ensure that an in-depth, most accurate and rich data is collected through this method.

We contacted selected interviewees in advance to arrange a meeting with them, each interviewee was given an overview of the research objective and scope and made aware that disclosing any information about their identity or the identity of their affiliated institutions is strictly based on prior consent from them. If they do not wish to disclose any information a complete anonymity will be ensured. They also were assured that they are free to decline answering any interview question, withdraw or change their answer or withdraw their interview at any time, by a written request, before the write up of the research.

Interviews were then transcribed from the voice recorder. We employed respondent validation approach to increase its internal validity of the overall analysis and ensure accuracy of the

data collected and the reliability of the answers provided (Bryman, 2012, Alvesson and Sköldbberg, 2009). Each transcribed interview was sent back to the interviewee by email to check that we transcribed their answers as was provided by them. This also has given them the chance to amend or change any of their answers. They were also asked whether if they are still happy for their interview to be used for the purposes of the research. A period of ten working days was given to them to respond to us; thereafter, we will assume their approval and accuracy of the transcribed interviews. It is noteworthy that in some cases the interviewees were in quite powerful positions. We include those who are involved as gatekeepers in defining the Shariah and regulatory compliance criteria, and financial viability aspect of a financial product.

Table 1: Overview of Data Sources

Primary Data			
Type	Title & No. of Interviewees	Institution	Regional Distribution & count per region
Face-to-face Interviews (positions at the time of interview, 2013-16)	1. Shariah Scholar (11)	Various Shariah Supervisory Boards of IFIs	Gulf Cooperation Countries (GCC) (11)
	2. CEO (3)	Regulatory Bodies	Southeast Asia (4)
	3. Research Scholar (3)	Legal and Advisory Firms	South Asia (4)
	4. Islamic finance economist (3)	Legal and Advisory Firms	Middle East (8)
	5. Head of Product Development (9)	Various IFIs	North Africa (5)
	6. Head of Shariah Supervision Unit (5)	Various IFIs	Central Africa (2)
	7. Islamic finance experts, legal advisers and supervisors (5)	Independent experts	Europe (4)
	8. Islamic finance experts (4)	Academic Institutions	North America (2)
Total Interviews	40		
Secondary Data			
Type	Title	Related Information	
Published Documents	1. Shariah Standards	AAOIFI, 2015	
	2. Governance Standards	AAOIFI, 2015	
	3. Shariah compliance <i>fatwas</i> (legal opinions)	Various IFIs and products	
	4. Sukuk prospectus	London Alternative Finance Stock Exchange	
	5. Products terms and conditions	Various IFIs	
	6. Financial Reports	Websites of various IFIs	
Annual Reports			
Laws	7. Financial Services & Markets Acts	Islamic banking laws and its amendments	
Unpublished Documents	Minutes	Shariah Supervisory Committee	Minutes of various IFIs
		IFIs Management Meetings	Minutes of various IFIs
		Legal Advice and Opinions	Various legal reports
Policies & Procedures	Product development & governance documents.	Various IFIs	
	FIE documents	Various IFIs	
Legal Agreements	Derivatives	Various IFIs	
	IIFM/ISDA Master Tahawwut agreements	IIFM 2012	
	Sukuk Agreements	Various sukuk issuances	
	Wakala, Murabahah and FX money market agreements	Various IFIs	
	Home finance, investments, savings deposits & other products agreements	Various IFIs	

We used semi-structured interviews to collect information from the right mix and coverage of influential figures in the Islamic finance industry in order to explore the role of Shariah rules in the FIE processes from the interviewees perspective/experience (Bryman, 2012, Alvesson and Sköldbberg, 2009), as shown in Table 1. The questions mainly focused on how Shariah rules are integrated in the FIE processes, what makes a financial innovation compliant with Shariah rules, the negotiations, tensions and efforts towards achieving a consensus among various actors or bridging various views and interpretations on the role of Shariah rules as a boundary object in FIE.

We also used documentary analysis and observations of FIE processes to reduce possible information bias from our interviews (see Table 1 and Figure 2). Documents from at least five IFIs were collected for each financial product that includes prospectuses, Islamic legal opinions, and certification of compliance with Shariah rules. We combined retrospective data from product development documents and minutes of meetings of the FIE process that we obtained from several IFIs. The combined detailed observations of the documents and retrospective data and the willingness and openness of interviewees to provide an in-depth insight into the FIE process have helped us achieve this goal, while minimising any biases and maintaining objectivity as far as possible (Miller et al., 1997, Prange et al., 2017).

Data on Shariah boundary and consumer deposit guarantee	
Interviews	<i>“Shariah rules and Islamic finance principles promote financial transactions, which share both risk and loss as their core objective. Flexibility of Shariah or any engineered financial innovation or solution should be in accordance with Shariah rules and not compromising them”. (Shariah scholar 9, AAOIFI)</i>
Observation of the field	We observe extensive discussions and consultation between practitioners in IFIs with Shariah scholars to provide a solution to say that, legally, the IFI’s depositors are entitled to full repayment, thus ensuring compliance with regulatory requirements. This solution however, was not accepted by some Shariah scholars, advising IFIs, who were of the view of that the Shariah rules could not be compromised in this way. It creates tensions among practitioners. One of the results was a Shariah scholar resigned from the Shariah Supervisory Board/Committee.
Documentary Analysis	Some IFIs modified their deposit accounts’ legal documents. Below is an of the extracts that shows the adopted approach to resolve this tension. <i>‘If your (the customer) deposit amount returns a loss, we (the IFI) shall offer to make good the amount of any shortfall that you may have suffered. We are required by current xx bank regulations and policy, pursuant to clause xx, to make this offer to you. If you choose to accept this offer, you shall be entitled to receive payment from us of the full amount that you had previously deposited with us. You are entitled to refuse this offer from us’.</i>

Figure 2: Triangulation of data

Figure 2 above illustrates the triangulation of the data we have collected. The triangulation helped us to ensure the reliability of our findings and to remove any undue bias. Another

reason for triangulating our interviews and documentary analysis is to better explore the participants understanding of religious-based values as a boundary object. Exploring the documentation is a particularly useful way to identify tensions due to internal and external pressures and negotiations involved in the development of mutually acceptable ways of responding to the pressures in the FIE process. The review of documents portrays the value and beliefs of participants/the group being investigated (Bryman, 2012, Corbin and Strauss, 2008).

Direct observation, on the other hand, enabled us to perform an in-depth analysis of the product development processes in our case IFIs. We focussed on observing collaboration of professionals in all stages of FIE processes where IFIs in our case develop various Shariah compliant financial products. We preserved anonymity and confidentiality of our interviewees and the IFIs observed. Every effort was made to ensure that the identity of our participants, IFIs and the data they provided cannot be traced back to them in reports, presentations and other forms of dissemination (Crow and Wiles, 2008).

4.2. Data analysis

We began our analysis of interview transcriptions, relevant documents and observation notes by constructing a template, where a list of codes (to provide the template structure) was used to represent themes identified in the textual data (King, 2004). We sought to link findings from the interviews with the analysis of all relevant documentation and our observation on FIE development processes. This triangulation approach mapped out the role of ethico-faith-based rules to identify the boundaries and the role of the boundary object in the development of FIE as shown in Figure 3.

Narratives Vignettes	Narrative Themes	Theorised Concept
'Shariah rules do not limit the scope of FIE; on the contrary it protects the Islamic finance industry'.	Resilience	The role of faith-based rules as a boundary object in the FIE processes in IFIs
'Shariah requirements are for the benefit of all involved parties, they restrict financial innovation that leads to harm and prohibitions under Shariah'.	Beneficial innovation	
'Faith-based values and principles act as a link in the FIE process bringing different groups of stakeholders to work together for achieving a common objective'.	Framework for innovation	

Figure 3: Sample coding, themes, and theoretical conceptualisation

Figure 3 above conceptualises the findings from the triangulated data and the theorised concept. To ensure data trustworthiness, a log was used to maintain data including contact records, field notes, and interview data, as well as the code data (Gioia et al., 2013, Corley and Gioia, 2004). We used the NVivo 10 qualitative data analysis package for the initial stages of coding and textual analysis. In the first step, open coding was performed (Corbin and Strauss, 2008) to identify initial concepts (Corbin & Strauss, 1990) or first-order codes related to the phenomenon. In the next step, axial coding was used, in which we looked for relationships among and between these first-order categories to arrive at second-order themes (Gioia et al., 2013, Corley and Gioia, 2004).

The next step was to find aggregate dimensions based on these first and second-order categories, as presented in Figure 3. Themes, which include resilience, beneficial innovation, faith-based shared principles, boundary of rules, and adjustment and modification of the shared rules were recurring during the analysis. Although this process is described in linear steps, it was recursive in nature. We continued until a clear idea of emerging theoretical relationships was reached (Bryman, 2012).

Each of these categories was then subjected to more in-depth and detailed analysis to reach the main concept discussed in the findings, such as the role of faith-based rules, negotiation and coordination to achieve consensus, and plasticity of the Shariah boundary. In order to obtain respondent validation, the initial draft of findings was shared with a number of Islamic scholars and practitioners, for their feedback and comments (Sandberg, 2005). We applied the procedures described above throughout the research phases aiming to ensure clarity and trustworthiness, and a balanced perspective in the research process.

5. The Plasticity of Shariah rules as a boundary object in coordinating financial innovation

Our findings show how the plasticity of Shariah rules operate as a boundary object as diverse experts in the FIE process respond to the regulatory and market pressures. FIE in IFIs requires collaborative work and coordination among Shariah scholars, bank managers, legal experts, and relevant subject matter experts. Shariah as boundary object has different meanings to professionals with different social worldviews. In maintaining the coherence among various actors inhabiting the intersecting social worlds while satisfying the requirements of each of them, Shariah offers rules that are sufficiently adaptable to local needs across the various

parties. It must also be sufficiently robust to preserve a common identity across sites (Star and Griesemer, 1989: 393). Shariah in the FIE process in IFIs is manifested through its enactment and interaction across different understandings, cultures, learning philosophies and skill sets as a shared object (Scarborough, et al., 2015 and Carlile 2002). This suggests that Shariah rules as an object are not static and fixed but, unfolding and dynamic, demonstrating 'plasticity' in addressing matters of finance (Barrett and Oborn, 2010).

'It is stated in usul al fiqh (sources of Islamic jurisprudence) that 'originality in all matters is to be permissible, therefore, any person can innovate within those rules that are set by Shariah'. (Shariah scholar - Qatar Foundation).

The plasticity should not compromise, under any circumstances, a constant Shariah rule, such as the ban on usury in financial activity. This concept of the 'plasticity' of Shariah provides the basis for FIE to address current and future needs, as long as it does not contradict the constant Shariah rules. However, the scope of this type of Shariah rule is very wide and left flexible to interpretation. Halliday (2008) argues that Shariah has no fixed legal code and is a function of contemporary power relations, whether of class, state, or religious establishment. It offers the potential, to act as a boundary object, in accommodating alternative views of divine wisdom, as expressed below.

'Shariah is flexible to... the requirements of financial product development as long as it does not contradict with fixed Shariah rules, such as the prohibition on interest, among others. It is something we as product development experts act towards in cooperation with other functions in the business to develop the required outcome. During this process, we would encounter legal, regulatory, or even business requirements that might contradict with Shariah rules. Through an iterative process, we work together with the Shariah compliance function and the Islamic scholars to find a solution that is acceptable from a Shariah perspective. We use a unilateral promise or a service agency agreement in the product structure to overcome such challenges.' (Islamic finance practitioner).

The role of Shariah as a boundary object is 'plasticity' rather than 'flexibility'. Unlike the term flexibility, 'plasticity' refers to being flexible within a given structure and demarcated boundaries. Those boundaries are the constant Shariah rules that shield this structure from collapsing. Should this structure be abused and collapse, this would expose it to criticism as not being truly based on Shariah requirements, as elaborated by a product development manager.

'When finding a Shariah compliant solution for a financial product is proven difficult, because the product structure or objective contradicts with a clear Shariah rule(s), this would mean that the product cannot progress any further. We do accept that as a business decision when the Shariah rules are stretched to find a solution, but they cannot be stretched any further, in order to avoid a Shariah compliance breach. As an Islamic financial institution, this is the boundary according to our governance structure and that is not a bad thing as it provides a layer of protection'. (Islamic finance practitioner- head of product development).

Shariah as a shared object is what differentiates the FIE process in Islamic finance from conventional finance. If the plasticity of faith-based rules towards financial innovation collapses to be boundary-less, IFIs' financial innovation would be no different to conventional products, as the role of Shariah is obfuscated. The role of Shariah as a boundary object, helps to provide focus and to enable collaboration of various actors in the FIE process while maintaining the legitimacy in IFI operations.

The innovation process in IFIs is two-fold, either initiating an original financial innovation that is based on Islamic finance principles or reengineering an existing traditional financial product in a Shariah compliant way. A number of objects are usually involved in the financial innovation process. 'Objects' are defined as 'something people act towards and with' (Scarborough et al., 2015). According to one interviewee:

'Traditional financial institutions have developed and innovated many financial products along with their processes, system and tools, which are widely accepted. ...take the good aspects of it within our religious framework and without contravening Shariah.... Take any traditional financial contract that is widely accepted and practised, such as the letter of credit. If we adjusted it to be in compliance with Shariah, e.g. if it involves interest we can adjust it to avoid interest and ensure that it complies with Shariah, there is nothing in that case prevents us from doing so'. (AAOIFI Shariah Board - 3).

Some IFIs' products are similar to conventional products. IFIs argue that they should focus on the core substance of Shariah and the objectives of the innovation or financial product being engineered. There is some sensitivity within IFIs to the role of Shariah and the potential of Shariah to constrain FIE. Enabling coordination among professionals in a particular regulatory and market setting, involves 'an exhortation to interpret and exceed the boundaries of (economic, neoliberal) belief' (Maurer, 2001), and the engagement of IFIs in a flexible interpretation of the rules around financial practices. According to this view, Shariah should not limit the development of FIE.

'If a river has windy routes and its riverbed is not deep, then, there was a heavy rain, what will happen? The river will flood and destroy the field, livestock, properties, and lives. So, can I say that the riverbed is a limitation to the river that hinders its movement or, that it helps control the flow of its water in the best possible way to reach its final destination when it meets the sea! It is of course the latter, and this is Shariah.... So Shariah is not a restriction. It is there to protect us and help us to achieve our financial benefit in the best possible way according its regulations'. (A practitioner).

This view provides an evaluative frame that helps determine whether a financial innovation or a product being engineered fits its purpose and can be certified as compliant. A product development officer confirms, *'Traditional Shariah scholars who are not trained in financial transactions and banking avoid delving into issues related to new financial innovation and prefer to stay on the safe side'*. Such scholars prefer to confine themselves to the more commonly used rules. They are more likely to take steps to assess and reinterpret the more flexible Shariah rules in the light of new financial needs, as shown in the vignettes that we discuss in the following sub-sections.

5.1. Vignette 1: Plasticity of Shariah boundary in response to regulatory pressure

Actors involved in the FIE process typically acknowledge the importance of the plasticity of Shariah rules and act accordingly. At times, they seek to make use of the plasticity of the boundary rules to resolve specific challenges. They transfer and translate diverse knowledge and perspectives in order to transform and re-appropriate practices to achieve a shared vision in the contesting FIE process by making use of both cognitive and social mediations (Carlile, 2004, Trompette and Vinck, 2009, Sapsed and Salter, 2004).

We explore the development of savings account products in one of the five IFIs in our observations. The savings products were all developed on the basis of profit sharing (Mudharaba) or investment agency agreements (Wakala). The main issue in the FIE process occurs in coordinating with and incorporating regulatory requirements for deposit accounts. The key issue is the definition of 'deposit'. Under local banking regulations, a deposit is defined as a 'sum of money paid on terms under which it will be repaid either on demand or in circumstances agreed by the parties. From a regulatory perspective, it is important to regulate deposit-takers and assure the customer of full repayment as long as the bank remains solvent.

However, from a Shariah point of view, a savings account based on either Mudharaba or Wakala does not recognise a 'deposit'. In a profit-sharing account, under Shariah the customer as capital provider should accept the risk of the loss of capital. There are tensions over

different interpretations of the legal definition of a 'deposit'. Most banking regulators, however, require capital certainty and a guarantee for customers' savings. This is discussed by a Shariah scholar.

'Shariah rules and Islamic finance principles promote financial transactions, which share both risk and loss as their core objective. Flexibility of Shariah or any engineered financial innovation or solution should be in accordance with Shariah rules and not compromising them'. (Shariah scholar 9).

The scholar who was involved in FIE emphasises adherence to the Shariah compliance rules, but we argue that our evidence indicates that Shariah constitutes a boundary object, which is given different meanings in different social worlds. IFIs engage in various mechanisms of plasticity, such as those around Shariah compliance as both cognitive and social moderating devices. These mechanisms include the processes that are engaged in to transfer and translate divergent knowledges that occur through extensive discussions with the financial regulator. The IFI, we studied, went through translation of various perspectives during a lengthy and iterative process of consultation involving Shariah scholars, bankers, and the regulatory authority. The confronting of diverging points of view take place in order to share knowledge and information to achieve a common understanding between the different social worlds and professional groups that we identify (Star, 1989, Leigh Star, 2010). Diverse experts mobilise, manoeuvre, and (re)appropriate practices as illustrated in the minutes of meetings below. Actors are thus able to transform diverse perspectives and construct acceptable compromises and shared visions after they go through a series of negotiations. Consensus is made between three Shariah scholars, the CEO, an independent Shariah scholar, two IFI managers, and the legal adviser who has been liaising with the regulator on the issue of the guarantee scheme.

'We reviewed a memorandum with respect to the question of investment accounts in terms of the formal condition to guarantee the accounts assets versus the imperative of non-distribution of any profits to the shareholders in the case of loss. The memorandum noted that steps should be taken to avoid losses to account holders by covering such losses from the investment risk reserve or from bank insurance etc. The Shariah Supervisory board instructed that the guarantee is unacceptable in Shariah even though it is legally required by the prevailing laws.'

'The Chairman of the Shariah Board suggested removing the provision that the Mudharib (investment manager/IFIs) should incur the direct expenses if that was a regulatory requirement. Hence the document was amended to read: (may make good to you any such capital loss on your savings or term deposit account out of money held by us on behalf of our shareholders). For the principal issue of deposit guarantee, the Board approved by a majority of votes to have recourse to this solution owing to the keen desire to maintain the IFI's presence while seeking, later on, to exclude such guarantee. At this point, the Chairman of the Board abstained and advised that he would

weigh all options with respect to such approval. The Shariah Supervisory Board, with its two members, appreciated the Chairman's viewpoint and his intention to reconsider the issue in view of weighing his options and to resume consultations with them'.

The engineering of a shared vision, however, does not necessarily involve every interacting expert. The minutes above show that a leading Shariah scholar who was advising on the FIE process rejected the solution, otherwise promoted by the group. He was of the view that the Shariah rules could not be compromised in this way. As a result, this Shariah scholar resigned from the Shariah Supervisory Board. In this context, for this scholar, it was impossible for him to agree to a compromised vision of Shariah meaning in this instance. The flexible interpretation on Shariah rules lacked the material stability that he felt was necessary to prevent him from further engaging in these negotiations across knowledge boundaries (Neff et al., 2010)

'We cannot take the deposit and gamble with it in the market or put it in a high-risk business. Most of them [Mudharaba deposits] are also on demand either current account or saving account... There are lots of constraint and restriction on commercial banks and the regulators are justified to regulate that, because it is public money... It is very restrictive for an Islamic retail bank to do what some theorists or economists expect'. (A member of Shariah Supervisory Board).

This process represents a particular approach to achieve a consensus in order to prevent regulatory sanction. As a result, the deposit guarantee scheme was adopted, to confirm that from a Shariah point of view it is legal for the IFI's depositors to receive full repayment. This consensus has been built within the IFI to ensure compliance with regulatory requirements within that jurisdiction.

'If the customer's deposit amount returns a loss, the IFI shall offer to make good the amount of any shortfall. ... The IFI is required by current bank regulations and policy, pursuant to clause XX, to make this offer to the customer. If the customers choose to accept this offer, he/she shall be entitled to receive payment from the IFI of the full deposit amount. The customer is entitled to refuse this offer from the IFI. If however the customer accepts the offer from the IFI to make good the amount of any shortfall, he/she will not be complying with Shariah principles'. (An extract from deposit account legal document).

However, the IFI may give an option to customers to turn down the deposit guarantee. The IFI has also introduced other Shariah compliant risk sharing and loss bearing schemes to meet the required investment return, using the profit reserve or the profit stabilisation reserve.

'If I developed a product that is fully based on and structured according to Shariah requirements, then introduced it to the market, the product will not sell. The reason for that is because customers do not want to take an asset risk, or a price fluctuation of the

underlying assets. The market wants a product that guarantees the principal amount and gives a return regardless of the structure ... we will have to make concessions ... and possibly mimic the conventional products, and this is what raises the problem'. (Islamic finance adviser).

The pressure on IFIs is also coming from market competition with conventional finance, which provides significant motivation to IFIs practitioners to seek to translate and transform Shariah rules in order to develop financial products. The growth of Islamic finance attracts global financial institutions, such as HSBC, Deloitte Touché Tohmatsu, and Palisades Park Capital who have established Islamic finance capabilities. These institutions have become involved in serving customers who seek to engage in Shariah compliant financial alternatives (Fagerer et al., 2010). As a consequence of regulatory and market pressures most products that are deemed Shariah compliant are no longer based on assets as is guided by the faith-based rules. In these circumstances we can conclude that the plasticity mechanisms work as both cognitive and social moderation device that lead to the achievement of a shared vision in the contested FIE process. As we note in the example above involving the Sharia scholar the process is not perfect and on occasion consensus agreement is not forthcoming.

5.2. Vignette 2: The plasticity of the Shariah boundary in response to market pressure

IFIs practitioners mobilise the interpretive flexibility that allows them to engage the plasticity of Shariah as a boundary object. Shariah law in this context operates as a mechanism as both a cognitive and social moderator in order to enable IFIs to compete in the banking market (Carlile, 2004, Trompette and Vinck, 2009, Sapsed and Salter, 2004). They engage in plasticity mechanism that includes transferring, translating, and transforming Shariah principles in order to develop products that are similar to their competitors. Many IFIs are involved in significant efforts to try to assimilate within the global financial order (Rethel, 2017). Some IFI products are no longer based on underlying assets and have become bound into legalistic approaches aimed at finding efficient and optimal structures (Hegazy, 2006). In this context, as conventional banks, IFIs need risk management tools to manage credit risks that result from the holding of idle equity or cash. Liquidity management tools are very limited in IFIs as discussed and noted here.

'You have a lot of cash whether they are equity, bonds or in the case of Shariah law - Sukuk [Islamic bond] type of instruments, project finance. Those are the types of cash instruments that create credit exposures. This hedging product allows those parties who have credit exposures to have a transaction available that is consistent with Shariah law that they can utilize.... The institutions operating on Shariah principles can no longer afford to leave their positions un-hedged'. (Executive director of Islamic banking supervision - Bahrain).

Shariah stipulations against the taking of excessive risk and uncertainty (*gharar*) become a 'red line' when choosing instruments in the market. Practitioners in IFIs, have to transfer diverse knowledge as they work across communities of professionals/scholars from various schools of Islamic jurisprudence, and also with regulators and other market players. They hold wide cross-section concepts of economic theory, from neoclassical to Marxist to Keynesian who have to work together in a 'practice and politic of interpretation', where 'neoliberalism and market logic appear to be the only game' in the industry (Maurer, 2001 p. 11). This translation of various perspectives and transformation of the re-appropriated Shariah vision was represented in an initiative in 2010, which combined a consultation across numerous market players, including ISDA, IIFM, Shariah scholars, lawyers and finance industry experts to develop a standardized hedging (*tahawwut*) documents. This project enabled a consensus to be achieved around the development and recognition of a risk and liquidity management tool as Shariah compliant.

'Tahawwut is a document [that defines what transactions or products] can ... be used for hedging transactions compliant with the Shariah principles... Central to the working endeavor was the collaboration between ISDA and IIFM, because we brought the legal documentation expertise and they brought the Shariah expertise, particularly the Shariah panel, which has now approved the agreement... It is an extensive process that you need to go through very carefully with the Shariah scholars. We were going back and forth with that panel, taking into account their concerns and modifying the agreement to meet their considerations'. (Leading developer of global Islamic hedging agreement).

This translation and effort at achieving a combined meaning was reflected in the 24 drafts that were required prior to the released version. One of the tensions lies in getting Shariah approval for this agreement, as diverse experts are confronting different points of view. IFIs along with the International Islamic Financial Market (IIFM) led the transformation by collaborating with the International Swaps and Derivatives Association to develop this guide to hedging transaction for IFIs.

'All Islamic finance principles are considered because it [tahawwut documents] involves other elements, such as the inclusion of a promise and a pledge in the core contract. In the case of an acceptable Tahawwut (hedging) product, certain requirements are considered to enable IFIs to manage their liquidity and other risks in the financial market. While this is not agreed upon by all scholars, it was the view to address this market challenge faced by IFIs... however we do not encourage IFIs to be involved in derivatives for profit making'. (Shariah scholar).

IFIs have to convince clerics who regard the effort to have a lack of material stability, and so are reluctant to join the interpretive flexibility to approve derivatives. In this instance the

Shariah scholars were wary of the compromises they felt were being required of their religious interpretations, such that negotiations across knowledge boundaries were threatened (Neff et al., 2010). Derivatives, in their view, involve transactions that lack clear underlying assets. However, many scholars moderated their position in accepting the *tahawwut* instrument. According to them, IFIs should avoid the use of derivatives to “speculate” or enhance returns, as expressed in the narrative below.

‘There has to be underlying transactions. We are not talking about synthetic exposure. Let’s think of a really simple example. If we buy a commodity in Euro and we are selling the commodity in Dubai, we need some sort of hedge to manage that exposure to EFEX risks. That’s what derivatives can do in this particular situation. That’s a real transaction, for a real person, for a real business. In conventional derivatives market, only 10% for real hedging purposes, 90% of it is for speculations and arbitrage. We are not talking about that 90%’. (Legal adviser - UK).

Many Shariah scholars, however, have been willing to engage in further transforming the shared vision of how Shariah rules could accommodate derivative transactions. The plasticity mechanisms serve as both cognitive and social moderating device that results in the experts’ agreement to approve derivatives transactions with some restrictions. As a result, IFIs are permitted to hedge against currency movements, credit exposures, rate of return movements, and even sukuk through Islamic credit default swaps (the agreement with which credit protection from one basket of assets are swapped with credit protection from another).

‘The market has been coming to the view that hedging is acceptable and indeed appropriate. In fact, there are scholars who think that it is not only acceptable, but it is wrong not to do it because you are carrying the risks. Just carrying the risk itself is inappropriate’. (Head of Islamic products – UK).

Tension arises within the FIE process when it is believed to compromise the boundary object. IFIs and other market players showed how faith-based rules can be interpreted by different groups, cooperating within the plastic structure of the boundary object to manage tension in the FIE process. The plasticity of the Shariah boundary represents the way IFI experts work to translate diverse knowledge and perspectives and transform them to support new product innovations. The plasticity mechanisms eventually work as both cognitive and social moderating device that allow IFIs to operate under a transformed Shariah vision and legitimize the global market and regulatory logics at the same time (Carlile, 2004, Trompette and Vinck, 2009, Sapsed and Salter, 2004). In this way they achieve a level of consensus towards a mutual end by embracing multiple rationalities from the intersecting social worlds (Tortoriello and Krackhardt, 2010).

6. Discussion

The boundary object concept enables us to capture the dynamic and contested nature of FIE process in IFIs. Based on our analysis, Shariah rules as the boundary object acts across different groups of professionals to balance conflicting meanings/interpretations and to enable shared contributions to the FIE process. In line with Rethel (2018), the FIE process in IFI presents a test case for the compatibility of global capitalism and Islamic finance, or in our case of ethico-faith-based financial innovations. In governing FIE processes, practitioners/scholars communicate, encounter and rationalise Shariah as a shared boundary object in order to reproduce, legitimize and further entrench the institutional and knowledge architectures of interest-based banking system (Rethel, 2017, 2010, Pollard and Samers, 2007), as discussed in the two following sections.

6.1. Governing FIE through a shared boundary object

Our research contributes to the existing discussion of IFIs governance (Warde, 2010, Pitluck, 2012, Maurer, 2005, Fang, 2014, Rethel, 2010, Pollard and Samers, 2013, Hasan, 2012) by arguing that the plasticity of some Shariah rules enables FIE processes to embrace different social worlds and engage across different expert groups. The governance of FIE requires an element of plasticity as the innovation process responds to the social implications of business transactions on the interests of the community (Fang, 2014). This plasticity is particularly important in the interpretation of Shariah among various banking practitioners and Shariah scholars to meet regulatory and market logics. We argue that the role of a shared object was not static but has evolved over time to support the 'emergent action' needed to coordinate an unfolding innovation process that strives to meet financial needs and market demand.

The plasticity of the boundary object in the innovation process is limited by the boundaries set by static Shariah rules. However, at the same time it enables actors to interpret and reinterpret the plastic rules within the boundary object to enable them to achieve consensus among various actors. This adds to the feature of boundary objects as being flexible, epistemic artefacts that inhabit several intersecting social worlds and satisfy the information requirements of each of them (Star, 1989: 393, Nicolini et al., 2012). In our case, Islamic scholars and Shariah advisers within IFIs act as the legal agent and translator of meanings (Poon et al., 2018) to align the ethico-faith requirements with the logic of banking and financial markets. They use the Shariah rules as a boundary object in innovation to adjust or modify the rules, where and when needed, to meet the internal Shariah compliance requirements as well as the regulatory and market pressures. This involves a continuous process of reinterpreting the flexibility within Shariah

We also argue that the plasticity of Shariah involves translating the governance of the FIE process to ensure its compatibility with contemporary banking systems and financial markets. This entails ongoing negotiations between local and global authorities and expertise. The faith-based rules act as a fluid device in the governance of the FIE process that is shaped and reshaped based on the alignment of various structures and demarcated boundaries. The plasticity of faith-based rules is an enabling factor of the FIE process. It helps IFIs to resolve tensions arising because of the desire to offer innovative, yet competitive products. The governance of the FIE process requires the fluidity of Shariah rules to act as a shared object for various groups. It is this fluidity within IFIs that enables financial instruments to be successfully created and legitimised.

6.2. Moderating cognitive and social differences through plasticity mechanisms

We contribute to boundary object theory by exploring the way actors engage in moderating different cognitive and social perspectives through a set of plasticity mechanisms. We argue that the faith-based FIE process involves diverse experts in organisations. These groups of experts seek to engage in transferring and translating different knowledge and perspectives within a complex financial services environment. These episodes of engagement lead to a transformation of the boundary object and the creation of a shared outcome, in the form of new, or redesigned FIE products. In line with Maurer's view (2001), practitioners in IFIs engage in a politic of interpretation, to translate and adjust the faith-based rules where and when needed, to legitimise regulatory and global market logics, also the faith-based legalities. As articulated by Bruns (2013), coordination enables groups working on different collaborative tasks of design, production and so on to 'work alone together' by linking their emerging contributions to other groups.

In the case of IFIs, the FIE process integrates and moderates diverging cognitive and social perspectives embedded in faith-based values and global financial imperatives. The market and regulatory logics and interests are accommodated as a way to achieve the objectives of the financial innovation process as a whole. This is achieved by bridging dissimilarities and deviance across a wide range of participants, sources of authority with various tropes of imagery or reasoning (Rethel, 2018). The FIE process from IFIs internal perspective, also involves moderating various cognitive and social interpretations of Islamic law and the Shariah boundary. It is all about bridging the intersecting views between scholars who regard Shariah as a critical challenge to successful product innovation, and others who may be aiming to stretch the boundary object to engineer a preferred financial solution.

From a broader perspective, the FIE process needs to achieve a consolidated voice by aligning with the scripts and rituals of global banking and finance. To resolve the legal, regulatory, and business/market challenges, IFIs shift from thick/normative to thin/procedural conceptions of the Shariah boundary to accommodate economic neoliberal beliefs. Without the integration of different beliefs and an openness to Shariah reinterpretations, the outcome of the FIE process would struggle to fit with global market expectations. Shariah interpretation in the FIE context can be seen as being about governing the less-dominant financial system and subsuming its logic, to some extent, beneath that of a dominant capitalistic hegemony.

7. Conclusion and Research Implications

Our study uncovers issues around governing FIE with a faith-based focus that has not been explored in the literature. We explore how IFIs' practitioners sustain the engagement with diverse global market players within the FIE process. Our findings show that the FIE process is not a simple story of producing ethico-faith based financial instruments. FIE is a contested process that involves the enactment of fluid Shariah rules as a shared boundary object. We reveal the extent to which the Shariah boundary becomes pliable, as diverse experts transfer, translate and transform various knowledge and perspectives as a way to co-construct the emergent, shared meaning of faith-based FIE process.

We show the dynamic role of religion in responding to regulatory and market pressures. We begin to examine how it has shaped and reshaped human interactions in the financial sector, as practiced by IFIs in our case. We argue that the faith-based FIE process, in the organisation we studied, involves the moderation of different cognitive and social perspectives through a set of plasticity mechanisms. Diverse actors in organisations seek to engage in transferring and translating different knowledge and philosophical perspectives, which lead to a transformation of the boundary object and the creation of a shared vision.

Our research offers practical implications for the Islamic finance industry. IFIs could revisit their FIE practices, in order to assess whether the instruments engineered or reengineered represent a retreat from or move toward neoliberal influence. IFIs could also reassess the extent to which the pressure to develop widely legitimised financial products has delineated a way through which to reorder capitalistic market values and norms. This is important due to the impact on consumers of IFIs and its market. IFIs need to look into the integrity of the religious stamp, that they can rely upon, for such financial products and services.

Our findings could offer valuable insight which IFIs might use to reflect on how industry growth expands beyond the national scale, and the accumulation of assets becomes gradually more aligned with broad neoliberal precepts (Hanieh, 2020, Fang, 2016, Hidayah et al., 2020). The

plasticity of Islamic boundary objects is crucial in the more interconnected Islamic and conventional banking transactions, such as in the FIE of derivatives and finance technology products. In one sense, the plasticity of Islamic boundary objects operates in a similar manner across the globe as the majority of FIE in IFIs is seen to replicate existing conventional financial structures. These processes of replication enable IFIs to offer religiously backed financial instruments in line with global market expectations from FIE.

We also offer insights for contemporary organizations and financial institutions on how the plasticity of boundary objects is crucial in bringing disparate groups of professionals together in other task/project-based environments, such as multifaceted project(s) or systems development, complex production processes, strategic planning, or integration of ethical elements into organizational practices. Capitalist-centric firms, for example, could enact interactional ethics and ethical practices, which encourage the ongoing interpretation of ethics among different actors. The concept of shared boundary objects could be enacted, where organizational governance and ethical logics are recursively intertwined and mutually constituting one another.

Further research could be designed to explore the apparent patterns of FIE process and the product competition among IFIs. This might be used to identify how much product innovation in contrast to product imitation might really be happening. As our study focuses more on the collaboration of diverse actors in FIE process. Future research could extend our findings by examining a much larger sample of IFIs. Other study could also explore how individual behaviour and corporate strategies are influenced or even determined by the blurred identity of ethico-faith based finance. It might also be useful to examine more closely how managers, customers and other stakeholders, to some extent influence the strategic choice of financial services industry in engaging with risk shifting practices in product innovation.

In our paper, we have tried in part, to explain how Islamic finance is in danger of being subsumed into the dominant neoliberal model of global economics in a game of cat and mouse where imitation is the surest form of flattery. Our preference would be to see more innovation and less imitation and mimicking of existing financial products. For this to occur the ontotheology of Islamic finance must be emphasised over the epistemology of modern finance and competitive concerns be given less immediate weight.

8. References

- ADAM, N. J. & THOMAS, A. S. 2004. *Islamic Bonds: Your guide to issuing, structuring and investing in Sukuk*, Euromoney Books.
- AHMED, H. 2011. *Product development in Islamic banks*, Edinburgh University Press.
- AKHTAR, S., AZIZ, Z. A., HEFNER, R. W., THANI, N. N., VENARDOS, A., VOGEL, F. E. & WARDE, I. 2008. Understanding Islamic finance: Local innovation and global integration. *asia policy*, 6, 1-14.
- AL-ZARQA, M. A. 1968. al-Madkhal al-Fiqhi al-Am. *Dar al-Fikr, Beirut*.
- ALAMAD, S. 2017. *Financial Innovation and Engineering in Islamic Finance*, Springer.
- ALSHEHRI, F. A., FOTAKI, M. & KAUSER, S. A Bird Flying in Spiritual Sky between Love, Fear and Hope. Academy of Management Proceedings, 2013. Academy of Management, 15126.
- ALVESSON, M. & SKÖLDBERG, K. 2009. *Reflexive Methodology: New Vistas for Qualitative Research*, SAGE Publications.
- ANGUS, L. B. 1993. Masculinity and women teachers at Christian Brothers College. *Organization Studies*, 14, 235-260.
- ANSON, O., CARMEL, S., BONNEH, D. Y., LEVENSON, A. & MAOZ, B. 1990. Recent life events, religiosity, and health: An individual or collective effect. *Human Relations*, 43, 1051-1066.
- ARCHER, S. & KARIM, R. A. A. 2007. *Islamic Finance The Regulatory Challenge*, Singapore, John Wiley & Sons (Asia) Pte. Ltd.
- ASUTAY, M. 2012. Conceptualising and locating the social failure of Islamic finance: aspirations of Islamic moral economy vs. the realities of Islamic finance. *Asian and African area studies.*, 11, 93-113.
- BARRETT, M. & OBORN, E. 2010. Boundary object use in cross-cultural software development teams. *Human Relations*, 63, 1199-1221.
- BARTUNEK, J. M. 1984. Changing interpretive schemes and organizational restructuring: The example of a religious order. *Administrative science quarterly*, 355-372.
- BARTUNEK, J. M. 2006. The Christmas gift: A story of dialectics. *Organization Studies*, 27, 1875-1894.
- BECHKY, B. A. 2006. Gaffers, gofers, and grips: Role-based coordination in temporary organizations. *Organization science*, 17, 3-21.
- BELL, E. & TAYLOR, S. 2004. From outward bound to inward bound': the prophetic voices and discursive practices of spiritual management development. *Human Relations*, 57, 439-466.
- BIBERMAN, J. & ALTMAN, Y. 2004. Welcome to the new Journal of Management, Spirituality and Religion. *Journal of Management, Spirituality & Religion*, 1, 1-6.

- BIGONI, M., MARAN, L. & FERRAMOSCA, S. 2020. Time, space and accounting at Nonantola Abbey (1350-1449). *The British Accounting Review*, 100882.
- BOYLE, M. V. & HEALY, J. 2003. Balancing mysterium and onus: Doing spiritual work within an emotion-laden organizational context. *Organization*, 10, 351-373.
- BRIERS, M. & CHUA, W. F. 2001. The role of actor-networks and boundary objects in management accounting change: a field study of an implementation of activity-based costing. *Accounting, organizations and society*, 26, 237-269.
- BRUNS, H. C. 2013. Working alone together: Coordination in collaboration across domains of expertise. *Academy of Management journal*, 56, 62-83.
- BRYMAN, A. 2012. *Social Research Methods*, OUP Oxford.
- CARLILE, P. R. 2002. A pragmatic view of knowledge and boundaries: Boundary objects in new product development. *Organization science*, 13, 442-455.
- CARLILE, P. R. 2004. Transferring, translating, and transforming: An integrative framework for managing knowledge across boundaries. *Organization science*, 15, 555-568.
- CETINA, K. K. 1997. Sociality with objects: Social relations in postsocial knowledge societies. *Theory, culture & society*, 14, 1-30.
- CHAPRA, M. U. 2007. *The case against interest: Is it compelling?*, John Wiley & Sons, Inc.
- CHIARELLO, E. 2011. Challenging professional self-regulation: Social movement influence on pharmacy rulemaking in Washington state. *Work and Occupations*, 38, 303-339.
- CHUSMIR, L. H. & KOBERG, C. S. 1988. Religion and attitudes toward work: A new look at an old question. *Journal of Organizational behavior*, 9, 251-262.
- COGHLAN, D. 1987. Corporate strategy in Catholic religious orders. *Long Range Planning*, 20, 44-51.
- CORBIN, J. & STRAUSS, A. 2008. *Basics of qualitative research 3e*. London: Sage.
- CORLEY, K. G. & GIOIA, D. A. 2004. Identity ambiguity and change in the wake of a corporate spin-off. *Administrative Science Quarterly*, 49, 173-208.
- CROW, G. & WILES, R. 2008. Managing anonymity and confidentiality in social research: The case of visual data in community research.
- DELORENZO, Y. T. & MCMILLEN, M. J. 2007. Law and Islamic finance: an interactive analysis. *Islamic finance: The regulatory challenge*, 136.
- DIVANNA, J. A., SREIH, A. & AINLEY, M. 2009. *A new financial dawn: The rise of Islamic finance*, Leonardo and Francis Press.
- DIWANY, T. E. (ed.) 2010. *Islamic Banking and Finance: What It Is and What It Could Be*, Bolton, United Kingdom: 1st Ethical Charitable Trust.

- DOBIE, A. 2015. The role of the general and provincial chapters in improving and enforcing accounting, financial and management controls in Benedictine monasteries in England 1215–1444. *The British Accounting Review*, 47, 142-158.
- DRAKOPOULOU, D. S. & SEAMAN, P. T. 1998. Religion and enterprise: An introductory exploration. *Entrepreneurship: Theory & Practice*, 23, 71-86.
- DUNBAR-HESTER, C. 2013. What's local? Localism as a discursive boundary object in low-power radio policymaking. *Communication, Culture & Critique*, 6, 502-524.
- DUQI, A., JAAFAR, A. & WARSAME, M. H. 2019. Payout policy and ownership structure: The case of Islamic and conventional banks. *The British Accounting Review*, 100826.
- ELUL, R. 1995. Welfare effects of financial innovation in incomplete markets economies with several consumption goods. *Journal of Economic Theory*, 65, 43-78.
- ESSERS, C. & BENSCHOP, Y. 2009. Muslim businesswomen doing boundary work: The negotiation of Islam, gender and ethnicity within entrepreneurial contexts. *Human Relations*, 62, 403-423.
- FAGERER, R., JR., M. E. P. & MCMILLEN, M. J. T. 2010. The 2010 Tahawwut Master Agreement: Paving the Way for Shari'ah-Compliant Hedging. *SSRN*.
- FANG, E. S. 2014. Islamic finance in global markets: Materialism, ideas and the construction of financial knowledge. *Review of International Political Economy*, 21, 1170-1202.
- FANG, E. S. 2016. Three decades of “repackaging” Islamic finance in international markets. *Journal of Islamic Marketing*.
- GHUMMAN, S. & JACKSON, L. 2010. The downside of religious attire: The Muslim headscarf and expectations of obtaining employment. *Journal of organizational behavior*, 31, 4-23.
- GIOIA, D. A., CORLEY, K. G. & HAMILTON, A. L. 2013. Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods*, 16, 15-31.
- GRAIS, W. & PELLEGRINI, M. 2006. Corporate governance in institutions offering Islamic financial services: issues and options.
- GREEN, M. 2010. Making development agents: participation as boundary object in international development. *The Journal of Development Studies*, 46, 1240-1263.
- GUTIERREZ, B., HOWARD-GRENVILLE, J. & SCULLY, M. A. 2010. The faithful rise up: Split identification and an unlikely change effort. *Academy of Management Journal*, 53, 673-699.
- HALLIDAY, F. 2008. Islam, law and finance: the elusive divine OpenDemocracy, February 12, 2008. *OpenDemocracy* [Online]. Available: http://www.opendemocracy.net/article/globalisation/global_politics/islamic_law.
- HANIEH, A. 2020. New geographies of financial power: global Islamic finance and the Gulf. *Third World Quarterly*, 41, 525-546.

- HASAN, Z. 2011. A survey on Shari'ah governance practices in Malaysia, GCC countries and the UK: Critical appraisal. *International Journal of Islamic and Middle Eastern Finance and Management*, 4, 30-51.
- HASAN, Z. 2012. *Shari'ah Governance in Islamic banks*, Edinburgh University Press.
- HEGAZY, W. S. 2006. Contemporary Islamic Finance: From Socioeconomic Idealism to Pure Legalism. *Chi. J. Int'l L.*, 7, 581.
- HENRY, C. M. & WILSON, R. 2004. *The politics of Islamic finance*, Edinburgh University Press Edinburgh.
- HIDAYAH, N. N., LOWE, A. & DE LOO, I. 2020. Identity Drift: The Multivocality of Ethical Identity in Islamic Financial Institution. *Journal of Business Ethics*, 1-20.
- HIDAYAH, N. N., LOWE, A. & WOODS, M. 2019. Accounting and pseudo spirituality in Islamic financial institutions. *Critical Perspectives on Accounting*, 61, 22-37.
- HOLT, R. & DEN HOND, F. 2013. *Sapere aude*. SAGE Publications Sage UK: London, England.
- IQBAL, M. 2012. 4. A guide to Islamic finance principles and financial engineering. *The Islamic Debt Market for Sukuk Securities: The Theory and Practice of Profit Sharing Investment*, 67.
- IQBAL, Z. & MIRAKHOR, A. 2007. *An introduction to Islamic finance: theory and practice*, John Wiley & Sons (Asia).
- JACKALL, R. 1988. *Moral mazes*, Wiley Online Library.
- JINGJIT, R. & FOTAKI, M. 2010. Confucian ethics and the limited impact of the new public management reform in Thailand. *Journal of business ethics*, 97, 61-73.
- KING, M. & SMITH, D. K. 1982. Planning the deployment of clergy. *Long Range Planning*, 15, 104-111.
- KONING, J. & WAISTELL, J. 2012. Identity talk of aspirational ethical leaders. *Journal of Business Ethics*, 107, 65-77.
- LAEVEN, L., LEVINE, R. & MICHALOPOULOS, S. 2015. Financial innovation and endogenous growth. *Journal of Financial Intermediation*, 24, 1-24.
- LAI, J. 2015. Industrial policy and Islamic finance. *New Political Economy*, 20, 178-198.
- LANGLEY, A., LINDBERG, K., MØRK, B. E., NICOLINI, D., RAVIOLA, E. & WALTER, L. 2019. Boundary work among groups, occupations, and organizations: From cartography to process. *Academy of Management Annals*, 13, 704-736.
- LATOUR, B. 1996. On interobjectivity. *Mind, culture, and activity*, 3, 228-245.
- LEIGH STAR, S. 2010. This is not a boundary object: Reflections on the origin of a concept. *Science, Technology, & Human Values*, 35, 601-617.

- LEVINA, N. 2005. Collaborating on multiparty information systems development projects: A collective reflection-in-action view. *Information Systems Research*, 16, 109-130.
- LEVINA, N. & VAAST, E. 2005. The emergence of boundary spanning competence in practice: implications for implementation and use of information systems. *MIS quarterly*, 335-363.
- LOUCHE, C., ARENAS, D. & VAN CRANENBURGH, K. C. 2012. From preaching to investing: Attitudes of religious organisations towards responsible investment. *Journal of business ethics*, 110, 301-320.
- LUDWIG, D. C. 1993. Adapting to a declining environment: Lessons from a religious order. *Organization Science*, 4, 41-56.
- MAHBUBI ALI, M. 2014. Challenges and Opportunities for Development of Islamic Stockbroking in Malaysia. *The Developing Role of Islamic Banking and Finance: From Local to Global Perspectives*. Emerald Group Publishing Limited.
- MANSOUR, W., BEN JEDIDIA, K. & MAJDOUB, J. 2015. How Ethical is Islamic Banking in the Light of the Objectives of Islamic Law? *Journal of Religious Ethics*, 43, 51-77.
- MAURER, B. 2001. Engineering an Islamic future. *Anthropology Today*, 17.
- MAURER, B. 2003. Uncanny exchanges: the possibilities and failures of making change with alternative monetary forms. *Environment and Planning D*, 21, 317-340.
- MAURER, B. 2005. *Mutual life, limited: Islamic banking, alternative currencies, lateral reason*, Princeton University Press.
- MAURER, B. 2012. The Disunity of Finance: Alternative Practices to Western Finance. *The Oxford Handbook of the Sociology of Finance*, 413.
- MCGRATH, P. 2005. Thinking differently about knowledge-intensive firms: Insights from early medieval Irish monasticism. *Organization*, 12, 549-566.
- MERTON, R. C. 1995. Financial innovation and the management and regulation of financial institutions. *Journal of Banking & Finance*, 19, 461-481.
- MILLER, C. C., CARDINAL, L. B. & GLICK, W. H. 1997. RETROSPECTIVE REPORTS IN ORGANIZATIONAL RESEARCH: A REEXAMINATION OF RECENT EVIDENCE. *Academy of Management Journal*, 40, 189-204.
- MILLER, K. D. 2002. Competitive strategies of religious organizations. *Strategic Management Journal*, 23, 435-456.
- MILLER, M. H. 1986. Financial innovation: The last twenty years and the next. *Journal of Financial and Quantitative Analysis*, 21, 459-471.
- MOMIN, M. A. & PARKER, L. D. 2013. Motivations for corporate social responsibility reporting by MNC subsidiaries in an emerging country: The case of Bangladesh. *The British Accounting Review*, 45, 215-228.

- NEFF, G., FIORE-SILFVAST, B. & DOSSICK, C. S. 2010. A case study of the failure of digital communication to cross knowledge boundaries in virtual construction. *Information, Communication & Society*, 13, 556-573.
- NICOLINI, D., MENGIS, J. & SWAN, J. 2012. Understanding the Role of Objects in Cross-Disciplinary Collaboration. *Organization Science*, 23, 612-629.
- NIELSEN, E. C. & EDWARDS, J. 1982. Perceived feminine role orientation and self-concept. *Human Relations*, 35, 547-558.
- NIENHAUS, V. 2011. Islamic finance ethics and Shari'ah law in the aftermath of the crisis: Concept and practice of Shari'ah compliant finance. *Ethical Perspectives*, 18, 591-623.
- ODOM, R. Y. & BOXX, W. R. 1988. Environment, planning processes, and organizational performance of churches. *Strategic Management Journal*, 9, 197-205.
- OKHUYSEN, G. A. & BECHKY, B. A. 2009. 10 coordination in organizations: An integrative perspective. *Academy of Management annals*, 3, 463-502.
- ORLIKOWSKI, W. J. 2002. Knowing in practice: Enacting a collective capability in distributed organizing. *Organization science*, 13, 249-273.
- OSANI, U. A., AHMAD, A. U. F. & HASSAN, M. K. 2016. The Legal Implications of 'Fatwā Shopping' in the Islamic Finance Industry: Problems, Perceptions and Prospects. *Arab Law Quarterly*, 30, 107-137.
- PEARCE, I., JOHN, A., FRITZ, D. A. & DAVIS, P. S. 2010. Entrepreneurial orientation and the performance of religious congregations as predicted by rational choice theory. *Entrepreneurship Theory and Practice*, 34, 219-248.
- PITLUCK, A. Z. 2012. Islamic Banking and Finance: Alternative or Facade? *The Oxford Handbook of the Sociology of Finance*, 431.
- PLOWMAN, D. A., BAKER, L. T., BECK, T. E., KULKARNI, M., SOLANSKY, S. T. & TRAVIS, D. V. 2007. Radical change accidentally: The emergence and amplification of small change. *Academy of Management Journal*, 50, 515-543.
- POLLARD, J. & SAMERS, M. 2007. Islamic banking and finance: postcolonial political economy and the decentring of economic geography. *Transactions of the Institute of British Geographers*, 32, 313-330.
- POLLARD, J. & SAMERS, M. 2013. Governing Islamic finance: Territory, agency, and the making of cosmopolitan financial geographies. *Annals of the Association of American Geographers*, 103, 710-726.
- POON, J. P., POLLARD, J. & CHOW, Y. W. 2018. Resetting Neoliberal Values: Lawmaking in Malaysia's Islamic Finance. *Annals of the American Association of Geographers*, 1-15.
- PRANGE, C., BRUYAKA, O. & MARMENOUT, K. 2017. Investigating the Transformation and Transition Processes Between Dynamic Capabilities: Evidence from DHL. *Organization Studies*, First published date: September-08-2017, 0170840617727775.

- PROFFITT JR, W. T. & SPICER, A. 2006. Shaping the shareholder activism agenda: Institutional investors and global social issues. *Strategic Organization*, 4, 165-190.
- QUTUB, M. 1974. *Al Tatawour wa al Thabat fi Hayati al Bashari*. Beirut: Dar Al Shorouq.
- RETHEL, L. 2010. Whose legitimacy? Islamic finance and the global financial order. *Review of International Political Economy*, 18, 75-98.
- RETHEL, L. 2017. The imaginary landscapes of Islamic finance and the global financial crisis. *Chapters*, 562-579.
- RETHEL, L. 2018. Corporate Islam, Global Capitalism and the Performance of Economic Moralities. *New Political Economy*, 1-15.
- RIHAM RAGAB, R. 2008. Back to basics: an Islamic perspective on business and work ethics. *Social Responsibility Journal*, 4, 246-254.
- ROBBINS, G. & LAPSLEY, I. 2015. From secrecy to transparency: Accounting and the transition from religious charity to publicly-owned hospital. *The British Accounting Review*, 47, 19-32.
- SALIM, R. & HOSSAIN, M. Z. 2016. Equitable Distribution of Wealth and Resources in Islam. *God-Conscious Organization and the Islamic Social Economy*, 78-95.
- SANDBERG, J. 2005. How do we justify knowledge produced within interpretive approaches? *Organizational research methods*, 8, 41-68.
- SAPSED, J. & SALTER, A. 2004. Postcards from the edge: local communities, global programs and boundary objects. *Organization studies*, 25, 1515-1534.
- SCARBROUGH, H., PANOURGIAS, N. S. & NANDHAKUMAR, J. 2015. Developing a Relational View of the Organizing Role of Objects: A study of the innovation process in computer games. *Organization studies*, 36, 197-220.
- SCHOON, N. 2011. *Islamic Asset Management: An Asset Class on its Own?: An Asset Class on its Own?*, Edinburgh University Press.
- SILBER, W. L. 1983. The process of financial innovation. *The American Economic Review*, 73, 89-95.
- SØRENSEN, B. M. 2010. St Paul's conversion: the aesthetic organization of labour. *Organization Studies*, 31, 307-326.
- SOULE, S. A. 2012. Social movements and markets, industries, and firms. *Organization Studies*, 33, 1715-1733.
- SPEAR, R. 2010. Religion and social entrepreneurship. *Values and opportunities in social entrepreneurship*, 31-51.
- SPEE, A. P. & JARZABKOWSKI, P. 2009. Strategy tools as boundary objects. SAGE Publications Sage UK: London, England.
- STAR, S. L. 1989. *The structure of ill-structured solutions: boundary objects and heterogeneous distributed problem solving*.

- STAR, S. L. & GRIESEMER, J. R. 1989. Institutional ecology, translations' and boundary objects: Amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39. *Social studies of science*, 19, 387-420.
- SWAN, J. 2006. Commentary on Wanda Orlikowski's 'Material knowing: the scaffolding of human knowledgeability'. *European Journal of Information Systems*, 15, 467-469.
- TORTORIELLO, M. & KRACKHARDT, D. 2010. ACTIVATING CROSS-BOUNDARY KNOWLEDGE: THE ROLE OF SIMMELIAN TIES IN THE GENERATION OF INNOVATIONS. *Academy of Management Journal*, 53, 167-181.
- TRACEY, P. 2012. Religion and organization: A critical review of current trends and future directions. *The Academy of Management Annals*, 6, 87-134.
- TROMPETTE, P. & VINCK, D. 2009. Revisiting the notion of Boundary Object. *Revue d'anthropologie des connaissances*, 3, 3-25.
- TUFANO, P. 2003. Financial innovation. *Handbook of the Economics of Finance*, 1, 307-335.
- TURNHOUT, E. 2009. The effectiveness of boundary objects: the case of ecological indicators. *Science and public policy*, 36, 403-412.
- ULLAH, S., HARWOOD, I. A. & JAMALI, D. 2012. 'Fatwa Repositioning': the hidden struggle for Shari'a compliance within Islamic Financial Institutions. *Journal of Business Ethics*, 1-23.
- VAAST, E. & LEVINA, N. 2006. Multiple faces of codification: Organizational redesign in an IT organization. *Organization science*, 17, 190-201.
- VOGEL, F. E. & HAYES, S. L. 1998. *Islamic Law and Finance: Religion, Risk, and Return*, Kluwer Law Internat.
- WARDE, I. 2010. *Islamic finance in the global economy*, Edinburgh University Press.
- WEAVER, G. R. & AGLE, B. R. 2002. Religiosity and ethical behavior in organizations: A symbolic interactionist perspective. *Academy of management review*, 27, 77-97.
- WEIMA, J. 1965. Authoritarianism, religious conservatism, and sociocentric attitudes in Roman Catholic groups. *Human relations*, 18, 231-239.
- WEISS, B. G. 1998. *The spirit of Islamic law*, University of Georgia Press.
- ZAIDMAN, N., GOLDSTEIN-GIDONI, O. & NEHEMYA, I. 2009. From temples to organizations: The introduction and packaging of spirituality. *Organization*, 16, 597-621.