Structural and Legal Diversity in Islamic Banking Systems Across Islamic Countries

[1] József Varga, [2] Zoltán Sipiczki, [3]Ágnes Vaskövi, [4]Orsolya Falus*

[1] Faculty of Economics, Socio-Human Sciences and Engineering, Sapientia Hungarian University of Transylvania, RO530104 Miercurea Ciuc, Romania; Institute for Rural Development and Sustainable Economy, Hungarian University of Agriculture and Life Sciences, H-7400 Kaposvár, Hungary; Institute of Finance, Corvinus University of Budapest, H-1093 Budapest, Hungary, varga.jozsef@uni-mate.hu

[2] Institute for Rural Development and Sustainable Economy, Hungarian University of Agriculture and Life Sciences, H-7400 Kaposvár, Hungary, sipiczki.zoltan@uni-mate.hu

[3] Institute of Finance, Corvinus University of Budapest, H-1093 Budapest, Hungary, agnes.vaskovi@uni-corvinus.hu

[4] Institute of Social Sciences; University of Dunaújváros; Faculty of Law, University of Pécs, Hungary; UNEC, Women Researchers Council (BAKU), faluso@uniduna.hu

ABSTRACT: This study explores the structural and legal diversity of Islamic banking systems across selected Islamic countries. While Islamic banking is founded on shared Shariah principles – such as the prohibition of interest (riba) and the emphasis on risk-sharing – there exists substantial variation in how these principles are implemented across jurisdictions. By combining qualitative legal analysis with quantitative financial data, the research identifies key differences in regulatory frameworks, institutional structures, and financial performance. Using cluster analysis, we group countries based on selected financial ratios (e.g., capital adequacy, liquidity, profitability, and asset quality) to highlight patterns and divergences. The findings contribute to a deeper understanding of the heterogeneity within the Islamic finance landscape and provide insights for policymakers, investors, and scholars seeking to navigate or reform these systems.

1. Introduction

In the aftermath of the global financial crisis, the limitations of interest-based conventional banking have prompted increasing scholarly and policy interest in alternative financial systems grounded in ethical and risk-sharing principles. Among these, the Islamic banking system represents a distinctive paradigm, anchored in Sharia law and characterized by the prohibition of interest (riba), the emphasis on profit-and-loss sharing (PLS), and the promotion of asset-backed financial transactions. While the theoretical foundations of Islamic finance are uniform – derived from divine sources such as the Qur'an and the Hadith – its implementation across jurisdictions exhibits considerable structural and legal diversity.

This paper investigates the cross-country heterogeneity of Islamic banking systems in selected Islamic jurisdictions, explicitly focusing on regulatory frameworks, institutional arrangements, and financial performance. Drawing on the CAMELS methodology, which evaluates banks along dimensions of capital adequacy, asset quality, management, earnings, liquidity, and sensitivity to risk, the study applies cluster analysis to identify empirical patterns that differentiate national systems. By doing so, the paper contributes to an emerging body of literature that seeks to disentangle the interplay between religiously grounded financial norms and their operationalization in diverse legal and economic environments.

In light of the European Union's legal commitments to religious non-discrimination and market pluralism, understanding the functioning and variability of Islamic banking systems holds broader relevance for regulatory harmonization and financial inclusion within multi-faith societies. The findings offer insights for scholars of Islamic finance, policymakers, and practitioners involved in cross-border banking, financial regulation, and institutional design.

In this paper, we apply the following structure. In Chapter 2, we give a theoretical overview of the main concepts of the Islamic banking system with its philosophical and legal background. Then in Chapter 3, we describe the data used in the cluster analysis of twelve Islamic countries' banking systems. The following Chapter 4 contains the results and the discussion of the clustering. Finally, we conclude our findings in Chapter 5.

2. Theoretical Overview of the Main Concepts

The Spread of Islam and the Islamic Banking System

The global financial crisis of 2008 shifted the attention of economists from conventional financing toward alternative financial channels. In the years following the crisis, local monetary systems, as well as Eastern banking and financing models, experienced a renaissance (Varga, 2013). Since then, the Islamic banking system has continued to expand steadily. Following global trends, conventional banks in many countries have also opened up to Islamic finance, with Islamic banking windows emerging alongside fully-fledged Islamic banks. A commonly held – though often implicit – assumption in the literature is that Islamic banking systems are more stable than conventional ones due to their risk-mitigating nature (Jawadi et al., 2017). The rationale lies in the prohibition of high-risk transactions within Islamic finance. Consequently, during boom periods in banking – when loan volumes and financial placements grow, increasing systemic risk – Islamic banks refrain from such risky practices and, therefore, do not experience sharp profitability spikes. In other words, Islamic banking systems are less prone to the financial bubbles typically observed in conventional banking. As a result, they are also less affected by downturns, leading to more stable and less volatile performance.

According to data from the Islamic Financial Services Board (IFSB, 2017), the volume of Islamic financial activities grew from USD 1.4 trillion in 2015 to USD 1.5 trillion in 2016. As of the 2024 annual report (IFSB, 2024), this figure had risen to USD 3.38 trillion by 2023. As Széles (2015) pointed out, the global economic and financial crisis also affected Islamic banks, prompting G20 leaders to direct regulatory attention toward enhancing the quality of bank capital.

The significance of the Islamic banking system is twofold. First, the global Muslim population (currently estimated at around 2 billion) continues to expand rapidly. Second, during recent economic crises, Islamic banks exhibited relatively more stable performance compared to conventional banks. Understanding the Islamic banking system requires familiarity with Islam's economic and philosophical foundations (Varga et al., 2023). This publication does not attempt to provide a detailed overview of Islam as a religion (for that, see Balázs, 2009; Balázs, 2011); instead, it focuses only on the aspects directly relevant to the financial domain.

Table 1 presents a selection of key indicators relevant to evaluating the Islamic banking system. The data shows that the Islamic banking sector's total volume (USD 3.378 trillion) consists primarily of Islamic banking assets, which make up nearly 70%, and Sukuk (Islamic bonds), which account for approximately 25%.

Region (data: USD billion)	Islamic Banking Assets	Ṣukūk Outstanding	Islamic Funds Assets	Islamic Insurance Contributions	Total	Share (%)
East Asia and the Pacific (EAP)	313.83	411.25	38.13	5.75	768.96	22.76%

Europe and Central Asia (ECA)	79.70	102.02	46.24	0.61	228.57	6.77%
Gulf Cooperation Council (GCC)	1,463.91	292.96	28.16	14.64	1,799.67	53.27%
Sub-Saharan Africa (SSA)	13.36	3.20	3.50	0.01	20.07	0.59%
South Asia (SA)	83.58	19.63	5.13	0.24	108.58	3.21%
Middle East and North Africa [MENA (exc.GCC)]	417.79	6.30	0.07	2.79	426.95	12.64%
Others	0.00	14.64	11.06	0.00	25.70	0.76%
Total	**2 372.17**	**850.00**	**132.29**	**24.05**	**3,378.51**	**100.00%**
Share (%)	70.21%	25.16%	3.92%	0.71%	100.00%	

Table 1: Selected aggregated structural Islamic financial indicators: Breakdown of the global IFSI (Islamic Financial Services Industry) by sector and region (USD billion) (2023)

Source: Islamic Financial Services Board (2024), Table 1.2.1, pp. 20

The global Muslim population represents the fastest-growing demographic group in the world (see Figure 1). However, this population is geographically dispersed and does not form a homogeneous community. There are substantial differences among Muslim populations, particularly in how much they adhere to Islamic teachings. As a result, a single, unified Muslim society does not exist.
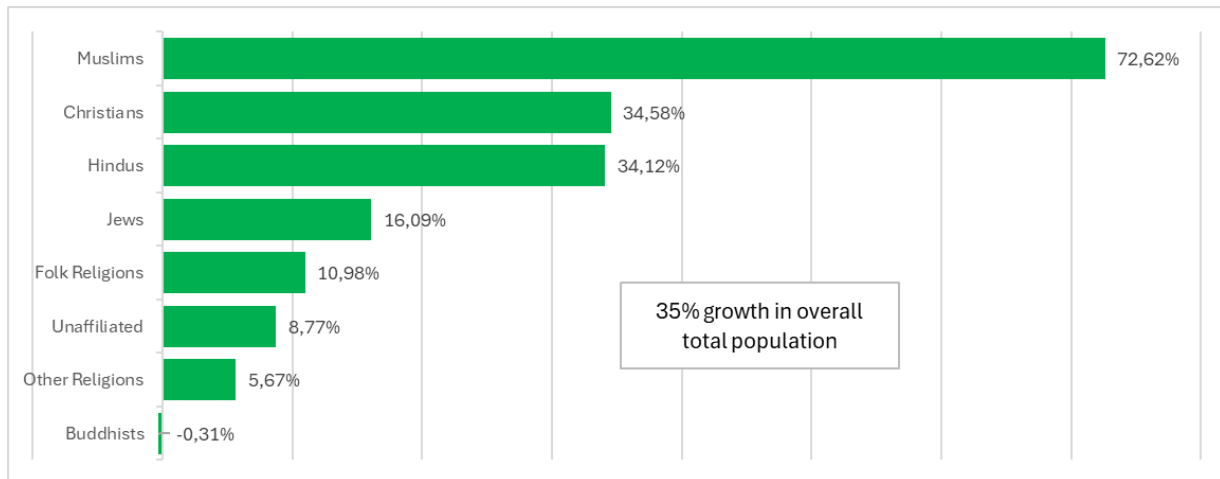

Figure 1: The Muslim population as the fastest-growing religious group (from 2010 projected to 2050)

Data source: Pew Research Center

When examining the distribution of the Muslim population across Europe, high concentrations are expected by 2020, particularly in France, Belgium, Austria, and Sweden. Significant Muslim minorities reside in Russia and across the Balkan Peninsula, including Bosnia and Herzegovina (Strüning, 2011).

The Philosophical Foundations of Wealth in Islam

When analyzing the core principles and financial transactions of Islamic banking, it is essential to consider that, just as the Islamic religion comprises various branches, financial institutions across different countries may also operate under differing interpretations. Since the Qur'an and Sharia law

originated when the concept of a modern banking system was in its infancy, interpreting these sources and comparing them with contemporary financial systems is particularly complex.

Diverging religious approaches to Islamic banking products further compound this complexity, giving rise to multiple schools of thought – especially regarding the permissibility of interest. While some interpretations only prohibit usury (lending money at interest), others view any form of interest as forbidden. As a compromise, some institutions consider charging fees under different names as acceptable and compliant with Sharia.

Islamic banking rests on two fundamental principles: profit and loss sharing (PLS transactions) and riba (interest) prohibition. The lender shares in all profits and losses incurred by the borrower. In other words, Islam encourages Muslims to invest their money and become co-owners of businesses or ventures instead of merely lending it out for interest.

According to Islamic jurisprudence, money is a tool that measures value and has no intrinsic worth. Therefore, generating money from money – such as through interest accumulation – is impermissible. Based on this principle, any form of interest is classified as riba, regardless of size. Without contributing to production, risk-taking, or development, generating profit from money alone is incompatible with Islamic teachings. In this context, money can only serve as a medium of exchange.

Islamic banks are perceived more as partners than service providers by their clients due to their more direct role in financial mediation and closer customer relationships (Széles & Széles, 2011). Their stability during financial crises further enhances their credibility. Additionally, for devout Muslims, conventional banks may not be a viable alternative for religious reasons (despite the growing availability of Sharia-compliant options). Meanwhile, for non-Muslims, Islamic banking presents a novel opportunity. The religious obligation to pay charitable tax (zakat) further reinforces their positive image.

One innovative aspect of Islamic banking is the "dual window" model. Under this system divides liabilities on the bank's balance sheet into two categories. Demand deposits are entrusted to the bank for safekeeping, with the funds always accessible to clients and not used for profit-generating activities. Thus, no returns are paid on these deposits. In contrast, investment deposits finance risk-bearing ventures, meaning they are not guaranteed repayment but are eligible for returns based on business performance.

The fundamental principles of Islamic economic regulation can be summarized as follows (Varga, 2017):

- Wealth is considered a gift from God, entrusted to humans to generate the highest possible value. Religious individuals fulfill Allah's will by maximizing welfare while considering all parties' interests. This contrasts with the self-interest-driven model of capitalist economies based on free-market competition.
- While private property is acknowledged, but subordinated to state and community ownership, property must function as productive capital to optimize national output.
- Profit is acceptable only within reasonable limits. Elevated pricing of essential goods is only justified in times of scarcity.
- Income derived from the production or trade of pork, alcoholic products, high-risk (haram) activities such as usury, gambling, black-market trading, or businesses that harm others is strictly forbidden.
- All forms of speculation are banned. This includes all forms of gambling, card games, and morally questionable financial transactions such as futures and options trading. Islamic law prohibits trading in products that cannot be physically delivered or lack underlying tangible assets.
- Usury and interest are strictly prohibited.

The philosophical and legal background of Islamic banking

Religion has always played a remarkable role in the world's affairs. It was the key feature of the first international legal community of political systems commonly recognized today, the medieval European *res publica Christiana*, as the international community of Christian peoples and states. In Europe, the

dogmas of Christianity are distinctly perceivable in the development of many of the most prominent legal concepts, past and present, such as the image of God's substance in the concept of human dignity. Islam is not a new religion, as it remains united with the Jewish and Christian religions in front of him: *"Say, `We believe in ALLAH and that which has been revealed to us, and that which was revealed to Abraham and Ishmael and Isac and Jacob and the tribes, and in that which was given to Moses and Jesus and other Prophets from their Lord. We make no distinction between them and to HIM we submit." (*Qur' an, 3:85)

"Islam", a name given by God (In Arabic: "Allah") to this religion, is an Arabic word that means obedience and peace. "Islam" is derived from the Arabic root "Salema" which means "peace, purity, submission and obedience". (https://www.alislam.org/islam/) The historical development of Islamic law is quite different from the development process of law in Europe. The common denominator for most of the differing Islamic legal traditions is the conviction that Islamic law has its roots in divine sources, namely in the Qur'an and the body of traditions of Prophet Muhammad: the *Sunna* and *Hadith*.

The voluntary sector plays an important role in Muslim societies. Islam, as a religion, lays considerable stress on pious deeds. As a way of life, however, Islam spells out the basic principles of the legal institutions of charity, such as zakah, sadaqah, and waqf, as well as to reach the well-being of the "ummah". "Ummah" is a common Arabic word meaning "nation." The term takes on religious connotations in the Qur'an, where God is said to have sent to each ummah its messenger. The messengers given special prominence as recipients of scripture and founders of an ummah are Moses, Jesus, and Muhammad. As the concept of ummah corresponds to our understanding of "nation", it does not have the same meaning. "Nation is a strictly political concept; it may be defined as a community of peoples possessing a given territory with their government, while membership in the ummah involves commitment to a particular religion. To the Muslim way of thinking, "ummah" represents a universal world order ruled by an Islamic government following the "Sharia", the Islamic religious law. The word "Sharia" literally means "the clear path to follow". (Bakar, 2014)

The Islamic economic system is egalitarian, and Islamic law seeks to maintain social balance (Al-Salami, 2024). The Islamic voluntary sector's primary function is to bring about an equitable distribution of income and wealth. It can be operated either through direct unilateral transfer from the rich to the poor or through specific aid schemes enabling the poor to be economically self-reliant (Ariff, 1991; Falus-Czukor, 2022). Based on Islamic legal principles, money is simply a means by which we measure the value of things, but it contains no worth in itself. Therefore, in the Islamic banking system, the production of money out of money – such a sin case of interest credit – is considered a prohibited thing. Religious regulations prohibit taking interest based on the prohibition of making money out of money, which, regardless of the amount of interest, is usury according to the Sharia. Based on Sharia, only *halal* (fair) businesses can be accepted (Varga, 2017).

Going further on the path of "natural law" theory, Aristotle, who believed that interest was unnatural, must be mentioned here. Aristotle, in Politics Part X., claimed that money is sterile and exists not by nature but by law: *"The most hated sort, and with the greatest reason, is usury, which makes a gain out of money itself, and not from the natural object of it. Money was intended to be used in exchange but not to increase interest. This term interest, which means the birth of money from money, is applied to breeding money because the offspring resembles the parent. This is the most unnatural of all modes of getting wealth." (*Aristotle, 1999)

It is important that in the Islamic world, the prohibition of *" riba"* (interest) is the same as in Aristotle's notion. However, in Allah's eyes, violating the rule of*" qard-el-Hassan"* (fair loan), which is loaning without interest, is already a sin. Islam proclaims that interest - the growth of money - is illogical as money is a sterile entity incapable of growth, which means it is unnatural. Anything that mocks nature cannot be right or acceptable. Interest is a central part of conventional banking. Therefore, Islamic banks have a different approach from Western banks (Varga & Cseh, 2018).

The institution of the*" fatwa"* (providing nonbinding answers to legal questions; pl: *fatawa*) has also to be mentioned as it has been central to the development of Islamic financial jurisprudence, dating back to the

time of the Prophet, whose answers to various legal questions are codified as part of the Islamic canon. In later decades, the Prophet's companions fielded questions on all aspects of Islamic law, often leading to the codification of their opinions as "consensus of the early community in Madina." During those early periods, the two institutions of the fatwa and the" *qada"* (court legal rulings) were confounded to some extent. In later periods, the two institutions became distinct, with" qadis" (state-appointed court judges) legislating through qada and" *muftis"* (canon law judges) of official or unofficial status legislating to those who accepted their opinions through the institution. In the Muslim world, a vacuum ensued in qada and official jurisprudential codification following the Ottoman Empire's fall after World War I. Consequently, the fatwa institution effectively became the only means for legislation in Islamic jurisprudence of financial transactions. In this regard, the fatwa played a central role in the birth of Islamic finance (El-Gamal, 2006). Banks' interest on deposits is a form of riba that is forbidden in the Qur'an and Sunna, as previous decisions and fatawa have concurred since the second meeting of the Islamic Research Institute in Cairo, Muharram 1385 A.H., May 1965 A.D., attended by eighty-five of the most outstanding Muslim scholars and representatives of thirty-five Islamic countries. The first decision of that conference stated: *"Interest on any type of loan is forbidden, riba."* (El-Gamal, 2006, p.32.)

Unlike conventional banking based on interest-bearing loans, funds invested in an Islamic bank are used essentially for trade. Islam has no room for ambiguity: "Every loan that draws a gain is riba." The question arises of whether Islamic finance differs meaningfully from conventional finance. Formally, many structures do bear a similarity in various respects. However, how these two types of finances function concerning core defining parameters differs because of the essential difference in their fundamental principles. Time valuation is possible only in business and goods trade, not in exchange for monetary values, loans, or debts. Therefore, no time value can be added to the principal of a loan or a debt after it is created or the liability of the purchaser stipulated. The important spectacle in Islam is that the time value of money is acceptable concerning the pricing of assets and their usufruct; it is not acceptable about any addition to the principal of loans or debts. The valuation of credit periods based on the value of goods or their usufruct is different from the conventional concepts of "opportunity cost" or "time value" (Ayub, 2007). Thus, the time value of money in the Islamic view represents the advantages to the economy and society, which fulfill human needs directly. The time valuation of money in Islamic principle differs from the conventional theory as money and commodities have different characteristics, i.e., money has no intrinsic value, but it is only a unit of value or medium of exchange, so it is unable to fulfill the human needs by itself unless converting to the commodity. Thus, the commodities can fulfill human needs. Interest is charged even if the organization suffers losses using bank funds. Therefore, it is not based on profit and loss sharing. Islamic banks operate based on profit and loss sharing. If the businessperson suffers losses, the bank will share these losses based on the mode of finance used (*Mudharaba, Musharakah*). While disbursing cash finance, running finance, or working capital finance, no agreement is made for exchanging goods and services. The execution of agreements for exchanging goods and services is necessary while disbursing funds under *Murabaha*, *Salam*, and *Istisnaa* contracts.

Conventional banks use money as a commodity, which leads to inflation. Islamic banking, however, tends to create links with the real sectors of the economic system by using trade-related activities. Since money is linked with real assets, it contributes directly to economic development. Also, commodities are transacted or sold by pinpointing the commodity in question or at least by giving certain specifications. Since a commodity is known to possess an intrinsic value and quality, the owner can sell it at whatever price the buyer and himself mutually agree on, provided the seller does not commit fraud but is subjected to the forces of demand and supply. This would hold even if the price mutually agreed upon is higher than the prevailing market price (Nurrachmi et al., 2014). The Islamic view is based on the concept of the real price of the commodity, and usufruct can fulfill the needs of humans because it is according to the real situation in practice. Therefore, it encourages people to work and trade. This leads to improvement and enhances the ability to compete. Moreover, these economic activities increase the level of real productivity of the system and develop the national economy to achieve a high level of economic growth and a standard of living. Furthermore, it leads to stability in the country's economy because when all economic activities are mainly from the real sector, it prevents the effect of fluctuation and recession that

originates from greed and speculation. It also reduces the socioeconomic problems when applying the conventional time value of money to the system, such as the system's collapse, the default of loan payments, economic crises, and injustice (Nurrachmi et al., 2014).

The European Union is a legal order based upon approximating Member States' legal systems to pursue its objectives, as laid down in the Treaties and clarified by the jurisprudence of the Court of Justice. Therefore, any attempt to accommodate Sharia rules within the European framework must be based upon articles 2 and 3 of the Treaty on the European Union (hereafter, TEU).

Art. 2 (TEU) establishes that:

"The Union is founded on the values of respect for human dignity, freedom, democracy, equality, the rule of law, and respect for human rights, including the rights of persons belonging to minorities. These values are common to the Member States in a society in which pluralism, non-discrimination, tolerance, justice, solidarity and equality between women and men prevail." (p.17.)

Among the EU's objectives, art. 3, §3. TEU provides for combatting discrimination and social exclusion, as well as establishing an internal market, defined as an area without internal frontiers in which the provisions of the Treaties ensure the free movement of goods, persons, services, and capital.

The effective operation of the internal market and the construction of the European Union as a pluralistic and inclusive society also depend on the correct application of the principle of non-discrimination on the grounds of religion or beliefs, as laid down in articles 10 and 19 (point 1) of The Treaty on the Functioning of the EU (hereinafter TFEU), framing the Sharia accommodation process in the EU-based framework for banking contracts:

"In defining and implementing its policies and activities, the Union shall aim to combat discrimination based on sex, racial or ethnic origin, religion or belief, disability, age or sexual orientation."/Article 10/ (TFEU)

"1. Without prejudice to the other provisions of the Treaties and within the limits of the powers conferred by them upon the Union, the Council, acting unanimously by a special legislative procedure and after obtaining the consent of the European Parliament, may take appropriate action to combat discrimination based on sex, racial or ethnic origin, religion or belief, disability, age or sexual orientation." /Article 19 (ex Article 13 TEC)/ (TFEU)

According to the principle of direct effect of European law rules, any individual is entitled to invoke a European provision before a national or European court to ensure the application and effectiveness of EU law throughout the Member States. Given that Islamic banking is directly based on Sharia law, all Muslim believers have the right to use such banking services. Of course, there is no obstacle to non-Muslims opting for these instead of conventional financial services.

In the European legal framework, there is a general definition of "consumer" and "entrepreneur", but article 2 of the Consumer Directive (Directive 2011/83/EU) in force provides that a "consumer" is a «natural person who, in contracts covered by this Directive, is acting for purposes which are outside his trade, business, craft or profession», while a "trader" is «any natural person or any legal person, irrespective of whether privately or publicly owned, who is acting, including through any other person acting in his name or on his behalf, for purposes relating to his trade, business, craft or profession about contracts covered by this Directive:

"(1)

'consumer' means any natural person who, in contracts covered by this Directive, is acting for purposes that are outside his trade, business, craft, or profession;

(2)

'trader' means any natural person or any legal person, irrespective of whether privately or publicly owned, who is acting, including through any other person acting in his name or on his behalf, for purposes relating to his trade, business, craft, or profession about contracts covered by this Directive."

On the opposite side of the contract, there is a bank. According to the European legal framework for credit institutions, these are legal entities with their head office and central administration in the same Member State, authorized to operate a banking business, or the Sharia-compliant credit institution may be a branch of a third-country bank (Gimigliano, 2019). The status of a legal person might raise some doubts according to classical Islamic law, which only provides for partnerships rather than limited liability companies. If a conventional bank is authorized to provide, among other things, Sharia-compliant products and services, it is supposed to set up an Islamic window, namely, a business line financially separate from the rest. However, it might also be an Islamic credit institution based within the European Union, either a branch of a third-country Sharia-compliant bank or an EU-based Islamic bank. In the latter case, it is a legal entity authorized to carry on banking business by the European banking framework, with its head office and central administration in a Member State.

3. Data and Methodology

Although Islamic banking systems are based on shared principles – such as the prohibition of interest (riba), Sharia-compliant products, and the principle of risk sharing – in practice, significant differences exist in the legal regulations and institutional operations across countries. This research uses cluster analysis to group countries based on financial indicators such as capital adequacy, liquidity, profitability, and asset quality.

Although Islamic banking systems are based on shared principles – such as the prohibition of interest (riba), Sharia-compliant products, and the principle of risk sharing – in practice, significant differences exist in the legal regulations and institutional operations across countries. This research uses cluster analysis to group countries based on financial indicators such as capital adequacy, liquidity, profitability, and asset quality.

Selecting the most representative indicators of a specific bank's performance can often be challenging in banking practice. The most commonly used method in academic literature is CAMELS analysis[1]. The CAMELS evaluation method was introduced in 1979 as a working tool of the U.S. banking supervisory system. In the United States, five supervisory authorities oversee banks, among which the following apply the CAMELS assessment method: the Federal Reserve, Office of the Comptroller of the Currency, National Credit Union Administration, and Federal Deposit Insurance Corporation (FDIC) (Szemán, 2015).

The data used in this study were sourced from the Prudential and Structural Islamic Financial Indicators (PSIFIs) database, created by the Islamic Financial Services Board (IFSB). This database is one of the most reliable, standardized, and internationally comparable sources for analyzing the Islamic financial sector.

The data are collected by the regulatory authorities overseeing each country's Islamic banks, including standalone Islamic banks and Islamic counters within conventional banks. Data collection occurs quarterly, although countries have flexible submission frequency depending on local data availability. All data are publicly available at https://psifi.ifsb.org, which served as the primary source of this research.

The IFSB publishes numerous financial indicators for countries with Islamic banking systems, supporting macroprudential assessment and international comparability. However, time series in the database are often incomplete or vary in frequency, making methodological data cleaning necessary before analysis to ensure coherent sampling.

This study used data from 2023, with complete, consistent data sets available for the following twelve countries: Egypt, Indonesia, Jordan, Kuwait, Malaysia, Nigeria, Oman, Pakistan, Qatar, Saudi Arabia, Turkey, and the United Arab Emirates. These countries provided reliable data for selected indicators, which can be grouped according to the widely applied CAMELS framework in the international literature. The CAMELS classification used the following variables: See Annex 1.

This structured approach enables comparison and classification of the banking sectors of different

---

[1] CAMELS: Capital adequacy, Asset quality, Management quality, Earnings, Liquidity, Sensitivity to risks

countries using cluster analysis, laying the groundwork for further empirical research.

To explore the underlying structure of the dataset and identify potential groupings among the examined variables, hierarchical cluster analysis was performed using IBM SPSS Statistics. The method chosen was agglomerative hierarchical clustering with Ward's linkage and squared Euclidean distance as the similarity measure. This approach minimizes the total within-cluster variance, ensuring that the resulting clusters are as homogeneous as possible.

Before the analysis, we standardized all variables (z-scores) to eliminate scale-related distortions and ensure that each variable contributed equally to the clustering process. Standardization is critical when using distance-based methods, as it prevents variables with larger numerical ranges from dominating the clustering outcome (Murtagh & Contreras, 2012; Nielsen & Nielsen, 2016; Contreras & Murtagh, 2015).

4. Results and discussion

Based on the 2023 data, the cluster analysis of Islamic banking systems reveals that the financial indicators of national banking sectors vary significantly, reflecting differences in regulatory environments, market maturity, and institutional structures (see Annex 2).

We visually inspected the dendrogram generated during the clustering procedure to determine the optimal number of clusters. Additionally, agglomeration coefficients were analyzed to identify significant increases, which may indicate suitable cut-off points in the clustering process.

Four distinct clusters were identified based on the relevant indicators capturing the banking systems' characteristics. These clusters exhibit significant differences in capital adequacy, asset and management quality, profitability, liquidity, and risk-taking.
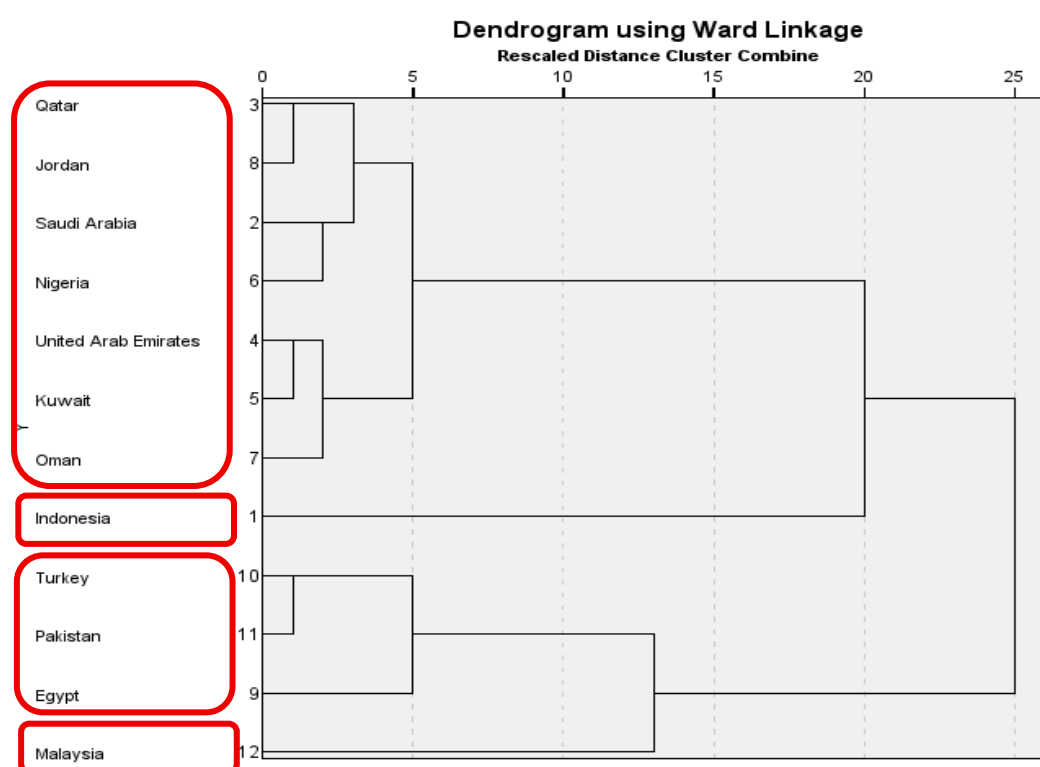

Figure 2: Dendrogram of hierarchical cluster analysis
Source: own calculation based on IFSB 2023Q1 data

To facilitate a more straightforward interpretation of the clustering results, we describe the key characteristics of each cluster using the financial indicators.

Cluster 1 – Jordan, Kuwait, Nigeria, Oman, Qatar, Saudi Arabia, United Arab Emirates

The Cautious Pillars: Capital-strong, risk-averse, efficient systems

This cluster includes mainly the Gulf countries (Kuwait, Qatar, Saudi Arabia, UAE, Oman) and a few other countries with a moderately developed Islamic financial system (Jordan, Nigeria). Capital adequacy is stable but not outstanding. This suggests that these countries have a well-regulated financial environment but do not have excessive capital requirements.

The non-performing loan ratio (NPF: 3.38%) is relatively higher, especially compared to more developed Gulf countries. This may indicate that some loan portfolios focus on riskier clients. The cost-to-income ratio is acceptable but not particularly efficient - this may indicate a lack of operational economies of scale.

Liquidity ratios are medium, suggesting that banks are moderately prepared for unexpected financial shocks but do not accumulate excessive cash reserves. However, the sensitivity to foreign exchange risks is unusually high, especially in the Gulf countries, where economies depend heavily on oil revenues and FX-based transactions.

Cluster 2 – Indonesia

The Fortress: Highly capitalized but cost-burdened system

Indonesia is a separate cluster, which suggests that the country's Islamic banking system is significantly different from that of the other countries surveyed. The capital adequacy ratios are outstanding, reflecting conservative regulatory practices and conservative supervisory requirements. The cost/income ratio is high, which could indicate serious operational inefficiencies. Profitability ratios are medium (ROA: 2.91%, ROE: 20.54%), so despite high costs, banks can generate reasonable profits. On the other hand, liquidity is very weak, which could potentially leave the banking system vulnerable to short-term shocks. Currency risk is low as Indonesian banks typically operate in local currencies.

Cluster 3 – Egypt, Turkey, Pakistan

The Agile Performers: High-return, high-liquidity systems with moderate risk

This cluster has exceptionally high profitability, partly due to high credit spreads. Islamic banks in these countries operate in a dynamic growth sector with higher interest spreads than in more developed markets.

The capital adequacy ratio is medium, which implies sufficient but not overcollateralized reserves. Liquidity levels are high, indicating that banks are cautious due to local economic instability.

External foreign currency financing is very high, which poses a risk in case of depreciation of local currencies.

Cluster 4 – Malaysia

The Under Pressure System: Weakened across capital, liquidity, profitability, and FX risk

Malaysia has one of the world's best-known and most developed Islamic financial systems, characterized by high institutional sophistication and regulatory rigor. The highly dense banking network reflects deep market penetration and an advanced financial infrastructure.

The non-performing financing ratio is very low, indicating excellent asset quality. At the same time, profitability is low, presumably due to a saturated market, intense competition, and strict regulation. The liquidity ratio is high, indicating the system's strong shock absorption capacity.

Malaysia's foreign exchange sensitivity is low, and external funding is moderate (0.95%), reflecting a strong domestic funding base. Capital adequacy is also medium here, so Malaysia can serve as a model for other countries to develop a balanced Islamic finance model.

A scatter plot (Figure 3) based on liquidity and capital adequacy clearly illustrates **Cluster 2** – ("The Fortress"). Indonesia's Islamic banking system is by far the most highly capitalized, but it has the lowest

liquidity and moderate profitability across all clusters. This configuration creates a well-defended but less agile structure – highly shielded from losses but vulnerable to short-term funding pressure.

Cluster 1: Jordan, Kuwait, Nigeria, Oman, Qatar, Saudi Arabia, and UAE ("The Cautious Pillars") demonstrate balanced capital strength and moderate liquidity, reflecting a conservative, risk-averse approach. Their systems are built for long-term stability and operational efficiency without extreme risk exposure or overextension.

Cluster 3: Egypt, Turkey, and Pakistan ("The Agile Performers") operate with moderate capital levels; this cluster stands out for its high liquidity and ROE. These systems are agile and responsive, adapting quickly to market opportunities.
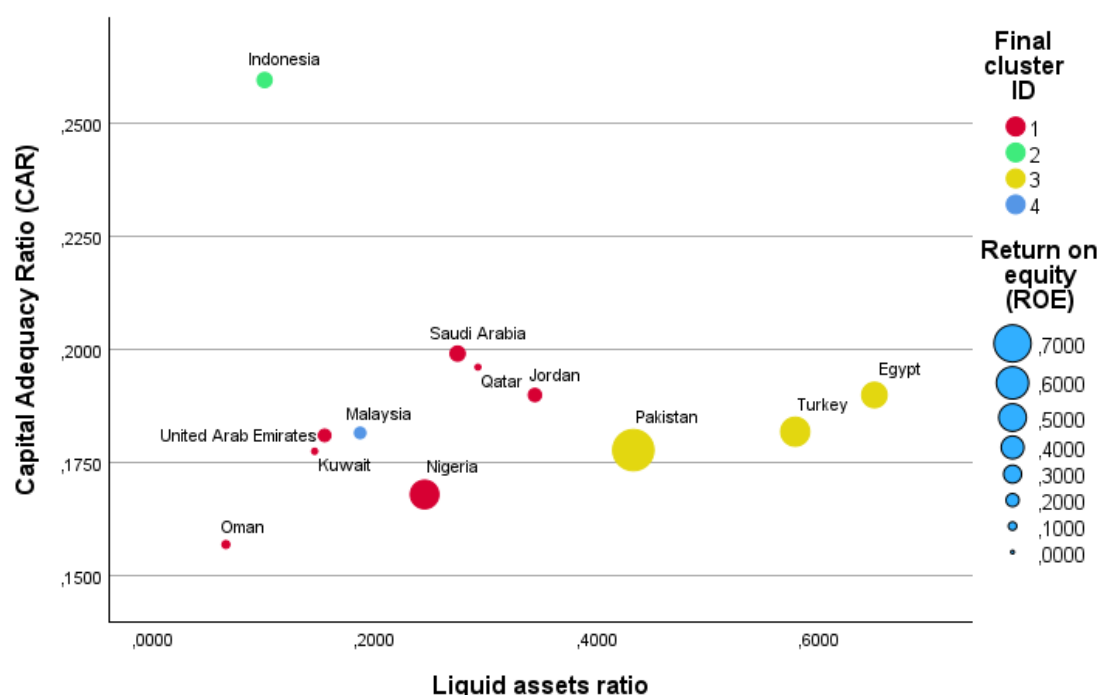

Figure 3: The magical triangle of Islamic banking sectors in the 12 analyzed countries
Source: Authors' calculation based on IFSB data

Cluster 4 – Malaysia ("The Under Pressure System") presents a unique case: while capital levels are moderate to weak, the system maintains medium to low liquidity. Combined with lower profitability, the system appears stable but under financial strain. This cluster also appears as distinct groupings on the plot, albeit with less pronounced separation. The difference is less visible in core CAMEL metrics and more associated with scale-related variables, such as the number of Islamic banks, domestic branches, and off-balance sheet activity, where Cluster 4 showed a clear advantage, potentially indicating the presence of economies of scale and deeper Islamic financial integration.

5. Conclusions

This study has reviewed the philosophical and legal background of Islamic banking, highlighting the prohibition of interest (riba) and the principle of risk-sharing, which fundamentally distinguish it from conventional banking systems. According to the strict regulations of Islamic law (Sharia), money cannot generate value on its own. Hence, interest-based lending is forbidden. In contrast, Islamic banks focus on trade-related activities where the time value of money is reflected in the value of goods and services rather than in loan interest. The study also pointed out the significance of the Islamic voluntary sector (zakah, sadaqah, waqf), promotion of social welfare, and equitable income distribution.

Regarding the compatibility with the European legal framework, the study emphasized the core values of the European Union, such as respect for human dignity, freedom, democracy, equality, and the rule of law.

Enabling the provision of Islamic banking products and services aligns with the EU's anti-discrimination principles, as every individual has the right to access financial services following their religious beliefs.

In the empirical research, we used cluster analysis to identify the distinct profiles of Islamic banking systems across countries. Based on the 2023 data-driven cluster analysis, we can group Islamic banking systems into four distinct categories that differ significantly in regulation, market maturity, and institutional structure. Each group reveals a unique strategy and positioning regarding capital strength, liquidity, risk, and efficiency.

Cluster 1 – Gulf States & Selected Others: "The Cautious Pillars" These banking systems display steady capital ratios, moderate liquidity, low-risk exposure, and sound management practices. Their conservative stance ensures long-term resilience, though at the cost of some growth potential. *Cluster 2* – Indonesia: "The Fortress" A highly capitalized system with strict regulatory buffers but hampered by low liquidity and high operational costs. *Cluster 3* – Egypt, Turkey, Pakistan: "The Agile Performers" Representing dynamic, high-liquidity, and high-profit systems, this cluster is well-positioned for performance but less protected against volatility. *Cluster 4* – Malaysia: "The Under Pressure System" Malaysia's system shows symptoms of being overstretched: strong in liquidity but weaker across capital adequacy and profitability. This paradox suggests a market under pressure, likely dealing with high competition.

In conclusion, with its unique principles based on the prohibition of interest, the Islamic banking system offers a viable alternative to conventional banking systems. Different countries' legal and institutional environment significantly influences the development and operation of Islamic banking systems. The European legal framework, in principle, allows for the integration of Islamic banking services, considering the freedom of religious belief and the prohibition of discrimination.

References

[1]   Al-Salami, O. bin A.M. (2024). The Impact of Objectives: Sharia on Achieving and Enhancing Societal Security. *Contemporary Readings in Law and Social Justice*, 16(1), pp. 183-191.

[2]   Ariff, M. (1991). The Islamic Voluntary Sector in Southeast Asia. Singapore: *Institute of Southeast Asian Studies*

[3]   Aristotle (1999). Politics. *Ontario: Batoche Books*. Kitchener, pp. 17.

[4]   Ayub, M. (2007). Understanding Islamic Finance. *England: Wiley Finance*.

[5]   Bakar, O. (2014). Islamic Civilisation and The Modern World: Thematic Essays. *Brunei Darussalam: UBD Press*, pp. 51-52.

[6]   Balázs, J. (2009). Economic Security in Islamic Societies. Professional Review. Publication of the Scientific Council of the Military Security Office, 2009/1 (in Hungarian: Gazdasági biztonság az iszlám társadalmakban. Szakmai Szemle. A Katonai Biztonsági Hivatal Tudományos Tanácsának Kiadványa)

[7]   Balázs, J. (2011). The Islamic Banking System: Lessons for the Attention of Neoliberal Financial Policy. Valóság (Reality), 2011/1. (in Hungarian: Az iszlám bankrendszer: Tanulságok a neoliberális pénzügypolitika figyelmébe)

[8]   Contreras, P., & Murtagh, F. (2015). Hierarchical clustering. Handbook of cluster analysis, 103-123.

[9]   Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011 on consumer rights, amending Council Directive 93/13/EEC and Directive 1999/44/EC of the European Parliament and of the Council and repealing Council Directive 85/577/EEC and Directive 97/7/EC of the European Parliament and of the Council (Text with EEA relevance)

[10]   El-Gamal, M. A. (2006). Islamic Finance: Law, Economics, and Practice. *New York: Cambridge University Press*, pp. 32-33.

[11]   Falus, O. – Czukor, K. (2022). Legal and economic issues of Islamic banking in the European Union In: Balázs, L.; Rajcsányi-Molnár, M.; András, I. (Eds.) *Megújuló közgazdaságtan*. Dunaújváros: DUE Press, pp. 107-118.

[12]   Gimigliano, G. (2019). Banking contracts and Sharia rules within the European Union framework. *Open Review of Management, Banking and Finance*, 02/05

[13]   Islamic Financial Services Board (2017): Islamic Financial Services Industry Stability Report

[14]   Islamic Financial Services Board (2024): Islamic Financial Services Industry Stability Report

[15]   The Islamic Financial Services Board (IFSB) data: 2025.04.05.; https://www.ifsb.org/data-metadata/

[16]   Jawadi, F., Jawadi, N., Cheffou, A-I., Ben Ameur, H., Louhichi, W. (2017): Modelling the effect of the geographical environment on Islamic banking performance: A panel quantile regression analysis, *Economic Modelling*, pp.300-306.

[17]   Murtagh, F. & Contreras, P. (2012). Algorithms for hierarchical clustering: an overview. Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery, 2(1), 86-97.

[18]   Nielsen, F. & Nielsen, F. (2016). Hierarchical clustering. Introduction to HPC with MPI for Data Science, 195-211.

[19]   Nurrachmi, R., Fathia, M., Mad-Ahdin, A., Radenarmad, N., & Akhtar, R. (2014). Time Value of Money in Islamic Perspective and the Practice in Islamic Banking Implications. MPRA Paper 46818, *University Library of Munich, Germany*.

[20]   Pew Research Center (2015). The Future of World Religions: Population Growth Projections, 2010-2050, https://www.pewresearch.org/religion/2015/04/02/religious-projections-2010-2050/

[21]   Strüning, F. (2011). Muslimische Bevölkerungsentwicklung 1990 – 2030. http://www.citizentimes.eu/2011/02/01/muslimische-bevoelkerungsentwicklung-1990-2030/

[22]   Széles, Zs. & Széles, Z. (2011). Etikusabb pénzügyek? Iszlám banki térhódítás. (More Ethical Finance? The Expansion of Islamic Banking) In: Andrássy Adél (szerk.) "Hitel, Világ, Stádium" Nemzetközi Tudományos Konferencia tanulmánykötete [Publications of the International Scientific Conference "Credit, World, Stage"]: Konferencia a Magyar Tudomány Ünnepe alkalmából. Sopron, NYME Közgazdaságtudományi Kar

[23]   Széles, Zs. (2015). Accounting directives in the Islamic Banking System. Selye E-Studies 6:(1) pp. 153-170.

[24]   Szemán, J. (2015) A magyar bankrendszer CAMELS típusú elemzése. (CAMELS Analysis of the Hungarian Banking Sector) In: Karlovitz János Tibor (szerk.) Fejlődő jogrendszer és gazdasági környezet a változó társadalomban. 394 p. Konferencia helye, ideje: Párkány, Szlovákia, 2015.04.26-2015.04.27. Komárno: International Research Institute, 2015. pp. 121-132. (ISBN:978-80-89691-21-0).

[25]   The Treaty on European Union, https://eur-lex.europa.eu/resource.html?uri=cellar:2bf140bf-a3f8-4ab2-b506-fd71826e6da6.0023.02/DOC_1&format=PDF

[26]   The Treaty on the Functioning of the European Union, https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:12012E/TXT:en:PDF

[27]   Varga, J. (2017). Az iszlám bankrendszer működése (The Functioning of the Islamic Banking System), *Polgári Szemle (Civic Review)*, Vol. 13. (No. 1-3.), pp. 295–306.

[28]   Varga, J. & Tálos, L. (2017). The Analysis of the Turkish Participation Banks in the Period of 2007-2015. *Jura* 23: (1) pp. 162-172.

[29] Varga, J. & Cseh, B. (2018). The operation of islamic banks on the basis of an EU example, *Köztes Európa: Társadalomtudományi Folyóirat: A Vikek Közleményei*. Vol. 10:1 (No. 23), pp. 125-134.

[30] Varga, J., Falus, O. & Cseh, B. (2023). Arguments Against Interest from Economic and Legal Aspects in Islam and Christianity. In: Sözen, İlyas; Gencer, Alp H. (Eds.) International Conference on Eurasian Economies. Izmir: Eurasian Economists Association, pp. 381-387.

[31] Varga, N. (2013): A Biblia és a Korán politika és gazdaságképe. (The Political and Economic Perspectives of the Bible and the Qur'an) *Exit*, Kolozsvár 2013.

Annex 1: The CAMELS classification of variables

	Group	**Measure**	**PSIFI Code**
C	Capital Adequacy	Capital Adequacy Ratio (CAR)	CP01a
		Tier 1 capital to RWA	CP02a
		Capital to assets (balance sheet definition)	CP11
A	Asset Quality	Gross nonperforming financing (NPF) ratio	CP04
		Total off-balance sheet items to total assets	AD02
M	Management Quality	Cost to income	CP10
		Number of Islamic banks	ST01
		Number of domestic branch offices	ST01_a
E	Earnings	Return on assets (ROA)	CP07
		Return on equity (ROE)	CP08
		Net profit margin	CP09
L	Liquidity	Liquid assets ratio	CP13
		Liquid assets to short-term liabilities	CP14
S	Sensitivity to risks	Foreign-currency denominated funding to total funding	AD03
		Net foreign exchange open position to capital	CP17

Source: Authors collection from https://www.ifsb.org/data-metadata/

Annex 2: Financial indicators of Islamic banking sectors (countries grouped by clusters)

Cluster ID	Countries	Descriptives	C Capital Adequacy			A Asset Quality		M Management Quality			E Earnings			L Liquidity		S Sensitivity to Risks	
			Capital Adequacy Ratio	Tier 1 capital to RWA	Capital to assets	Gross non-performing financing (NPF) ratio	Total off-balance sheet items to total assets	Cost to income	Number of Islamic banks	Number of domestic branch offices	Return on assets (ROA)	Return on equity (ROE)	Net profit margin	Liquid assets ratio	Liquid assets to short-term liabilities	Foreign-currency denominated funding to total funding	Net foreign exchange open position to capital
1	Jordan Kuwait Nigeria Oman Qatar Saudi	Min.	15.70%	15.10	7.63%	1.04%	9.25%	9.52%	2.0	34.0	0.38	3.26%	28.51	6.58%	13.65%	-89.25	1.11%
		Max.	19.91%	18.56	12.97	6.82%	34.61	63.91	8.0	806.0	2.72	46.14	59.36	34.44	59.02%	44.20%	41.23%
		Mean	18.13%	17.09	11.07	3.38%	23.22	43.66	4.4	223.9	1.50	16.25	41.25	21.77	31.72%	-1.35	21.21%
		Median	18.11%	16.97	12.54	2.96%	23.15	49.59	4.0	179.0	1.58	15.80	38.27	24.50	27.30%	3.06%	21.21%
		St.Dev	1.52%	1.27%	2.36%	2.13%	8.75%	17.25	2.0	267.1	0.92	14.87	13.30	9.83%	16.20%	42.09%	13.24%
2	Indonesia		25.95%	24.22	12.63	2.38%	-2.5	68.47	13.0	392.0	2.91	20.54	37.44	10.07	12.99%	0.10%	4.66%
3	Egypt Pakistan Turkey	Min.	17.78%	15.01	5.17%	1.11%	10.69	22.62	3.0	143.0	3.38	40.15	38.04	43.32	81.23%	0.08%	8.17%
		Max.	19.00%	16.98	9.85%	3.75%	34.34	39.97	6.0	2 652.0	3.73	69.91	68.94	65.06	95.52%	0.74%	45.67%
		Mean	18.32%	15.68	7.68%	2.53%	25.20	32.83	5.0	1 397.7	3.61	52.28	52.96	55.43	88.38%	0.49%	28.43%
		Median	18.19%	15.05	8.03%	2.73%	30.55	35.90	6.0	1 398.0	3.71	46.77	51.89	57.92	88.38%	0.65%	31.46%
		St.Dev	0.62%	1.13%	2.36%	1.33%	12.70	9.07%	1.7	1 254.5	0.20	15.63	15.48	11.08	7.15%	0.36%	18.93%
4	Malaysia		18.16%	14.82	6.83%	1.57%	35.06	41.36	16.0	2 246.0	0.97	13.89	36.73	18.69	130.38%	0.95%	3.31%

Source: Authors' calculation based on IFSB data