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

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Abstract:	<p>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.</p>

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.

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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).

1 In contrast, conventional financial engineering is defined as a process of gradually building up
2 a coherent body of information, until it provides a formula for creating a new financial product
3 (Alamad, 2017: 37-39). The key differentiators between Islamic FIE and conventional financial
4 engineering, is that faith-based financial engineering is either asset-based or asset-backed,
5 unlike its conventional counterpart (Hidayah et al., 2019). Research has acknowledged that,
6 at least in part, IFIs offer a way to connect financial innovation to the real economy (Hidayah
7 et al., 2020, Hidayah et al., 2019, Iqbal and Mirakhor, 2007). IFIs have sought to provide
8 alternative finance, at least ostensibly with an aim to promote equality, entrepreneurship, and
9 partnership in line with a religious orientation and spirit (Grais and Pellegrini, 2006, Asutay,
10 2012, Hegazy, 2006, Rethel, 2017, Iqbal and Mirakhor, 2007). Those imperatives are meant
11 to guide the development of FIE within IFIs in order to encourage productive activities, in which
12 'money is to be tied to real (material) assets to make them grow; it should not be used as a
13 commodity in itself or used as collateral' (Pollard and Samers, 2007 p. 314, Hidayah et al.,
14 2019).

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

25 We identify that prior studies have explored how the process of FIE in IFIs involves a
26 combination of Shariah principles and other financial innovation principles (Hidayah et al.,
27 2020, Alamad, 2017, Maurer, 2012, Pitluck, 2012). IFIs have to ensure that the Shariah
28 principles will fit together with the financial and legal regulatory frameworks, the operational
29 considerations and the financial market prescriptions (Rethel, 2018, Pollard and Samers,
30 2007). Different knowledge and perspectives need to be assembled. The Islamic product
31 innovation eventually fabricates various elements/principles into the products developed by
32 the FIE process. In doing so, IFIs tend to explore the loophole within the existing legal
33 principles (Hegazy, 2006). IFIs approach the tensions and pressures within FIE process by
34 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'iyyah 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).

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

21 We draw from the interactive view of boundary objects (Carlile, 2004, Trompette and Vinck,
22 2009, Sapsed and Salter, 2004) to explore the management of knowledge and collaborative
23 practice in organisations through the plasticity enabled by boundary objects. At a micro level,
24 the religious rules become the boundary objects, which function as translational and
25 transformative devices at the boundaries of different disciplinary or professional communities
26 (Nicolini et al., 2012, Carlile, 2002, Star and Griesemer, 1989). To enable interpretive
27 flexibility, the boundary objects need to play a role as a *cognitive mediator* that provides a
28 transaction zone for the diverse perspectives in attendance (Trompette and Vinck, 2009). The
29 boundary objects also need to become a *social mediator*, in order to manage/resolve issues
30 of power and allegiances, exchanges of contributions and identity (Sapsed and Salter, 2004).

40 Any perspectives and underlying values that are perceived to be too different or too
41 rigid/difficult in the collaborative work will be rejected and require reconfigurations (Turnhout,
42 2009). Neff et al. (2010) suggest that some experts might have a difficult time in accepting
43 the reconfigured perspectives, and withdraw their contribution to the collaborative work. These
44 experts might have different interpretive flexibility and ability to span knowledge boundaries.
45 These actors might perceive a lack of material stability in the shared boundary and refuse to
46 expand the interpretive flexibility to maintain negotiations across knowledge boundaries.
47 Diverse actors engage in collaboration need to have an interpretive flexibility in mind to sustain
48 the collaborative work.

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

1 coordination process of various experts. The integration of diverse knowledge and interests
2 allows actors to engage in the engineering of shared visions through the following mechanism
3 of plasticity of the boundary object (Sapsed and Salter, 2004, Trompette and Vinck, 2009,
4 Carlile, 2004):
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- 6 1. *Transfer of divergent of knowledge*, where actors are engaged in management of formats
7 of information, values, and practices. This enables diverse experts to respond to situations
8 and seek to develop stable relationships by creating shared repertoires.
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- 10 2. *Translation from one perspective to another*: This enables interacting actors in a joint
11 activity to provide explanation and confrontation from differing points of view, to mobilise,
12 manoeuvre, and (re)appropriate practices where meanings are ambiguous or unknown.
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- 14 3. *Transformation of diverse knowledge and interests into shared visions*: This enables
15 actors with divergent interests to negotiate and construct acceptable compromises and
16 shared visions.
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23 The above mechanisms are relevant to explain how religion/religious rules are mobilised fluidly
24 in corporate management, as represented in the application of ethico-faith or Shariah rules in
25 the context of IFIs. Weiss (1998) explores the contested application of religious values in
26 modern corporate management. Weiss further explores the difficulty in blending Shariah
27 principles in modern commercial transactions. The religious values guiding Islamic financial
28 contracts often contradict the logic of financial markets (Hidayah et al., 2019). In order for
29 products to be acceptable and sustainable, IFIs have to follow shareholder interests, as well
30 as financial market and regulatory requirements (Hidayah et al., 2020).
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38 In the FIE process, Islamic financial products must be engineered in order to cater for market
39 and regulatory appetite. The FIE process also involves collaboration and coordination of both
40 the external experts and internal functions in the IFI. The collaborative work extends to both
41 local and global levels, legal and tax professionals, financial regulators involved in the inter-
42 banking relations among IFIs or various players in different jurisdictions. The FIE in IFIs
43 represents a contested process of adjustment and modification of faith-based rules and
44 strategic direction, formal and informal systems, and competencies and interests of key actors
45 (Bruns, 2013).
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53 The clashes among logics, various interests and practices have to be resolved on a case-by-
54 case basis. In this process, IFI practitioners mobilise the constant and flexible rules of Shariah
55 in order to transfer, translate and transform competing knowledge and perspectives. The
56 general rules in Islamic law (which consist of both constant and flexible rules) are used as a
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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

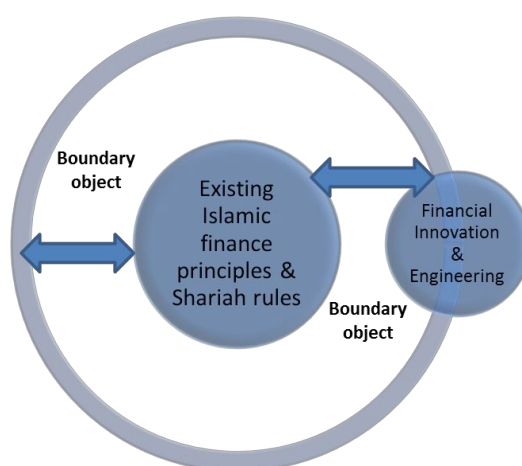


Figure 1 conceptualises the interaction between the faith-based rules within the boundary object

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, Langley 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

1 must be sufficiently accommodating to allow for interpretive flexibility across different
2 knowledge boundaries. IFIs demonstrate a 'plasticity' (Barrett and Oborn, 2010), through
3 which the boundary object may be appropriated by various communities of practice. This
4 enables the Islamic finance industry to fit their faith-based financial products to the global
5 banking and financial industry.
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8 9 10 **4. Methodology**

11 **4.1. Data collection**

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15 We collected qualitative data from various sources, including interviews, documentary
16 analysis and observations. A semi-structured interview method was used in order to explore
17 more in-depth the role of faith-based values as a shared boundary object in the FIE in IFIs.
18 We interviewed 40 participants that include Islamic finance scholars, legal experts and
19 practitioners in IFIs, and also regulatory/independent bodies involved in the faith-based FIE
20 process, as shown in Table 1. We conducted interviews at four key important global industry
21 and academic conferences, where all key players from 12 countries were gathered. We
22 selected the interviewees based on their close engagement with the FIE process.
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30 We identified participants who were part of the decision-making in the FIE process within their
31 IFIs, such as experts who are involved in the governance, supervision, or management of the
32 FIE process. We also interviewed regulatory and standard setting experts who are engaged
33 in the consultancy, negotiation, or approval stage in the FIE process. We selected
34 interviewees who have been active in the Islamic financial product development and
35 engineering of Islamic finance instruments in a senior role for at least 5 years. This is because
36 their decision influences the financial innovation and engineering process globally. This is to
37 ensure that an in-depth, most accurate and rich data is collected through this method.
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44 We contacted selected interviewees in advance to arrange a meeting with them, each
45 interviewee was given an overview of the research objective and scope and made aware that
46 disclosing any information about their identity or the identity of their affiliated institutions is
47 strictly based on prior consent from them. If they do not wish to disclose any information a
48 complete anonymity will be ensured. They also were assured that they are free to decline
49 answering any interview question, withdraw or change their answer or withdraw their interview
50 at any time, by a written request, before the write up of the research.
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57 Interviews were then transcribed from the voice recorder. We employed respondent validation
58 approach to increase its internal validity of the overall analysis and ensure accuracy of the
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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 Regulatory Bodies Legal and Advisory Firms Legal and Advisory Firms Various IFIs Various IFIs Independent experts Academic Institutions	Gulf Cooperation Countries (GCC) (11)
	2.	CEO (3)		Southeast Asia (4)
	3.	Research Scholar (3)		South Asia (4)
	4.	Islamic finance economist (3)		Middle East (8)
	5.	Head of Product Development (9)		North Africa (5)
	6.	Head of Shariah Supervision Unit (5)		Central Africa (2)
	7.	Islamic finance experts, legal advisers and supervisors (5)		Europe (4)
	8.	Islamic finance experts (4)		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 Sköldberg, 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 practioners 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.

1 *'When finding a Shariah compliant solution for a financial product is proven difficult,*
2 *because the product structure or objective contradicts with a clear Shariah rule(s), this*
3 *would mean that the product cannot progress any further. We do accept that as a*
4 *business decision when the Shariah rules are stretched to find a solution, but they cannot*
5 *be stretched any further, in order to avoid a Shariah compliance breach. As an Islamic*
6 *financial institution, this is the boundary according to our governance structure and that*
7 *is not a bad thing as it provides a layer of protection'. (Islamic finance practitioner- head*
8 *of product development).*
9

10
11
12 Shariah as a shared object is what differentiates the FIE process in Islamic finance from
13 conventional finance. If the plasticity of faith-based rules towards financial innovation
14 collapses to be boundary-less, IFIs' financial innovation would be no different to conventional
15 products, as the role of Shariah is obfuscated. The role of Shariah as a boundary object, helps
16 to provide focus and to enable collaboration of various actors in the FIE process while
17 maintaining the legitimacy in IFI operations.
18
19

20
21
22 The innovation process in IFIs is two-fold, either initiating an original financial innovation that
23 is based on Islamic finance principles or reengineering an existing traditional financial product
24 in a Shariah compliant way. A number of objects are usually involved in the financial innovation
25 process. 'Objects' are defined as 'something people act towards and with' (Scarborough et al.,
26 2015). According to one interviewee:
27
28

29 *'Traditional financial institutions have developed and innovated many financial products*
30 *along with their processes, system and tools, which are widely accepted. ...take the*
31 *good aspects of it within our religious framework and without contravening Shariah....*
32 *Take any traditional financial contract that is widely accepted and practised, such as*
33 *the letter of credit. If we adjusted it to be in compliance with Shariah, e.g. if it involves*
34 *interest we can adjust it to avoid interest and ensure that it complies with Shariah, there*
35 *is nothing in that case prevents us from doing so'. (AAOIFI Shariah Board - 3).*
36
37

38
39
40 Some IFIs' products are similar to conventional products. IFIs argue that they should focus on
41 the core substance of Shariah and the objectives of the innovation or financial product being
42 engineered. There is some sensitivity within IFIs to the role of Shariah and the potential of
43 Shariah to constrain FIE. Enabling coordination among professionals in a particular regulatory
44 and market setting, involves 'an exhortation to interpret and exceed the boundaries of
45 (economic, neoliberal) belief' (Maurer, 2001), and the engagement of IFIs in a flexible
46 interpretation of the rules around financial practices. According to this view, Shariah should
47 not limit the development of FIE.
48
49

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

10
11
12 This view provides an evaluative frame that helps determine whether a financial innovation or
13 a product being engineered fits its purpose and can be certified as compliant. A product
14 development officer confirms, *'Traditional Shariah scholars who are not trained in financial*
15 *transactions and banking avoid delving into issues related to new financial innovation and*
16 *prefer to stay on the safe side'*. Such scholars prefer to confine themselves to the more
17 commonly used rules. They are more likely to take steps to assess and reinterpret the more
18 flexible Shariah rules in the light of new financial needs, as shown in the vignettes that we
19 discuss in the following sub-sections.

26 27 **5.1. Vignette 1: Plasticity of Shariah boundary in response to regulatory pressure**

28
29
30 Actors involved in the FIE process typically acknowledge the importance of the plasticity of
31 Shariah rules and act accordingly. At times, they seek to make use of the plasticity of the
32 boundary rules to resolve specific challenges. They transfer and translate diverse knowledge
33 and perspectives in order to transform and re-appropriate practices to achieve a shared vision
34 in the contesting FIE process by making use of both cognitive and social mediations (Carlile,
35 2004, Trompette and Vinck, 2009, Sapsed and Salter, 2004).

36
37
38 We explore the development of savings account products in one of the five IFIs in our
39 observations. The savings products were all developed on the basis of profit sharing
40 (Mudharaba) or investment agency agreements (Wakala). The main issue in the FIE process
41 occurs in coordinating with and incorporating regulatory requirements for deposit accounts.
42 The key issue is the definition of 'deposit'. Under local banking regulations, a deposit is defined
43 as a 'sum of money paid on terms under which it will be repaid either on demand or in
44 circumstances agreed by the parties. From a regulatory perspective, it is important to regulate
45 deposit-takers and assure the customer of full repayment as long as the bank remains solvent.

46
47
48 However, from a Shariah point of view, a savings account based on either Mudharaba or
49 Wakala does not recognise a 'deposit'. In a profit-sharing account, under Shariah the customer
50 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

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

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

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

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

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

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

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

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

5
6 The pressure on IFIs is also coming from market competition with conventional finance, which
7 provides significant motivation to IFIs practitioners to seek to translate and transform Shariah
8 rules in order to develop financial products. The growth of Islamic finance attracts global
9 financial institutions, such as HSBC, Deloitte Touché Tohmatsu, and Palisades Park Capital
10 who have established Islamic finance capabilities. These institutions have become involved in
11 serving customers who seek to engage in Shariah compliant financial alternatives (Fagerer et
12 al., 2010). As a consequence of regulatory and market pressures most products that are
13 deemed Shariah compliant are no longer based on assets as is guided by the faith-based
14 rules. In these circumstances we can conclude that the plasticity mechanisms work as both
15 cognitive and social moderation device that lead to the achievement of a shared vision in the
16 contested FIE process. As we note in the example above involving the Sharia scholar the
17 process is not perfect and on occasion consensus agreement is not forthcoming.

27 **5.2. Vignette 2: The plasticity of the Shariah boundary in response to market pressure**

28
29 IFIs practitioners mobilise the interpretive flexibility that allows them to engage the plasticity of
30 Shariah as a boundary object. Shariah law in this context operates as a mechanism as both a
31 cognitive and social moderator in order to enable IFIs to compete in the banking market
32 (Carlile, 2004, Trompette and Vinck, 2009, Sapsed and Salter, 2004). They engage in
33 plasticity mechanism that includes transferring, translating, and transforming Shariah
34 principles in order to develop products that are similar to their competitors. Many IFIs are
35 involved in significant efforts to try to assimilate within the global financial order (Rethel, 2017).
36 Some IFI products are no longer based on underlying assets and have become bound into
37 legalistic approaches aimed at finding efficient and optimal structures (Hegazy, 2006). In this
38 context, as conventional banks, IFIs need risk management tools to manage credit risks that
39 result from the holding of idle equity or cash. Liquidity management tools are very limited in
40 IFIs as discussed and noted here.

41
42 *‘You have a lot of cash whether they are equity, bonds or in the case of Shariah law -*
43 *Sukuk [Islamic bond] type of instruments, project finance. Those are the types of cash*
44 *instruments that create credit exposures. This hedging product allows those parties who*
45 *have credit exposures to have a transaction available that is consistent with Shariah law*
46 *that they can utilize.... The institutions operating on Shariah principles can no longer*
47 *afford to leave their positions un-hedged’.* *(Executive director of Islamic banking*
48 *supervision - Bahrain).*

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

21
22 *'Tahawwut is a document [that defines what transactions or products] can ... be used*
23 *for hedging transactions compliant with the Shariah principles... Central to the working*
24 *endeavor was the collaboration between ISDA and IIFM, because we brought the legal*
25 *documentation expertise and they brought the Shariah expertise, particularly the*
26 *Shariah panel, which has now approved the agreement... It is an extensive process that*
27 *you need to go through very carefully with the Shariah scholars. We were going back*
28 *and forth with that panel, taking into account their concerns and modifying the*
29 *agreement to meet their considerations'. (Leading developer of global Islamic hedging*
30 *agreement).*

34
35 This translation and effort at achieving a combined meaning was reflected in the 24 drafts that
36 were required prior to the released version. One of the tensions lies in getting Shariah approval
37 for this agreement, as diverse experts are confronting different points of view. IFIs along with
38 the International Islamic Financial Market (IIFM) led the transformation by collaborating with
39 the International Swaps and Derivatives Association to develop this guide to hedging
40 transaction for IFIs.

45
46 *'All Islamic finance principles are considered because it [tahawwut documents]*
47 *involves other elements, such as the inclusion of a promise and a pledge in the core*
48 *contract. In the case of an acceptable Tahawwut (hedging) product, certain*
49 *requirements are considered to enable IFIs to manage their liquidity and other risks in*
50 *the financial market. While this is not agreed upon by all scholars, it was the view to*
51 *address this market challenge faced by IFIs... however we do not encourage IFIs to*
52 *be involved in derivatives for profit making'. (Shariah scholar).*

55
56 IFIs have to convince clerics who regard the effort to have a lack of material stability, and so
57 are reluctant to join the interpretive flexibility to approve derivatives. In this instance the
58

1 Shariah scholars were wary of the compromises they felt were being required of their religious
2 interpretations, such that negotiations across knowledge boundaries were threatened (Neff et
3 al., 2010). Derivatives, in their view, involve transactions that lack clear underlying assets.
4 However, many scholars moderated their position in accepting the *tahawwut* instrument.
5 According to them, IFIs should avoid the use of derivatives to “speculate” or enhance returns,
6 as expressed in the narrative below.
7

8
9
10 *‘There has to be underlying transactions. We are not talking about synthetic exposure.*
11 *Let’s think of a really simple example. If we buy a commodity in Euro and we are selling*
12 *the commodity in Dubai, we need some sort of hedge to manage that exposure to EFEX*
13 *risks. That’s what derivatives can do in this particular situation. That’s a real transaction,*
14 *for a real person, for a real business. In conventional derivatives market, only 10% for*
15 *real hedging purposes, 90% of it is for speculations and arbitrage. We are not talking*
16 *about that 90%’. (Legal adviser - UK).*
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22 Many Shariah scholars. however, have been willing to engage in further transforming the
23 shared vision of how Shariah rules could accommodate derivative transactions. The plasticity
24 mechanisms serve as both cognitive and social moderating device that results in the experts’
25 agreement to approve derivatives transactions with some restrictions. As a result, IFIs are
26 permitted to hedge against currency movements, credit exposures, rate of return movements,
27 and even sukuk through Islamic credit default swaps (the agreement with which credit
28 protection from one basket of assets are swapped with credit protection from another).
29
30
31
32
33
34

35 *‘The market has been coming to the view that hedging is acceptable and indeed*
36 *appropriate. In fact, there are scholars who think that it is not only acceptable, but it is*
37 *wrong not to do it because you are carrying the risks. Just carrying the risk itself is*
38 *inappropriate’. (Head of Islamic products – UK).*
39
40

41 Tension arises within the FIE process when it is believed to compromise the boundary object.
42 IFIs and other market players showed how faith-based rules can be interpreted by different
43 groups, cooperating within the plastic structure of the boundary object to manage tension in
44 the FIE process. The plasticity of the Shariah boundary represents the way IFI experts work
45 to translate diverse knowledge and perspectives and transform them to support new product
46 innovations. The plasticity mechanisms eventually work as both cognitive and social
47 moderating device that allow IFIs to operate under a transformed Shariah vision and legitimize
48 the global market and regulatory logics at the same time (Carlile, 2004, Trompette and Vinck,
49 2009, Sapsed and Salter, 2004). In this way they achieve a level of consensus towards a
50 mutual end by embracing multiple rationalities from the intersecting social worlds (Tortoriello
51 and Krackhardt, 2010).
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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

1 plasticity of Islamic boundary objects is crucial in the more interconnected Islamic and
2 conventional banking transactions, such as in the FIE of derivatives and finance technology
3 products. In one sense, the plasticity of Islamic boundary objects operates in a similar manner
4 across the globe as the majority of FIE in IFIs is seen to replicate existing conventional
5 financial structures. These processes of replication enable IFIs to offer religiously backed
6 financial instruments in line with global market expectations from FIE.
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10 We also offer insights for contemporary organizations and financial institutions on how the
11 plasticity of boundary objects is crucial in bringing disparate groups of professionals together
12 in other task/project-based environments, such as multifaceted project(s) or systems
13 development, complex production processes, strategic planning, or integration of ethical
14 elements into organizational practices. Capitalist-centric firms, for example, could enact
15 interactional ethics and ethical practices, which encourage the ongoing interpretation of ethics
16 among different actors. The concept of shared boundary objects could be enacted, where
17 organizational governance and ethical logics are recursively intertwined and mutually
18 constituting one another.
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27 Further research could be designed to explore the apparent patterns of FIE process and the
28 product competition among IFIs. This might be used to identify how much product innovation
29 in contrast to product imitation might really be happening. As our study focuses more on the
30 collaboration of diverse actors in FIE process. Future research could extend our findings by
31 examining a much larger sample of IFIs. Other study could also explore how individual
32 behaviour and corporate strategies are influenced or even determined by the blurred identity
33 of ethico-faith based finance. It might also be useful to examine more closely how managers,
34 customers and other stakeholders, to some extent influence the strategic choice of financial
35 services industry in engaging with risk shifting practices in product innovation.
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43 In our paper, we have tried in part, to explain how Islamic finance is in danger of being
44 subsumed into the dominant neoliberal model of global economics in a game of cat and mouse
45 where imitation is the surest form of flattery. Our preference would be to see more innovation
46 and less imitation and mimicking of existing financial products. For this to occur the
47 ontotheology of Islamic finance must be emphasised over the epistemology of modern finance
48 and competitive concerns be given less immediate weight.
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58 **8. References**

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