No. 42-2022

Mohammad Reza Farzanegan and Ahmed M. Badreldin

Islam and Entrepreneurship: The role of Islamic Banking

Islam and Entrepreneurship: The Role of Islamic Banking

Mohammad Reza Farzanegan[*abc] and Ahmed M. Badreldin[ac]

[a]Economics of the Middle East Research Group, Center for Near and Middle Eastern Studies (CNMS), School of Business and Economics, Phillips-Universität Marburg, Germany

[b]CESifo (Munich), [c]ERF (Cairo)

Abstract

Studies on the relationship between religion and Entrepreneurship suggest that Islam discourages entrepreneurship. This is sometimes used to explain the excessively high unemployment figures for Muslim majority countries. However, we argue that studies that support this claim have missed a critical moderating factor, namely the presence of Shariah-compliant financing through Islamic banks. Using a multivariate regression analysis of 69 countries, our research shows empirically that the negative effect of Islam on entrepreneurship only applies in the absence of Shariah-compliant access to finance. This negative effect disappears in the presence of Islamic banks, thus disproving the generalized claim that Islam discourages entrepreneurship and showing that Muslim majority countries with high unemployment would do well to encourage the establishment of Shariah-complaint modes of financing to allow inclusion of religious entrepreneurs who would otherwise be excluded from the economy.

Keywords: Islam, Entrepreneurship, Islamic Finance, Islamic Banking, Financial development, New Business Formation, Shariah

---

[*] Correspondence: Center for Near and Middle Eastern Studies, Deutschhausstr. 12, 35032 Marburg, Germany, e-mail: farzanegan@uni-marburg.de. The research assistance of Niklas Brock and Jhoana Ocampo is acknowledged.

1. Introduction

Muslim-majority countries, especially those in the Middle East and North Africa (MENA) region, witness some of the highest rates of youth unemployment worldwide, with an average of 26% vs. the global average of 15% between 2005 and 2020 as seen in Figure 1 (World Bank, 2022a). Additionally, these countries have the lowest levels of new business formation – a common measure of entrepreneurship activities – as seen in Figure 2.
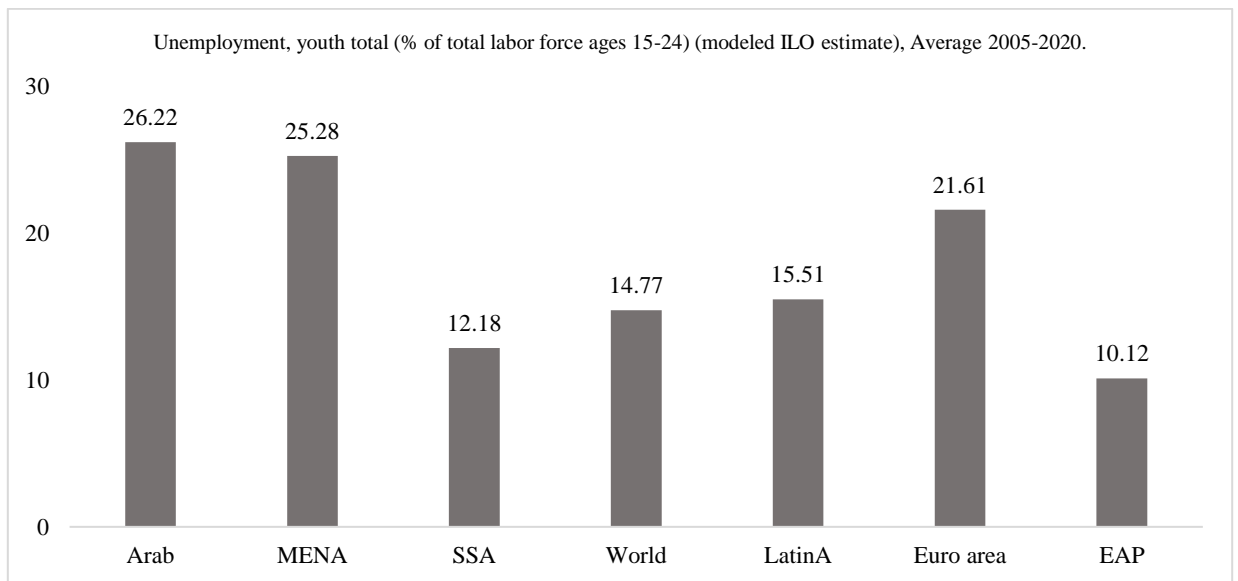

Figure 1. Youth Unemployment and Female Youth Unemployment.

Source: World Bank (2022a). *Arab* (Arab region), *MENA* (Middle East & North Africa), *SSA* (Sub-Sahara Africa), *LatinA* (Latin America), *EAP* (East Asia & Pacific).

Figure 2. Entrepreneurship activities.

Source: World Bank (2022a). *Arab* (Arab region), *MENA* (Middle East & North Africa), *SSA* (Sub-Sahara Africa), *LatinA* (Latin America), *EAP* (East Asia & Pacific).
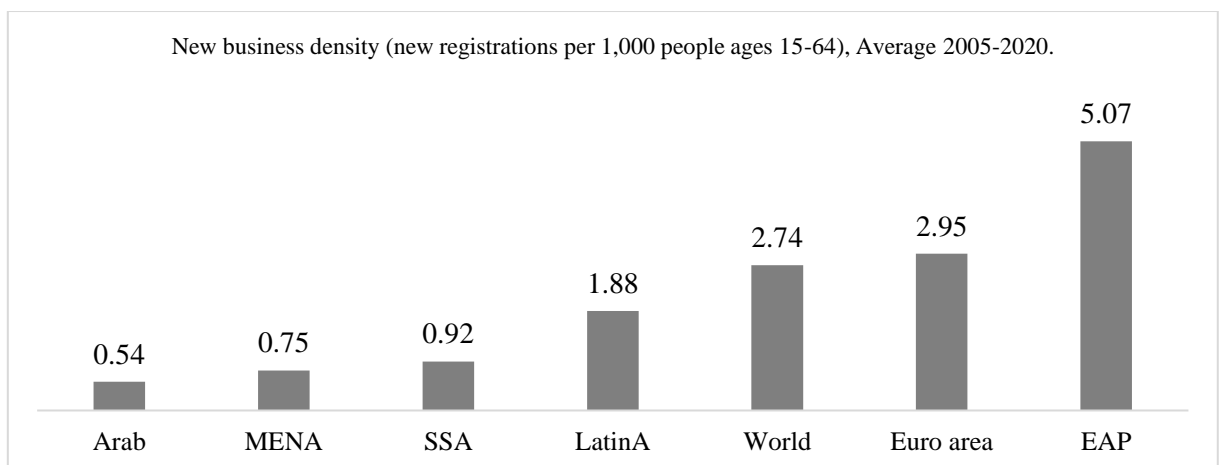
Entrepreneurship activities are known to contribute significantly to job creation and economic growth (Blair & Carroll, 2008; Decker et al. 2014) while increasing the opportunity cost of engaging in conflict and violence (Cramer, 2011).[1]

The lower levels of entrepreneurship activities in these mostly Islamic countries have attracted much attention and debate in the literature. A number of studies have suggested that the main reason behind such low records of new private business formation is that Islam (or Islamic law) discourages entrepreneurship (e.g., see Lewis, 2002; Landes, 1999; Kuran, 2012). Factors such as the influence of Islam on freedom and property rights, egalitarian inheritance system, family formation, gender inequality, lack of adequate organizational capabilities to employ new technologies and fatalism may suppress private business formation and economic development. Mistrust of science, conservatism and traditionalism are also associated with Islamic communities according to Huntington (1996), which also discourage innovation and entrepreneurship. A deficit in the internal locus of control is also suggested by Arslan (2001) as another factor for the lower level of entrepreneurship caused by religious influences. Moreover, lower levels of risk-tolerance in Muslim countries are discussed as another relevant factor in lower levels of entrepreneurship by Bartke and Schwarze (2008) as well as Younis et al. (2022). Different understandings of Islamic law (Shariah), especially in the context of prohibitions, are discussed as another possible hindrance in the promotion of Islamic entrepreneurship (Ghoul, 2010).

However, supporting empirical evidence has been lacking for the suggested theories above, except Zelekha et al.'s (2014) who study religious institutions and entrepreneurship and provide confirming empirical evidence for the hypothesis that a negative effect does indeed exist between Islam (measured as the share of Muslims in the population) and the level of entrepreneurship (measured as the number of entrepreneurs as a share in the population).

Both theoretical arguments, as well as the empirical studies conducted, seem to have missed an important aspect, namely that Islamic law prohibitions that hinder business establishment and access to

---

[1] Our main indicator of Entrepreneurship is obtained from the World Bank Entrepreneurship Database which provides a unique source of comparable and cross-country data on new business density, which is defined as the number of newly registered corporations per 1,000 working-age people (ages 15–64). The units of measurement are private, formal sector companies with limited liability. The data can help understand the trends in new firm creation across regions and income groups. For more information see: https://www.worldbank.org/en/programs/entrepreneurship

finance (elaborated on further in the next section) can be addressed by providing Shariah-compliant alternatives and therefore do not automatically exclude religious individuals from engaging in innovative and entrepreneurial activities.[2]

It is therefore the objective of this research to re-examine the hypothesis that a negative relationship exists between Islam and entrepreneurship. We show that the negative effect of Islam is conditional on the existence of Shariah-compliant financing products provided by Islamic banks. Thus, we contribute to the literature on the effect of Islam on entrepreneurship by considering an important and ignored moderating factor: Islamic banking. Moreover, we show that Islamic banking without the support of Islam as a state or majority religion (a proxy for political and administrative influence of Islam) does not promote entrepreneurship, mainly due to their higher business operational costs compared to conventional banking.

The remainder of this paper proceeds as follows: Section 2 describes in more detail how entrepreneurship is influenced by religion and Islamic banking, while Section 3 provides the empirical methodology, and description of key variables. The main findings of the empirical analysis are presented and discussed in Section 4. Section 5 presents the results of sensitivity checks, and Section 6 concludes the study.

2. Review of literature

Limited literature exists which empirically investigates the effect of Islam as a religion on entrepreneurship (Zelekha et al, 2014), with qualitative discussions that it discourages (Lewis, 2002) or negatively impacts economic development and entrepreneurship (Landes, 1999). However, these hypothetical arguments, which argue that Islam suppresses business, competition and economic development, are at odds with sources such as Iqbal (1997) and Ali et al (2014). Zelekha et al (2014) attempt to empirically test this hypothesis and find evidence that Islam as a religion (measured by the presence of a Muslim majority population) has the least positive contribution to entrepreneurship.

---

[2] Chazi et al. (2020) provide empirical support on positive effect of access to Islamic banking at industrial levels in 14 countries. They show that "industries that are more dependent on external finance grow faster when located in countries with relatively higher presence of Islamic banks compared to conventional ones".

However, Zelekha et al (2014) do not control for the presence of dedicated religiously-conforming (in our case Islamic) banking in their country sample. This is a puzzling given that different factors are known to affect the density of new business formation, one of which is access to finance, which has gained its own position in UNCTAD's Policy Framework for Enterprise Development[3] and is supported by the growing literature on entrepreneurship (see e.g., Motta, 2020; Nabisaalu & Bylund, 2021). Access to finance has also been found to generally aid economic growth (Barajas, Chami, and Yousefi 2013).

Though access to finance refers to both the financial markets and banking sector, Calabrese et al. (2021) emphasize that bank-based financing instruments are the most relevant form of financing for businesses in the EU-28 countries. Cusmano (2015) also confirms this finding for a wider sample of entrepreneurs, while mentioning that entrepreneurs prefer equity financing – through angel investing or venture capital seed investments – to avoid obligatory interest payments in the early stages of development. Although entrepreneurs may prefer equity investments, banking products remain the most prominent financing source for new businesses in the formal economy. On the other hand, evidence shows that banks tend to avoid investing in start-ups since they prefer less risky investments (Cusmano, 2015; Elert et al., 2019) and banks mitigate these risks by conditioning their loans on large equity contributions, collateral or other guarantees.

Among the alternative forms of financing, Islamic banking has increased in size by approximately 9% over the last four years (IFSB, 2021). One main distinction in Islamic banking, compared to conventional banking, is the prohibition of interest-based lending, instead offering mark-up- and equity-based profit-sharing products (Iqbal, 1997; Hearn et al., 2012; Ratten et al, 2017). Among the latter products is *Mudharabah*, which is defined as "*a partnership between the capital provider and an entrepreneur whereby the capital provider would contribute capital to an enterprise or activity that is to be managed by the entrepreneur. Profits generated by that enterprise or activity are shared in accordance with the percentage specified in the contract, while losses are to be borne solely by the capital provider unless the losses are due to misconduct, negligence or breach of contracted terms*" (IFSB, 2021: viii). A classic partnership contract (*Musharakah*) is also an option in Islamic finance

---

[3] See https://unctad.org/topic/enterprise-development/entrepreneurship-policy-hub/5-Access-to-Finance

(IFSB, 2021). Given the aforementioned preference of entrepreneurs for equity financing, Ratten et al. (2017) argue that the emphasis on these forms of financing is expected to encourage entrepreneurship in countries where Islamic banking exists. Furthermore, Patel (2014) suggests using other forms of Islamic financing such as *Sukuk* to encourage entrepreneurship and new private business financing. These contracts closely resemble venture investment and emphasize a focus on real-world activities. Thus it can be assumed that their effect on entrepreneurship in the economies where Islamic banks are active would be significant (Kayed & Hassan, 2014).

In one of the seminal works on Islamic finance, Iqbal clearly suggests that "*The [Islamic financial] system encourages risk-sharing, promotes entrepreneurship, discourages speculative behavior and emphasizes the sanctity of contracts*" (Iqbal, 1997: 42). Ali et al. (2014: 18) note that "*It is plausible to assume that entrepreneurial efforts will increase if the financial risk is not borne exclusively by the entrepreneur (as in debt financing), but shared with the financier (as in participatory financing)*". This is further emphasized in an IMF Staff Discussion Note by a team of researchers who write that the Islamic finance system with *"...its emphasis on asset-backed financing and risk-sharing feature mean that it could provide support for small and medium-sized enterprises..."* (Kammer et al., 2015: 6) and by numerous supporting studies (see for e.g. Hassan and Hippler, 2014; Gümüsay, 2015; Riaz et al., 2016; Rehan et al., 2019; Ali et al., 2014).

Kayed and Hassan (2014) and Gümüsay (2015) argue that Islam is a religion which is pro-development and encourages entrepreneurship. However, the empirical literature on the effect of Islamic banking on entrepreneurship and private enterprise formation is limited. The few related studies focus mainly on Malaysia and approach the topic in a qualitative manner. Malaysian government policies have supported Islamic finance to increase financial inclusion and provided financing to SMEs (World Bank, 2020). Barajas, Ben Naceur, and Massara (2015) show empirically that for Muslim countries, financial inclusion (measured as credit to households and firms for financing investment) improves when Islamic banks exist, however, the effect is not robust.

Thaker et al. (2020) conduct a survey of available Islamic financing products and offer suggestions as to which can be best utilized by small and medium enterprises in Indonesia and Malaysia.

They collect secondary data which show that SMEs in Indonesia rarely use Islamic modes of financing, while those in Malaysia are becoming more aware of these modes and utilize them more often. A similar study is repeated in Malaysia by Muhmad and Rahim (2020). Tawfiqi et al. (2018) conduct a survey questionnaire in Bahrain among 140 entrepreneurs to determine awareness of Islamic financial products among businesses.

Awang et al. (2016) distribute survey questionnaires to 200 active SMEs in Malaysia to determine the degree of acceptance of Islamic financing and highlight that Islamic finance not only encourages business formation due to its risk-sharing nature – which removes the pre-breakeven pressure of paying due interest to the bank –, but also because it allows financing to those who would only engage in Shariah-compliant forms of financing. This point is also supported by Kayed and Hassan (2014: 78) who highlight that "*the majority of potential Muslim entrepreneurs do not deal with conventional commercial banks on a religious basis. They regard commercial banks as unethical institutions…*". Another study found that Islamic banking offers more expensive contracts due to Shariah compliance requirements compared to conventional banking (di Mauro et al., 2013).

World Bank (2020) mentions that Islamic social finance provides financing access to entrepreneurs in Malaysia, however it should be noted here that Islamic social financing refers specifically to *Waqf* and *Zakat* which are forms of trusts and charity, respectively, and are not typically products offered by banks. The report does not test these issues empirically or compare them to conventional charity effects on entrepreneurship. Iqbal and Mirakhor (2014) also highlight the importance of charity-based Islamic financing in encouraging entrepreneurship activities.

Ledhem and Moussaoui (2021) is one of the few studies to utilize macro-economic data from Malaysia to study the effect of Islamic financing for entrepreneurship on economic growth. However, they are actually interested in the effect of entrepreneurship on economic growth, and not the previous link which is whether Islamic finance affects entrepreneurship itself. Karlan et al. (2021) use a randomized marketing experiment and estimate the effect of Shariah-compliant loan features on demand for credit in a Muslim majority country (Jordan). They show that "*Sharia-compliance increased the*

application rate for loans from 18 percent to 22 percent, an increase in demand that is equivalent to a 10 percent decrease in interest rates" Karlan et al. (2021: 1).

Given this evidence, it seems that Islamic banking has the potential to provide access to Shariah compliant financing for (Muslim) entrepreneurs, possibly negating any negative effects of Islam on entrepreneurship as suggested in previous literature.

Our study is the first to address this significant gap in the literature on the effect of Islam on entrepreneurship and business formation by including the moderating factor of Islamic banking. Even though it is important to distinguish between different aspects of religions, such as behavior versus belief, when investigating the effects of religion on business formation (Hoogendoorn et al, 2016), this does not seem to be a critical issue in our analysis since we are interested in a more externally visible aspect of religion, i.e., even a non-believing Muslim entrepreneur will be observed and possibly judged by peers and society if financing through conventional banks instead of Islamic ones. Furthermore, we also contribute to the literature on the effects of Islamic banking on entrepreneurship by departing from the limited focus on Malaysia, Indonesia and Bahrain, and expanding the sample to include all countries where Islamic banks operate.

3. Methodology and Data

According to the theoretical discussions in the literature and available evidence, we can summarize the following hypotheses which will be tested empirically:

a)   Islam as the majority or state religion —in the absence of an Islamic banking system— reduces entrepreneurship activities (since it is unable to provide financing to entrepreneurs who prefer Shariah-compliant financing).

b)   Islam as the majority or state religion —in the presence of an Islamic banking system— enhances entrepreneurship activities (since it expands access to finance for entrepreneurs who prefer Shariah-compliant financing and who would otherwise be excluded from the financial system).

To examine these hypotheses, we use the model specification (Eq. 1) in a multivariate cross-country regression analysis which captures the long-term effect of Islam on new business formation and

the moderating role of Islamic banking in stimulating business formation by increasing the financial inclusion of the religious population:

(Eq. 1)

$$Business\ Formation_i$$
$$= constant + \beta_1 \cdot Islam_i + \beta_2 \cdot Islamic\ Banking_i + \beta_3$$
$$\cdot (Islam_i \times Islamic\ Banking_i) + \beta' \cdot Controls_i + error_i$$

3.1. Dependent variable: Entrepreneurship

We measure entrepreneurship as the number of newly registered firms per 1,000 working-age people (ages 15–64). The source of the data is the World Bank's Entrepreneurship Survey and is reported in the World Development Indicators published by the World Bank (2022a). It provides a unique source of comparable, cross-country data on new business registrations. The units of measurement are private, formal sector companies under limited liability (or its equivalent). The World Bank offers two main reasons for this unit of measurement: "*First, private limited liability companies are the most prevalent business form in many economies around the world. Second, this choice reflects the focus of Doing Business on expanding opportunities for entrepreneurship: investors are encouraged to venture into business when potential losses are limited to their capital participation*" (Doing Business, 2020: 21). New businesses registered are the number of new limited liability corporations registered in the calendar year.

Elitcha (2021) and Munemo (2022) explain several features of this database which are also relevant for our own study: First, it captures "actual" entrepreneurship (versus "potential" entrepreneurship). Moreover, the emphasis in the World Bank approach is on business formation, rather than an occupational status *per se*. Secondly, the data uses official firm registry data and importantly, are non-survey data. In other words, they are objective measures rather than subjective indicators of entrepreneurship. For our study on the effect of Islamic banking and Islamic administration on business formation, one needs to investigate the effect on the actual business registrations instead of the potential intentions to start a business including nascent or aspiring entrepreneurs, which are partly covered in data available from the Global Entrepreneurship Monitor (GEM). In addition, the World Bank approach

by excluding firms that re-register (i.e., emphasis is on *new registration*) avoids overstating the rate of entrepreneurship, which is observed with GEM indicators of entrepreneurship. Finally, the World Bank measure emphasizes limited liability (incorporated) companies, which on average, are bigger in size than unincorporated firms, and thus may need more financing. It is also well-documented that smaller and newer firms are unable to obtain financing through banks based on the credit rationing theory (Bonnet et al., 2016). Therefore, the World Bank measure, which focuses on larger corporations, fits better into our study of the impact of Islamic banking on business formation.

This objective indicator of entrepreneurship is used in numerous studies (in addition to the above-mentioned studies) such as Klapper and Love (2011), Farzanegan (2014), Nica (2020), Ajide and Osinubi (2022), among others. We use the long run average of this data, covering 2006-2020. Using the average of business formation also increases the number of included countries, which may have data on a limited number of years and reduce the effect of outliers.[4]

Within our estimation sample of 69 countries, values for new business formation vary from a minimum of 0.06 (Pakistan) to the maximum of 20.8 (Cyprus). The average is 3.5 new annual registered firms per 1,000 working age population.

3.2. Independent variables of interest

Islam

We use a binary variable with the value of 1 if Islam is the state religion in the constitution and 0 otherwise (Gutmann and Voigt, 2015). It captures the influence of Islam within society and formal institutions. In our estimation sample of 69 countries, 7 countries (approximately 10% of sample) have declared Islam as a state religion in their constitutions (Bangladesh, Egypt, Iran, Jordan, Malaysia, Pakistan, and Tunisia). Alternatively, we also use the Muslim majority dummy (1 if the share of Muslim population is more than 50% and 0 otherwise) instead of Islam as state religion dummy variable. This

---

[4] As there is no within-country variation in our proxy of Islam (as state religion or Muslim majority country) and a low within-country variation in both new business formation and Islamic banking share, we decided to use their average values in our analysis. Moreover, we expect that the effect of Islam as state religion and Islamic banking should be more long-run in nature, which is captured by the average of data.

alternative variable captures the potential demand for Shariah-compliant finance in the majority of society.[5]

Islamic Banking

Islamic financing provided to entrepreneurs would optimally be measured as the exact amount of financing provided specifically to new enterprises, however this data is not available, and therefore proxies must be used.

Available indicators to capture the size of Islamic financing include the market share of Islamic banks in the respective country, the amount of Islamic banking assets, the number of Islamic bank branches, and finally, the amount of financing provided by Islamic banks. We collected data on different indicators of Islamic finance from 2013 to 2020. The source of data on these indicators is the annual reports of the Islamic Financial Services Board (IFSB).[6] Our main variable of interest is the share of Islamic banking in total banking which varies from 0 to 100%, with an average of 2.8% (and interquartile range of 0.16%). In our sample of 69 countries, countries with more than 10% share of Islamic banking are Pakistan (10%), Jordan (12.9%), Bangladesh (18.6%) and Iran (100%). Approximately 95% of countries in our sample have an Islamic banking share of 12.9% or less.

Control variables

Besides our key dependent and independent variables, we also control for a set of other drivers of new business density which are mentioned in the literature. We consider the (logarithm of) GDP per capita, (to capture market size), share of oil rents in GDP (to capture the effect of resource curse; see Farzanegan, 2014), share of credit extended to the private sector by the banking sector (as a percent of GDP), human capital index, profit tax rate, measures of quality of governance (average of control of corruption index, government effectiveness and regulatory quality) and ease of doing business index. In our general model, 41% of the cross-country variation of new business density rate can be explained by

---

[5] Not all Muslim majority countries have mentioned Islam as the state religion in their constitutions. The correlation coefficient between them in our sample is 0.64. While the direct effect of Islam measured either by state religion or Muslim majority dummy variables is negative and significant on new business density, we believe that interaction term between state religion and Islamic banking fits better in our analysis. Islam as the state religion is a stronger indicator of influence of Islam not only on the society but also on formal institutions.
[6] https://www.ifsb.org/sec03.php

our set of explanatory variables. Controlling for other drivers of new business formation, does not affect our main finding with reference to our two hypotheses. Except for our variables of Islam and Islamic banking, all other variables are obtained from the World Bank (2022a, b). We report heteroskedasticity-robust t-statistics. Summary statistics for our data can be found in Table 1.

Table 1. Summary statistics of variables, definitions and sources

Variables, definition and sources	Obs.	Mean	Std. dev.	Min	Max
New business density (new registrations per 1,000 people ages 15-64). Average numbers from 2006 to 2020. Source: World Bank (2022a) & World Bank's Entrepreneurship Database (worldbank.org/en/programs/entrepreneurship).	68	3.56	4.27	0.06	20.80
Share of Islamic Banking in total banking (%). Source: Islamic Financial Services Board (IFSB) (2021)	68	2.85	12.64	0	100
Islam as state religion, dummy variable (1, 0). Source: Gutmann and Voigt (2015).	68	0.10	0.31	0	1
Interaction term between Islamic banking & Islamic administration	68	2.56	12.66	0	100
Log of GDP per capita (PPP, real). Average 2006-2020. Source: World Bank (2022a)	68	9.83	0.89	7.37	11.35
Share of oil rents in GDP (%). Average 2006-2020. Source: World Bank (2022a)	68	2.02	4.67	0.00	25.81
Domestic credit to private sector (% of GDP). Average: 2006-2020. Source: World Bank (2022a)	68	73.97	46.99	12.95	201.87
Ease of doing business score (0 = lowest performance to 100 = best performance). Average 1996-2020. Source: World Bank (2022a)	68	70.51	10.34	42.20	87.02
Governance index. Average of control of corruption, government effectiveness and regulatory quality. Average 1996-2020. Source: World Bank (2022b)	68	0.81	2.35	-3.11	5
Profit tax (% of commercial profits). Average 2006-2020. Source: World Bank (2022a)	68	16	7.22	0.00	31.12
Human Capital Index (HCI) (scale 0-1). Source: World Bank (2022a)	68	0.65	0.12	0.35	0.87

Table 2. New business formation, Islamic state religion and Islamic banking: cross-country evidence

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)a	(12)b
	Dependent variable: Entrepreneurship (number of newly registered corporations per 1,000 working-age people)											
Islam as state religion	-2.891***	-3.311***	-1.545***	-3.488***	-2.377***	-1.241*	-1.951***	-3.179***	-0.876	-3.246**	-1.715***	-2.069***
	(-4.31)	(-4.64)	(-3.07)	(-4.44)	(-4.55)	(-1.81)	(-4.61)	(-4.06)	(-1.66)	(-2.51)	(-2.72)	(-3.48)
Islamic banking	-0.007	-0.787***	-0.569***	-0.731***	-0.471***	-0.638***	-0.393***	-0.754***	-0.496***	-0.483***	-0.470***	-0.469***
	(-1.06)	(-3.82)	(-4.32)	(-4.05)	(-3.48)	(-4.38)	(-3.63)	(-3.44)	(-3.99)	(-3.13)	(-2.73)	(-2.71)
Islam as state religion ×Islamic banking		0.787***	0.560***	0.759***	0.470***	0.642***	0.402***	0.754***	0.481***	0.515***	0.480***	0.508***
		(3.82)	(4.28)	(4.09)	(3.47)	(4.40)	(3.70)	(3.45)	(3.90)	(3.22)	(2.74)	(3.26)
Log of real GDP per capita			1.879***							-0.998	1.316**	1.326**
			(4.43)							(-0.70)	(2.62)	(2.64)
Share of oil rents in GDP				-0.137**						0.004	-0.078*	-0.076*
				(-2.34)						(0.07)	(-1.74)	(-1.68)
Share of credit to private sector in GDP					0.046***					0.039		
					(3.30)					(1.37)		
Ease of doing business index						0.181***				0.143		
						(4.56)				(1.54)		
Governance index							0.873***			0.675		
							(4.18)			(1.28)		
Local tax rate								-0.047		-0.109		
								(-0.52)		(-1.24)		
Human capital index									13.597***	-15.159		
									(3.67)	(-1.62)		
Countries	69	69	69	69	69	69	69	69	68	68	68	67
R^2	0.05	0.08	0.22	0.10	0.33	0.25	0.29	0.09	0.20	0.40	0.41	0.40

Estimation method is ordinary least squares. t-statistics in parenthesis are based on robust standard errors. [a] with regional dummies. [b] with regional dummies and excluding Iran
***,**;* refer to statistical significance at 1%, 5% and 10% levels respectively.

4. Results and discussion

Table 2 shows the results of regression estimations across 12 models. Model 1 shows the simplest version without an interaction term. We include and keep an interaction term between Islamic banking and Islam as state religion in subsequent models. Models 3 to 9 examine the robustness of the effect of the interaction term to the inclusion of other discussed drivers of entrepreneurship. Model 10 includes our main variables of interest in addition to all other control variables. Model 11 excludes statistically insignificant variables from Model 10 and adds regional dummies and thus is our parsimonious specification with highest explanatory power of new business density. In Model 12, we replicate Model 11 excluding Iran as the only country in our sample with 100% share of Islamic banking. All other countries have Islamic banking shares that are lower than 23%.

Controlling for common drivers and explanatory factors for entrepreneurship (newly registered corporations) including GDP, oil rents dependency, ease of doing business, governance etc., we find that:

- β_1 is $negative$ and $significant$

In countries where Islam is the state or majority religion, but Islamic banking share is low/non-existent, a significant negative effect is observed. According to Model 11, in countries with a complete absence of Islamic banking, Islam as a state religion is associated with 1.7 lower new firm registrations per 1,000 working-age population (equivalent to 0.4 standard deviations of new business density).[7] This supports the empirical findings of Zelekha et al (2014) regarding the negative impact of Islam on entrepreneurship.

This seems to imply that indeed, in countries where Islam plays a significant role and one can assume that a significant portion of the population adheres to Islamic laws (Shariah) that prohibit borrowing and lending on interest, and in the absence of a Shariah-approved alternative, i.e., Islamic banks, entrepreneurship is stifled given that most entrepreneurs require external funding to begin their

---

[7] In our sample, among countries with Islam as a state or majority religion, Tunisia has the lowest level of Islamic banking share at 3.8%.

businesses and have no access to financial markets at such an early stage. Rietveld & Hoogendoorn (2022) argue that religion and entrepreneurship require different sets of values, thus if entrepreneurship activities conflict with religious beliefs, a religious individual will prioritize their religious beliefs and abort their entrepreneurship activity.

This is supported by Hassan & Hippler (2014) and Martzanis (2016) who argue that Muslim entrepreneurs exclude themselves from financing if it is not Shariah-compliant. Kumru & Sarntisart (2016) also find empirical evidence that Muslims avoid using conventional banks. Furthermore, Kumru & Sarntisart (2016) show that Muslims will only deposit their savings in an Islamic banking system. They further go on to show that this exclusion of deposits, which is not made available to the banking sector in the absence of Islamic banks, hinders economic growth.

- β_2 is $negative$ and $significant$

In countries where Islamic banking share is high, but Islam is not the state or majority religion, a significant negative effect is observed. According to Model 11, which explains more than 40% of cross-country variation of the dependent variable, in the absence of Islam as a state religion, one-standard deviation increase in the share of Islamic banking to total banking (i.e. 12.64%) is associated with a decline of entrepreneurship by 5.9 (1.4 standard deviations).

This can be explained by the fact that Islamic banks adhere to Islamic laws and thus must conduct sufficient Shariah-screening of projects and investments in addition to commonly conducted financial due diligence. This results in higher costs and consequently, requires a higher return on capital (Beck et al, 2000). This is supported by Kammer et al.'s (2015) findings that Islamic financial products are more expensive in the absence of a policy and tax framework that supports Islamic banking (Kammer et al, 2015). This results in Islamic financing being more expensive for entrepreneurs, who in the absence of a religious incentive (the assumption here is that no Muslim majority exists) would opt for a (cheaper) loan from a conventional bank instead. This result suggests that the profit-and-loss/risk sharing advantage of Islamic banking is not enough to compensate its higher costs for entrepreneurs who do not adhere to Shariah rulings. While for the minority of entrepreneurs who do adhere to Shariah rulings,

they will simply opt out of forming a business instead of engaging in an expensive financing product from an Islamic bank.

This seems to be in line with Nguyen & Canh (2021)'s findings in a sample of Vietnamese small businesses. They find that financing depends on the entrepreneurs' perceptions to belonging to minority and as a result feeling inferior (as well as other factors including the availability of formal and informal financing). In such cases, entrepreneurs rely on internal/own funding and avoid external financing. Based on this finding, it can be suggested that in countries where Muslims are a minority, Muslim entrepreneurs will tend to avoid external financing to form businesses even if Islamic banks exist. Thus, not only is religious adherence limiting financial inclusion by excluding conventional banks as a source of financing for this religious minority, but perceptions of belonging to a minority can also affect financial inclusion.

Furthermore, this implies that funds saved in Islamic banks (within countries where Islam is not the state or majority religion) are often neither used for lending to entrepreneurs, nor are they made available to conventional banks, thus reducing the investment-effect of these savings in the economy. Instead, these Islamic banks prefer using mark-up-based contracts as opposed to profit-and-loss sharing-based contracts since the former are less risky (Khan, 1995; Siddiqui, 2008; Miah & Suzuki, 2020; Liu & Chang, 2021). However, these alternative contracts do little to directly help new business formation.

- β_3 is $positive$ and $significant$

The interaction term between Islam as a state or majority religion and Islamic banking is robust with a positive and statistically significant effect in all models, regardless of the control variables used. This implies that in countries where Islam is the state or majority religion and Islamic banking share is high, a significant positive effect on new business formation is observed. This shows that the findings by Zelekha et al (2014) were lacking the control for Islamic banks, i.e., institutions that cater for religiously-conforming financing in countries with a Muslim majority. This is most important with Islam since it remains one of the few religions that still applies interest (and usury) prohibitions – even though these may also exist in other religions. Thus, it is of utmost importance that the presence of Islamic banks be controlled for when investigating the effects of Islam on entrepreneurship.

Figure 3 shows the final effect of Islam as a state religion on new business formation at different levels of Islamic banking. When Islam is declared as a state religion, a low share of Islamic banking hinders new business formation while the effect becomes positive and statistically significant at higher levels of Islamic banking in the overall financial system. In other words, bringing in Islamic banks allows Shariah-adhering entrepreneurs to be on equal footing with conventional entrepreneurs, negating any adverse effect on new business formation arising from Shariah restrictions. Our findings from Figure 3 put the critical value at around 6%, i.e., having an Islamic banking sector above 6% of the total banking sector (in the presence of supporting administrative frameworks) brings about positive effects on business formation in the respective country.
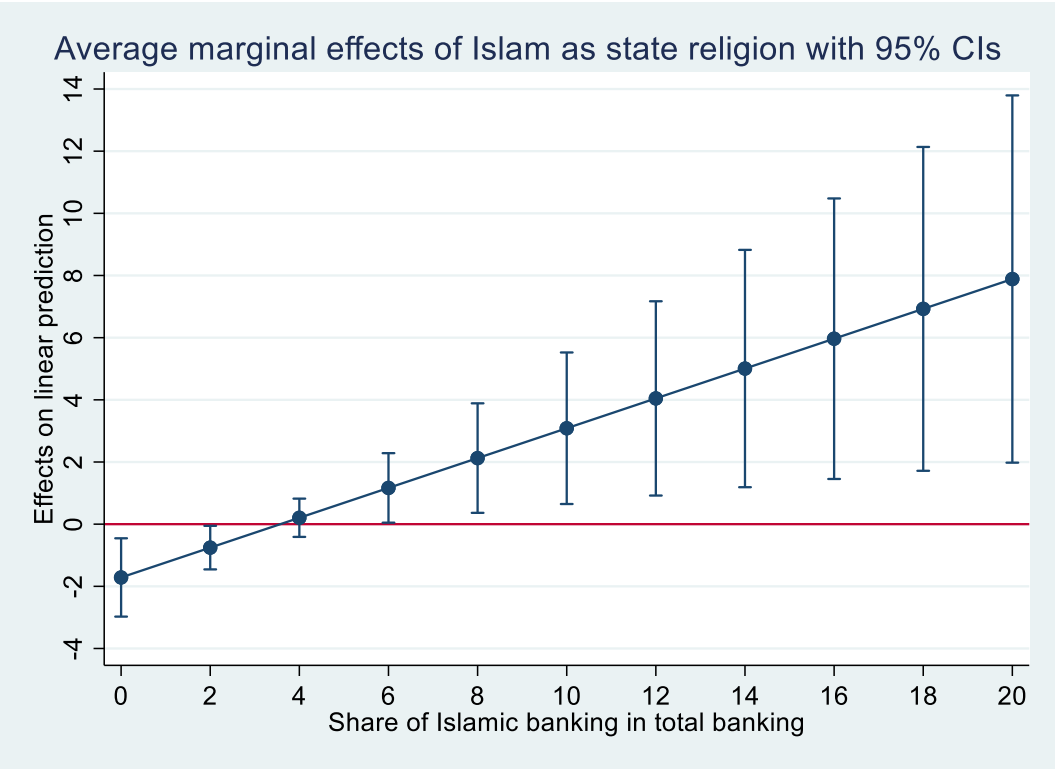

Figure 3. The marginal effect of Islamic as state religion at different levels of Islamic banking on new business formation. Note: calculations are based on Model 11 in Table 2.

This finding is quite interesting since it shows that the negative effect of Islam as a state or majority religion on entrepreneurship (observed in β_1 and confirmed in Zelekha et al's (2014) findings) disappears (and in fact becomes positive) when the Islamic banking share is high. This suggests that the previously emphasized disadvantage of Islamic banking products, namely their higher operational costs, are no longer sufficient to deter entrepreneurs from seeking financing. This can be explained in several

ways. First, one can argue that the "minority effect" proposed by Nguyen & Canh (2021) (and referred to in the interpretation of β_2) no longer applies since Islam is a majority religion in this case. Second, the expected negative social and peer pressure effects of seeking cheaper conventional financing are significant enough to warrant financing through Islamic banks, even if these are more expensive. Third, the higher operational costs are now partly covered by the presence of religiously motivated support of political and administrative frameworks, making Shariah-compliant financials services more attractive for the Muslim population and increasing the willingness to use such financial resources for new business formation.

This fits nicely with the suggestions of the literature that for a country with an Islamic supporting administration (or Muslim majority population), even though profit-sharing products are riskier and possibly more expensive per se, an Islamic supporting administration is able to manage these risks and dilute their effects. The Islamic-religious orientation can increase the acceptance of higher prices by entrepreneurs who, in the absence of Shariah-compliant financing, would choose not to form new businesses. Since these entrepreneurs value Shariah compliance, they would be willing to incur additional costs for profit-sharing contracts which are now available through the growing Islamic banking sector.

Furthermore, the Islamic-religious orientation of the population can be institutionalized through financial system regulations, tax code, direct government actions, subsidy allocation, development of an Islamic money market, centralized Shariah due-diligence boards and standards and the encouragement of Shariah-compliant insurance schemes. Such supporting structures help dilute and diversify the risk inherent in profit-sharing contracts, making them more attractive to entrepreneurs. This is supported by many studies in the literature as we show below.

Standardizing and centralizing Shariah compliance

Proponents of Islamic banking argue that the higher due diligence costs incurred to achieve Shariah compliance should be compared to the costs incurred to ensure the standards of "Green-Assets", or Environmental, Social, and Governance (ESG). The only difference is that the due diligence for ESG companies is conducted by independent rating and monitoring agencies. They argue that Shariah

standards provide an overall positive impact on society by ensuring financing only to those investments that have a productive impact on the economy and society. Given that politicians and investors accept that ESG-compliant investments can be more expensive (or less profitable), yet remain worthy of investment, or in fact, worthy of special regulations, tax codes, and possibly subsidies, then Islamic banking products may warrant a similar treatment.

Standardizing Shariah compliance – such as forming centralized Shariah compliance boards – not only decreases costs since individual banks no longer need to operate their own compliance board, but will also ensure a wider range of available products. Berg et al. (2016) highlight the effects of the lack of Shariah standardization on the availability of financial products for pious Muslims, with varied and stricter Shariah standards leading to a more limited investment universe. Abd Razak (2018) highlights the need for centralized Shariah supervisory boards which reduce costs for individual Islamic banks and increases standardization in products. Such centralized Shariah boards already exist in Malaysia, Bahrain and Bangladesh (Alam et al, 2020) – countries with significant Islamic banking share and support administration for Islamic banks.

Economies of scale of a large Islamic banking sector

Ibrahim & Rizvi (2017) show evidence that Islamic banks are more stable and exhibit scale economies, which help them become more effective, only when they are large enough or exist within a large enough Islamic banking sector. Including Islamic and conventional banks within the same banking system would increase banking competition (decrease financial integration), which, according to Calabrese et al, (2021) if optimized, can be very helpful for small business access to financing. Abedifar et al (2016) also find evidence that a so-called "dual-banking system", where both Islamic and conventional banks exist, has positive effects on financial intermediation and the overall economic welfare in a sample of predominantly Muslim countries.

Islamic Interbank Money Market

An Islamic interbank money market is crucial for the efficient operation of the banking industry. It allows Islamic banks to "*cover their exposure (in case of deficit) and make placement on short-term basis (in case of surplus)*" (Saiti et al, 2016). However, these crucial money markets only exist in a few

countries because they require a large number of participating Islamic banks to function and make it worth issuing the required legislation and regulatory framework. For this reason, no such interbank Islamic money markets exist in countries with a small share of Islamic banking of the banking industry. The largest Islamic interbank money market existing in Malaysia.

Subsidies and bailouts

Notably, the Islamic Bank of Britain – at the time the UK's only standalone Shariah-compliant retail bank, required a large bailout from its founding shareholder, the Qatar International Islamic Bank[8]. Eventually, the bank was acquired by the Qatari Masraf Al Rayan, forming the "Al Rayan Bank".

5. Sensitivity check: Omitted unobservable variables

We interpreted the above results as an indicator for the robust association between the joint effect of Islamic banking and Islamic state religion, with the number of formally registered firms per year as a proxy of entrepreneurial activity across countries. In the following section, we aim to investigate the impact of likely omitted unobservable variables and evidence in favor of a causal relationship. The risk of omitted variables is often discussed as a barrier for establishing causal relationships especially in cross-country framework.

We follow the approach suggested by Cinelli and Hazlett (2020) and Cinelli et al. (2020) to examine the minimum strength of association that an unobserved confounder should have to significantly change the effect of our main variable of interest (the interaction term).

The main idea of the test introduced by Cinelli and Hazlett (2020) and Cinelli et al. (2020) in our context is that the GDP per capita (as a measure of economic development and market size which is also associated with other key indicators such as education, governance, etc.) is a critical variable in explaining cross-country variation in entrepreneurial activity. Thus, we estimate how much stronger the omitted variables need to be than our benchmark variable (GDP per capita) to turn our main relationship between entrepreneurial activity and the joint effect of Islamic banking and Islamic state religion to zero

---

[8] See https://www.thebusinessdesk.com/westmidlands/news/53743-islamic-bank-looks-to-move-on-after-20m-bail-out, https://www.thebusinessdesk.com/westmidlands/news/67316-islamic-bank-of-britain-s-losses-continue-depite-qatari-bailout and https://www.alrayan.com/english/news-and-press-releases/masraf-al-rayan-completes-the-acquisition-of-islamic-bank-of-britain

and insignificant. Our assumption in this exercise is that that omitted confounding variables cannot explain the cross-country variation of business formation more than GDP per capita, as the latter is shown to be a positive and robust driver of entrepreneurial activity. Therefore, GDP per capita is a strong candidate for setting the maximum strength needed for the omitted confounders to change our key findings.

After the methods of Cinelli and Hazlett (2020) and Cinelli et al. (2020), the first part of our sensitivity check results in (a) the partial R^2 of the treatment with the outcome, and (b) the robustness value (RV), for where the point estimate of our main variable of interest (interaction term) would cross zero. We also provide plausible bounds on the strength of confounders. We observe that the RV of the treatment variable (share of Islamic banking interacted with Islam as state religion) coefficient is 11.25%. This figure suggests that the unobserved confounders that explain at least 11.25% of the residual variance in both the treatment (interaction term) and the dependent (new business formation) variables would remove the estimated treatment effect of the interaction term. In other words, any confounding variable that explains less than 11.25% of the residual variance in the treatment and the dependent variables would not be strong enough to eliminate the effect of the interaction term. In an extreme scenario, if omitted confounding variables explained 100% of residual variance of the dependent variable, they would need to explain at least 1.40% of the residual variance of the treatment to bring the estimated impact to zero. The next part of our sensitivity investigation aims to examine the plausibility of such confounders in altering our key results with reference to the joint effect of Islamic banking and Islamic state religion. In Table 3 below, we also show the strength of association that a confounder as strong as the interaction term would have: $R^2_{Y \sim Z|D,X} = 6.32\%$ and $R^2_{D \sim Z|X} = 1\%$. As the RV in Table 3 is larger than both quantities mentioned, it strongly shows that such an omitted confounder could not fully remove the point estimate of the interaction effect. Moreover, as the bound for $R^2_{D \sim Z|X}$ (1%) is less than $R^2_{Y \sim D|X}$ (1.40%) a "worst case confounder" scenario, which may explain the remaining

variance of the dependent variable and is strongly related to the treatment (interaction term) as GDP per capita, would not remove the estimated effect either.[9]

Table 3. Proposed minimal reporting on sensitivity to unobserved confounders

	Outcome: Entrepreneurship (number of newly registered corporations per 1,000 working-age people)		
Treatment	Est.	$R^2_{Y \sim D|X}$	RV
Interaction term (Islamic banking and Islamic state)_	0.4801	1.40%	11.25%

Note: df= 58, Bound (Z as strong as log of GDP per capita): R2Y ~Z|D,X = 6.3%, R^2D~Z|X = 1%.

Finally, in Figure 4 we show a sensitivity analysis under extreme scenarios. In this case, we have an extreme assumption that the omitted confounding variable explains the entire residual variance in the outcome of new firm registration. We present three curves in Figure 4 with confounding variables that explain 100%, 75%, and 50% of the residual variance of the dependent variable. If we set $R^2_{Y \sim Z|D, X}$ to one or another conservative value, how strongly would such a confounder need to be related to the treatment to significantly change our findings?

In the most extreme scenario ($R^2_{Y \sim Z|D,X} = 100\%$), omitted confounding variables would need to be about as strongly associated with the treatment as the log of GDP per capita to completely remove the joint effect of the interaction term since the original OLS coefficient is 0.48 (tick mark) and the estimate meets the zero line at approximately 0.01. In the second scenario ($R^2_{Y \sim Z|D,X} = 75\%$), the omitted confounding variables would need to be almost 2 times (around 0.02) as strongly related to the treatment variable as the log of GDP per capita to completely eliminate the point estimate of the interaction term. In the third scenario ($R^2_{Y \sim Z|D,X} = 50\%$), the omitted confounding variables would likely need to be 3 times as strongly associated with the treatment variable as the log of GDP per capita to fully remove the point estimate.

Our results in this section show that omitted variables should be stronger than the important benchmark variable (log of GDP per capita) to eliminate the combined effect of Islamic banking and

---

[9] Note that the discussed sensitivity test does not allow to control for clustered standard errors which is needed in this cross-country estimation. Therefore, we only discuss the robustness of economic significance of estimated effect of the interaction term under different scenarios of confounding omitted variables.

Islamic state religion. It is unlikely that our main estimation results are totally driven by unobserved confounders or are significantly biased by them.
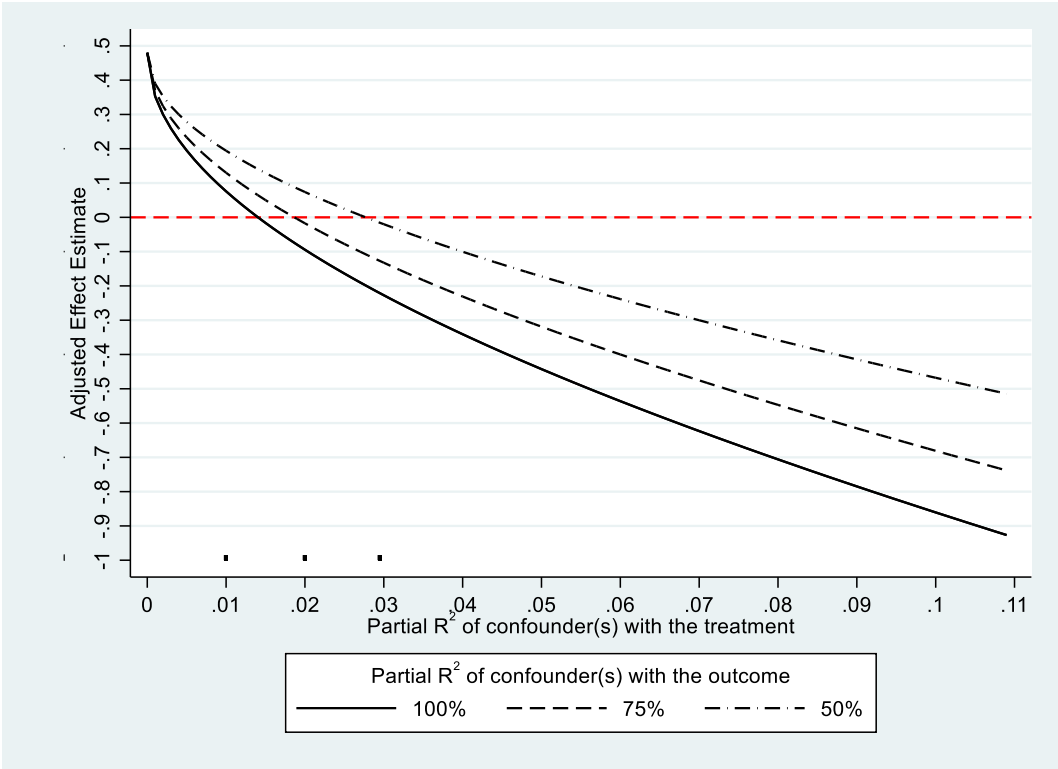

Figure 4. Sensitivity analysis to extreme scenarios

6. Conclusion

Theoretical and empirical evidence show a negative relationship does indeed exist between Islam and entrepreneurship. However, both arguments seem to have missed an important aspect, namely that Islamic law prohibitions that hinder business establishment and access to finance can be addressed by providing Shariah-compliant alternatives. It was therefore the objective of this research to re-examine the hypothesis that a negative relationship exists between Islam and entrepreneurship by considering that the effect may only be conditional on the absence of Shariah-compliant financing products provided by Islamic banks. We thus contributed by considering an important and ignored moderating factor: Islamic banking.

Our cross-country findings confirm—at first—that a negative relationship does exist between Islam and entrepreneurship in countries where Islamic banking is not present. However, this relationship does not hold when Islamic banking is present. We find that the presence of Islamic banking in countries

with Islam as a state or majority religion nullifies any negative effects of Islam and brings about positive effects on business formation in the respective country. We were able to quantify that this effect begins when the share of Islamic banking in the banking sector exceeds 6%. We therefore conclude that it is the lack of Shariah-conforming financial products, and not the religion itself, that stifles entrepreneurship. Consequently, we contribute to the debate on whether Islam as a religion discourages competition and economic development when compared to other religions, as suggested in some of the literature. Furthermore, our findings show that previous empirical research investigating the effect of Islam on entrepreneurship should be revised to control for the presence of Islamic banks, since these have a significant moderating effect on Shariah-conforming entrepreneurs' access to finance.

References

Abd Razak, A. H. (2018). Centralisation of corporate governance framework for Islamic financial institutions. Is it a worthy cause? ISRA International Journal of Islamic Finance, Vol. 10, No. 1, pp. 36-51.

Abedifar, P.; Hasan, I. & Tarazi, A. (2016). Finance-growth nexus and dual-banking systems: Relative importance of Islamic banks. Journal of Economic Behavior & Organization, Vol. 132 Supplement, pp. 198-215.

Ajide, F.M., & Osinubi, T.T. (2022). Foreign aid and entrepreneurship in Africa: the role of remittances and institutional quality. Economic Change and Restructuring, Vol 55, pp.193–224.

Alam, M. K., Tabash, M. I., Thakur, O. A., Sahabuddin, M., Hosen, S. & Hassan, M. F. (2020). A central shariah regulatory authority for the Islamic banks in Bangladesh: Legalization or formation. Journal of Asian Finance, Economics and Business, Vol. 7, No. 1, pp. 91-100.

Ali, S. N., Oseni, S. N. & Nisar, S. (2014). Islamic Finance and Development. Harvard Law School – Islamic Finance Project, Cambridge, MA.

Arslan, M. (2001). The work ethic values of protestant British, Catholic Irish and Muslim Turkish managers. Journal of Business Ethics, 31(4), 321–339.

Awang, M. D., Noor, M. N. A. M., Muhammad, J., Abdullah, A., Rahman, S. & Yahya, M. H. (2016). Acceptance and application of Islamic financial planning among small and medium enterprises halal operator in peninsular of Malaysia. International E-Journal of Advances in Social Sciences, Vol. 2, pp. 747-752.

Barajas, A., S. Ben Naceur, and A. Massara. (2015). Is Islamic Banking a Possible Avenue for Increasing Financial Inclusion? IMF Working Paper No. 15/31, International Monetary Fund, Washington, DC.

Barajas, A., Chami R., and Yousefi, S. R. (2013). The Finance-Growth Nexus Re-examined: Do All Countries Benefit Equally? IMF Working Paper 13/130, International Monetary Fund, Washington, DC.

Beck, T., Levine, R., Loyaza, N. (2000). Finance and the sources of growth. Journal of Financial Economics, Vol. 58, pp. 261-300.

Berg, N., El-Komi, M. and Kim, J. (2016). Market segmentation and non-uniform Shariah standards in Islamic finance. Journal of Economic Behavior & Organization Vol. 132, Supplement, pp. 39-49.

Blair, J. P., & Carroll, M. C. (2008). Local economic development: analysis, practices, and globalization. Sage.

Bonnet, J., Cieply, S., & Dejardin, M. (2016). Credit rationing or overlending? An exploration into financing imperfection. Applied Economics, Vol. 48, No. 57, pp. 5563-5580.

Calabrese, R.; Girardone, C. & Sclip, A. (2021). Financial fragmentation and SMEs' access to finance. Small Business Economics, Vol. 57, pp. 2041-2065.

Chazi, A., Mirzaei, A., Zantout, Z. & Sohel Azad, A. (2020). Does the size of Islamic banking matter for industry growth: international evidence, Applied Economics, Vol. 52:4, pp. 361-374.

Cinelli, C., Ferwerda, J., & Hazlett, C. (2020). sensemakr: Sensitivity Analysis Tools for OLS. Mimeo.

Cinelli, C., & Hazlett, C. (2020). Making sense of sensitivity: extending omitted variable bias. Journal of the Royal Statistical Society: Series B (Statistical Methodology), 82, 39–67.

Cramer, C. (2011). Unemployment and Participation in Violence. World Development Report 2011 Background Paper, Washington DC.

Cusmano, L. (2015). OECD - New Approaches to SME and Entrepreneurship Financing: Broadening the range of Instruments. Retrieved on March 20th 2022 from https://www.oecd.org/cfe/smes/New-Approaches-SME-full-report.pdf

Decker, R., Haltiwanger, J., Jarmin, R., & Miranda, J. (2014). The role of entrepreneurship in us job creation and economic dynamism. The Journal of Economic Perspectives, Vol. 28, No. 3, pp. 3–24.

di Mauro, F. Caristi, P., Couderc, S. et al. (2013). Islamic Finance in Europe. ECB Occasional Paper No. 146, Available at SSRN: https://ssrn.com/abstract=2251204

Doing Business (2020), The World Bank: Washington, DC. https://openknowledge.worldbank.org/bitstream/handle/10986/32436/9781464814402.pdf

Elert, N., Henrekson, M., & Sanders, M. (2019). The Entrepreneurial Society: A reform strategy for the European union. Springer Open.

Elitcha, K. (2021). The moderating role of stock markets in the bank competition-entrepreneurship relationship. Small Business Economics, Vo. 56, pp. 1333-1360.

Farzanegan, M.R. (2014). Can oil-rich countries encourage entrepreneurship? Entrepreneurship & Regional Development, Vol. 26, pp. 706-725.

Ghoul, W. A. (2010). Islam and entrepreneurship. In D. Leo-Poul (Ed.), Edward Elgar: Cheltenham, UK and Northampton, MA, USA.

Gümüsay, A. A. (2015). Entrepreneurship from an Islamic Perspective. Journal of Business Ethics, Vol. 130, pp. 199-208.

Gutmann, J., & Voigt, S. (2015). The rule of law and constitutionalism in Muslim countries. Public Choice, Vol. 162, pp. 351–380.

Hassan, M. K. & Hippler, W. J. (2014). Entrepreneurship and Islam: an overview. Econ Journal Watch, Vol. 11, pp. 170-178.

Hearn, B., Piesse, J., & Strange R. (2012). Islamic finance and market segmentation: Implications for the cost of capital. International Business Review, Vol. 21, pp. 102-113.

Hoogendoorn, B., Rietveld, C. A., & van Stel, A. (2016). Belonging, believing, bonding, and behaving: The relationship between religion and business ownership at the country level. Journal of Evolutionary Economics, Vol. 26, pp. 519-550.

Huntington, S. P. (1996). The clash of civilizations and the remaking of world order. New York: Simon Schuster.

Ibrahim, M. H. & Rizvi, S. A. R. (2017). Do we need bigger Islamic banks? An assessment of bank stability. Journal of Multinational Financial Management, Vol. 40, pp. 77-91.

Iqbal, Z. (1997). Islamic Financial Systems. Finance & Development, June 1997, 42-45, Retrieved on November 18th, 2021 from https://www.imf.org/external/pubs/ft/fandd/1997/06/pdf/iqbal.pdf

Iqbal, Z. & Mirakhor, A. (2014). Financial Inclusion: The Islamic Finance Perspective. In Islamic Finance and Development by Ali et al. (Eds.), 89-108.

Islamic Financial Services Board (IFSB) (2021). Islamic Financial Services Industry Stability Report 2021. Retrieved on November 18th, 2021 from https://www.ifsb.org/download.php?id=6106&lang=English&pg=/sec03.php

Kammer, A., Norat, M., Piñón, M., Prasad, A., Towe, C. & Zeidane, Z. (2015). Islamic Finance: Opportunities, Challenges, and Policy Options. IMF Staff Discussion Note 15/05.

Karlan, D., Osman, A., & Shammout, N., (2021). Increasing financial inclusion in the Muslim world: evidence from an Islamic finance marketing experiment. The World Bank Economic Review, 35, 376–397.

Kayed, R. N. & Hassan, M. K. (2014). Finance, entrepreneurship, and economic development in Islam. Islamic Finance and Development by Ali et al. (Eds.), pp. 69-88.

Khan, T. (1995). Demand for and Supply of Mark-Up and PLS Funds in Islamic Banking: Some Alternative Explanations. Islamic Economic Studies, Vol. 3, No. 1, pp. 1-46.

Klapper, L & Love, I. (2011). The impact of the financial crisis on new firm registration. Economic Letters, Vo. 113, pp. 1-4.

Kumru, C. S. & Sarntisart, S. (2016). Banking for those unwilling to bank: Implications of Islamic banking systems. Economic Modelling, Vol. 54, pp. 1-12.

Kuran, T. (2012). The Long Divergence: How Islamic Law Held Back the Middle East. Princeton, New Jersey: Princeton University Press.

Landes, D. S. (1999). The wealth and poverty of nations: Why some are so rich and some so poor. New York: Norton.

Ledhem, M. A. & Moussaoui, W. (2021). Islamic finance for entrepreneurship activities and economic growth: a parametric and non-parametric analysis from Malaysia. PSU Research Review, in-Press, https://doi.org/10.1108/PRR-02-2021-0012

Lewis, B. (2002). What went wrong? Western impact and Middle Eastern response. New York: Oxford University Press.

Liu, W. and Chang, J. (2021). Revisiting and refining the comparison of conventional and Islamic markets' performance. Applied Economics, Vol. 53, No. 38, pp. 4371-4385.

Martzanis, C. (2016). The absorption of financial services in an Islamic environment. Journal of Economic Behavior & Organization, Vol. 132, Supplement, pp. 39-49.

Miah, M. D. and Suzuki, Y. (2020). Murabaha syndrome of Islamic banks: a paradox or product of the system? Journal of Islamic Accounting and Business Research, Vol. 11, No. 7, pp. 1363-1378.

Motta, V. (2020). Lack of access to external finance and SME labor productivity: Does project quality matter? Small Business Economics, Vol. 54, pp. 119-134.

Muhmad, S. N. & Rahim, N. (2020). Islamic financing for small medium enterprises in Malaysia: A proposed framework. International Journal of Accounting, Finance and Business, Vol. 5, pp. 143-150.

Munemo, J. (2022). Do African resource rents promote rent-seeking at the expense of entrepreneurship? Small Business Economics, Vol. 58, pp. 1647-1660.

Nabisaalu, J. K. & Bylund, P. L. (2021). Knight, financial institutions, and entrepreneurship in developing economies. Journal of Institutional Economics, Vol. 17, pp. 989-1003.

Nguyen, B. & Canh, N. P. (2021). Formal and informal financing decisions of small businesses. Small Business Economics, Vol .57, pp. 1545-1567.

Nica, M. (2021). Economic development and business creation. Economic Change and Restructuring, Vol 54, pp. 219–239.

Patel, A. (2014). Hybrid Sukuk for SMEs: financing the real economy. In Islamic Finance and Development by Ali et al. (Eds.), 169-196.

Ratten, V., Rammal, H. & Ramadani, V. (2017). Islamic Finance: An Entrepreneurial Management Perspective. In: V. Ramadani et al. (eds.) Entrepreneurship and Management in an Islamic Context, Springer International Publishing, Switzerland, 2017.

Rehan, F., Block, J. & Fisch, C. (2019). Entrepreneurship in Islamic communities: how do Islamic values and Islamic practices influence entrepreneurship intentions? Journal of Enterprising Communities: People and Places in the Global Economy, Vol. 13, pp. 557-583.

Riaz, Q., Farrukh, M., Rehman, S. U. & Ishaque, A. (2016). Religion and entrepreneurial intentions: an empirical investigation. International Journal of Advanced and Applied Sciences, Vol. 3, pp. 31-36.

Rietveld, C. A. & Hoogendoorn, B. (2022). The mediating role of values in the relationship between religion and entrepreneurship. Small Business Economics, Vol. 58, pp. 1309-1335.

Saiti, B., Hasan A., Ali, E. R. A. E. (2016). Islamic Interbank Money Market: contracts, Instruments and their Pricing. *Islamic Capital Markets*, Alam, N. and Rizvi S.A.R. (eds.), pp. 67-100. DOI: 10.1007/978-3-319-33991-7_5

Siddiqui, A. (2008). Financial contracts, risk and performance of Islamic banking. Managerial Finance, Vol. 34, No. 10, pp. 680-694.

Tawfiqi, D. N., Hamdan, A., Masfaka, M. M. & Muwafak, B. M. (2018). The role of Islamic banks in the entrepreneurial success: evidence from Bahrain. International Journal of Entrepreneurship, Vol. 22, pp. 1-22.

Thaker, M., Thaker, H., Pitchay, A., Amin, M. & Khaliq, A. (2020). Leveraging Islamic banking and finance for small businesses: exploring the conceptual and practical dimensions. Asian Development Bank Institute (ADBI) Working Paper Series No. 1156.

World Bank (2020). Malaysia Islamic Finance & Financial Inclusion. The Malaysia Development Experience Series. Retrieved on November 18, 2021 from https://openknowledge.worldbank.org/bitstream/handle/10986/34519/Malaysia-Islamic-Finance-and-Financial-Inclusion.pdf?sequence=1&isAllowed=y

World Bank (2022a). World Development Indicators, Washington DC.

World Bank (2022b). World Governance Indicators, Washington DC.

Younis, H., Dimitratos, P., & Elbanna, S. (2022). International entrepreneurial SMEs in the Muslim world. The role of religion in the GCC countries. International Business Review, Vol. 31, No. 5, DOI https://doi.org/10.1016/j.ibusrev.2022.102023

Zelekha, Y., Avnimelech, G., & Sharabi, E. (2014). Religious institutions and entrepreneurship. Small Business Economics, Vol. 42, pp. 747-767.