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FINANCIAL PERFORMANCE OF THE ISLAMIC BANKING: AN INTERNATIONAL COMPARISON USING TOPSIS METHOD

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ABSTRACT

The aim of this study is to evaluate financial performance of the Islamic banks based on international comparison between 2014 and 2022. The regions and countries which have dependencies with a presence in Islamic finance were included. TOPSIS Method as a multi-criteria decision making method was used to rank the regions and countries. Four regions (Southeast Asia, GCC, South Asia, Other MENA) and nine countries (Indonesia, Brunei Darussalam, Kuwait, UAE, Oman, Pakistan, Bangladesh, Jordan, Sudan) were selected based on Islamic Finance Development Report 2022. ROA, ROE, NPM, Gross NPF, net NPF, capital to assets, liquid assets ratio, liquid assets to short-term liabilities and CAR were taken as financial performance evaluation criteria. The results indicate that while Other MENA is determined as the best performing region for Islamic banking, the country with the best performance is Sudan for the analysis period.

Keywords: Financial Performance, Islamic Banking, TOPSIS Method.
JEL Classification: B23, G20, G21.

İSLAMİ BANKACILIKTA FİNANSAL PERFORMANS: TOPSIS YÖNTEMİ İLE ULUSLARARASI BİR KARŞILAŞTIRMA

Hilal H. ERDOĞAN

ÖZET

Bu çalışmanın amacı, Islami bankaların finansal performanslarını 2014-2022 yılları arasında uluslararası karşılaştırmaya dayalı olarak değerlendirmektedir. Çalışmaya, İslami finansın uygulandığı bölge ve ülkeler dahil edilmiştir. Bölge ve ülkelerin sıralanmasında çok kriterli karar verme tekniği olan TOPSIS Yöntemi kullanılmıştır. İslami Finans Gelişim Raporu 2022'ye göre dört bölge (Güneydoğu Asya, KİK, Güney Asya, Diğer ODKA) ve dokuz ülke (Endonezya, Brunei, Kuveyt, BAE, Umman, Pakistan, Bangladeş, Ürdün, Sudan) seçilmiştir. Finansal performans değerlendirme kriteri olarak Aktif Karlılık, Özsermaye Karlılığı, Net Kar Marjı, Takipteki Krediler, Özkaynakların Aktif Toplamına Oranı, Likidite Oranları ve Sermaye Yeterlilik Oranı kullanılmıştır. Diğer ODKA, İslami bankacılık açısından en iyi performans gösteren bölge olarak belirlenirken, en iyi performans gösteren ülke Sudan olmuştur.

Anahtar Kelimeler: Finansal Performans, İslami Bankacılık, TOPSIS Yöntemi.

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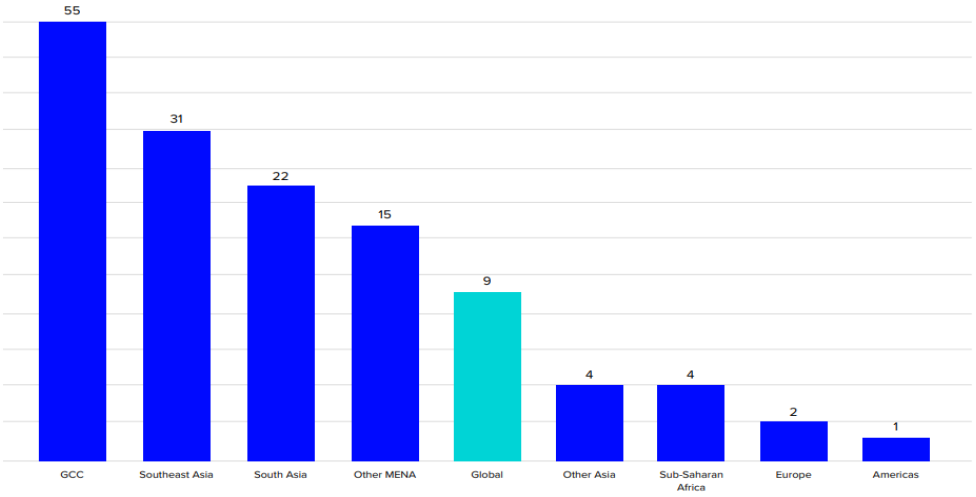
INTRODUCTION

The Islamic bank is a financial institution that complies with the Islamic Shariah rules in both its principles and practices. The Islamic bank is based on interest-free system in any of its practices, as well (Saleh and Zeitun, 2006). There are two basic principles behind Islamic banking. Firstly, the transactions are executed within the profit and loss sharing financing. The most importantly, the collection and payment of interest is prohibited and not permitted under the Islamic banking rules.

The first experiment was conducted in Egypt within Islamic banking. In 1963, Ahmad El Najjar made a vigorous attempt and a profit-sharing Savings Bank was established in Egypt. Nine banks providing saving-investment transactions were instituted in the country by 1967. Then, Nasir Social Bank was established as interest-free commercial bank in Egypt in l97l. Starting from the late of 1960s, the profit-sharing system continues to grow rapidly. Previously, Islamic banks were operating mostly in Islamic countries. However, the practices of Islamic finance have increased considerably all over the globe and Islamic banks have now spread to more than sixty countries. This view indicates that Islamic banking is as important as conventional banking. Furthermore, Islamic banking is growing not only in the number of countries in which it operates, but also in terms of financial transactions. Thus, it is being practiced on even more intensive scale (Khan and Bhatti, 2018; Haseeb, 2018). The Islamic finance industry showed resilience in 2020 by reaching almost US$4 trillion in 2021 on growth of 17%, up from 14% in 2020. As seen, Islamic banking and finance institutions have developed fundamentally and thus have recently emerged as a competitive alternative to conventional banking at the global level. Even after the impressive global development of Islamic banking and finance all over the globe, Islamic Finance Development Indicator (IFDI) reports that Gulf Cooperation Council (GCC), the South Asia and Southeast Asia are the leading regions while the United States and countries in Europe have the lowest average scores, by region. IFDI 2022 Average Scores by Region are shown on Figure 1.

Figure 1. IFDI 2022 Average Scores by Region



Source: Islamic Finance Development Indicator (IFDI) Report 2022.

Islamic Finance Development Indicator (IFDI) 2022 reports the average scores for 136 countries as nine and only thirty-eight countries take an above-average value. Picture 1 exhibits top fifteen IFDI countries with the global average IFDI scores for 2022 based on five development indicators of financial performance, governance, sustainability, knowledge and awareness.

Picture 1: Top IFDI Countries and Global Average IFDI Scores for 2022

Country	Ranking	IFDI 2022 Score	Financial Performance	Governance	Sustainability	Knowledge	Awareness
Malaysia	1	113	98	94	117	147	172
Saudi Arabia	2	74	65	49	89	75	143
Indonesia	3	61	31	65	30	195	56
Bahrain	4	59	35	86	36	49	112
Kuwait	5	59	42	75	20	21	157
UAE	6	52	33	71	28	34	116
Oman	7	48	16	89	45	28	94
Pakistan	8	43	22	75	24	52	58
Qatar	9	38	25	47	21	16	102
Bangladesh	10	36	30	61	18	14	47
Maldives	11	32	16	72	35	12	19
Brunei Darussalam	12	31	14	58	10	32	48
Jordan	13	29	15	40	51	43	17
Sudan	14	27	32	51	3	9	5
Singapore	15	27	4	66	61	4	8
Global Average		9	5	16	7	7	12

Source: Islamic Finance Development Indicator (IFDI) Report 2022.

Malaysia is the leading country based on Islamic Finance Development Indicator Report 2022, as shown on Picture 1. All the development indicators have higher scores, in comparison with the others. Saudi Arabia has strong performance in Awareness and thus, follows closely after Malaysia. Indonesia's good scores for Knowledge makes it the third highest performing country. Singapore was ranked 15th because of its weak performance in Financial Performance, Knowledge and Awareness.

Even after the impressive global development of Islamic banking all over the world, it is still a relatively new field. An international comparison is quite limited on the evaluation of the performance, in the literature. This study aims to compare financial performances of the Islamic banks operating in four regions and nine Islamic countries between the years of 2014 and 2022. The study investigates Islamic banking performance in earnings, asset quality, leverage, liquidity and capital adequacy for the analysis period. As suggested by Olson (2004), Technique for Order Preference by Similarity to An Ideal Solution (TOPSIS) Method as a multi-criteria decision-making technique is used to rank the regions and countries.

This study is one of the first comprehensive attempts to evaluate the financial performances of nine Islamic countries and four regions. The performance evaluation based on a regional comparison is a first of its kind to the best of our knowledge. Additionally, earnings and liquidity ratios are the mostly utilized as financial performance evaluation criteria, in the literature. Asset quality, leverage and capital adequacy ratios are included in this study, as well. Therefore, this study fills the gap and contributes to the international literature in the field of Islamic banking.

The remainder of this study includes the following parts: the literature review is, firstly, presented. The data is explained and the methodology utilized in this study is stated, then. The conclusion part follows after the empirical findings.

1. LITERATURE REVIEW

Islamic banking has recently developed and emerged as a competitive alternative to conventional banking at the global level. However, there are quite a few studies focusing on Islamic banking in the literature.

Özkan (2019), Akyüz *et al.* (2020), Yağlı (2020) and Yıldız (2020) conducted a comparative performance analysis in Turkey. Özkan (2019) evaluated the financial performances of the participation banks in Turkey by utilizing CAMELS Rating System in the period of 2016-2018. The Vakıf, Kuveyt Turk and Ziraat participation banks are the best performing banks, respectively. However, the Turkey Finance and Albaraka were found as the worst performing banks. Akyüz *et al.* (2020) also conducted an analysis in Turkey and compared the financial performance of participation banks between the years of 2013 and 2017. Based on CAMELS approach results, the performances of participation banks tend to decrease since 2015. Yağlı (2020) integrated CAMELS Rating System and TOPSIS Method in the evaluation process. Yağlı (2020) conducted a comparative analysis between the state and private participation banks in Turkey. Accordingly, state participation banks performed better in the performance ranking in Turkey. Yıldız (2020) compared financial performances of the Participation 30 and Participation 50 indices in Turkey. Entropy-based TOPSIS Method was used covering the 2015-2017 period. No significance was found between the participation indices based on the results.

Alsu *et al.* (2018), Elmas and Yetim (2021), Nayman Hamamcı and Karkacıer (2022) and Erdoğan (2023) conducted an analysis based on international comparison. Alsu *et al.* (2018) utilized TOPSIS Method to evaluate the financial performances of participation banks between 2009 and 2015. The study was conducted in six Islamic countries and the best performing countries were found as Saudi Arabia and Qatar. Elmas and Yetim (2021) utilized TOPSIS Method and compared the performances of the participation banks in Saudi Arabia, Malaysia, United Arab Emirates, Kuwait, Turkey and Bahrain. Accordingly, Turkey took the fifth place in the ranking performance in the period of 2012-2019.

Nayman Hamamcı and Karkacıer (2022) integrated TOPSIS and Entropy methods to evaluate performance ranking of participation banks in Turkey and Gulf Cooperation Council between 2016 and 2019. Accordingly, UAE ranked first for all the years except 2018. Oman exhibited the best performance in 2018. Erdoğan (2023) preferred an integrated approach and used Entropy based Waspas Method to compare financial performance of the Islamic banks in the Covid-19 Era. The analysis was conducted on seven Islamic countries between 2017 and 2021. Liquid assets to short-term liabilities was found as the best performance criteria for Islamic banks during the 'whole period', 'no pandemic period' and 'pandemic period'. As the Islamic country with the best performance was Bangladesh during 'no pandemic period', Turkey exhibited better performance during 'whole period' and 'pandemic period' in comparison with the others.

The existing literature is mostly based on the comparison of the financial performances of different Islamic banks. An international comparison is quite limited on the evaluation of the performance. This study enables to compare four regions and nine countries in terms of financial performance.

2. DATA & METHODOLOGY

The financial performance of the Islamic banks operating in nine countries and four regions was compared between 2014 and 2022, in this study. IFDI Report 2022 includes 136 countries and eight regions that have dependencies with a presence in Islamic finance. The top fifteen IFDI countries were selected based on IFDI Report 2022, in this study. Accordingly, Islamic countries of Indonesia, Kuwait, The United Arab Emirates, Oman, Pakistan, Bangladesh, Brunei Darussalam, Jordan and Sudan were included to the analysis. Malaysia, Saudi Arabia, Qatar, Singapore, Maldives and Bahrain were excluded because of the unavailability of the data series for the given period. While Indonesia and Brunei Darussalam were evaluated within the region of Southeast Asia, Kuwait, UAE and Oman were considered within the region of GCC. Pakistan and Bangladesh are located in South Asia and Jordan and Sudan are located in Other MENA based on IFDI 2022.

The financial performance measurement criteria were classified based on earnings, asset quality, financial leverage, liquidity and capital adequacy. To measure earnings, return on assets (ROA), return on equity (ROE), net profit margin (NPM) were utilized. Gross nonperforming financing (gross NPF) ratio and net nonperforming financing (net NPF) ratio were used to assess asset quality. While capital to assets ratio is an indicator of financial leverage, liquid assets ratio and liquid assets to short-term liabilities were determined to evaluate liquidity. Capital adequacy ratio (CAR) was also used for the performance measurement, as in Erdoğan (2022. The data was collected from the official website of Islamic Financial Services Board. The classification of financial performance measurement criteria is exhibited on Table 1.

Table 1: The Classification of Financial Performance Measurement Criteria

Earnings	Return on Assets (ROA) Return on Equity (ROE) Net Profit Margin (NPM)
Asset Quality	Gross Nonperforming Financing Ratio (Gross NPF) Net Nonperforming Financing to Capital (Net NPF)
Leverage	Capital to Assets
Liquidity	Liquid Assets Ratio Liquid Assets to Short-Term Liabilities
Capital Adequacy	Capital Adequacy Ratio (CAR)

Multi-criteria decision making (MCDM) methods are the most widely applied methods if multiple alternatives exist during the decision making process ((Zavadskas *et al.*, 2012; Elsayed *et al.*, 2017). They provide to aid selection of the most suitable alternative by using mathematical analysis (Yılmaz *et al.*, 2020). In this study, the region and the country with the best performance are determined by using TOPSIS Method as a multi-criteria decision making method.

The TOPSIS Method is one of the most commonly used multi-criteria decision making method to evaluate different alternatives. The method was initially suggested by Hwang and Yoon (1981), Lai et al. (1994) and Yoon and Hwang (1995). The TOPSIS method is, basically, utilized to minimize the distance to the ideal solution and maximize the distance to the negative ideal solution (Hwang and Yoon, 1981; Lai et al. 1994; Olson, 2004). Thus, it is important to use TOPSIS Method because of the consideration of distances to an ideal solution. It is also widely employed because of its rationality, comprehensibility, good computational efficiency and ease of application. Despite its simple structure, it is a powerful decision method. The efficiency of the decision-making process increases and decision makers can select solutions effectively based on their importance and impact on business (Magableh and Mistarihi, 2022).

To rank the alternatives based on TOPSIS Method, the steps can be stated, as follows (Olson, 2004):

1. A decision matrix (A_{ij}) is constructed in case of *m* alternatives and *n* evaluation criteria, as in the following equation:

$$A_{ij} = \begin{pmatrix} x_{11} & x_{12} & \dots & x_{1n} \\ x_{21} & x_{22} & \dots & x_{2n} \\ \dots & \dots & \dots & \dots \\ x_{m1} & x_{m2} & \dots & x_{mn} \end{pmatrix}$$

2. The standard decision matrix is constructed by normalizing the decision matrix for each criterion, as follows:

$$r_{ij} = \frac{x_{ij}}{\sqrt{\sum_{i=1}^{m} x_{ij}^2}} \quad i=1,2,\dots,n; \quad j=1,2,\dots,m \qquad (1)$$

where r_{ij} is normalized value, x_{ij} is the original value of indicators. Thus, the normalized decision matrix $R_{ij} = [r_{ij}]_{mxn}$ is obtained.

3. To create the weighted standard decision matrix (V_{ij}), the weight values (w_i) are determined, at first.

$$\sum_{i=1}^{n} w_i = 1$$

The weighted standard decision matrix (V_{ij}) is then obtained by multiplying the weight values (w_i) by the normalized standard decision matrix (R_{ij}), as follows:

$$V_{ij} = \begin{pmatrix} w_1 r_{11} & w_2 r_{12} & \dots & w_n r_{1n} \\ w_1 r_{21} & w_2 r_{22} & \dots & w_n r_{2n} \\ \dots & \dots & \dots & \dots \\ w_1 r_{m1} & w_2 r_{m2} & \dots & w_n r_{mn} \end{pmatrix}$$

4. The ideal (A^+) and negative ideal (A^-) solutions are identified, as shown in the following formula, respectively:

$$V_j^+ = \{(max_i v_{ij} \mid j \in J), (min_i v_{ij} \mid j \in J') \mid i = 1,2, \dots . m\}$$

$$V_j^- = \{(min_i v_{ij} \mid j \in J), (max_i v_{ij} \mid j \in J') \mid i = 1,2, \dots . m\}$$

Therefore, $A^+ = \{V_1^+, V_2^+, \dots \dots, V_n^+, \}$ and $A^- = \{V_1^-, V_2^-, \dots \dots, V_n^-, \}$ are obtained.

5. The separations of measurements are computed at this step. Possible deviations from the ideal solution are found by using the distance approach. Deviation values are expressed, as follows:

$$S_i^+ = \sqrt{\sum_{j=1}^{n} (V_{ij} - V_j^+)^2} \quad i=1,2, \dots \dots m$$

$$S_i^- = \sqrt{\sum_{j=1}^{n} (V_{ij} - V_j^-)^2} \quad i=1,2, \dots \dots m$$

where S_i^+ is the ideal separation measure , S_i^- is the negative ideal separation measure.

6. The relative closeness to the ideal solution (C_i^+) is calculated, as follows:

$$C_i^+ = \frac{S_i^-}{S_i^+ + S_i^-}, \; i=1,2, \dots \dots m; \; 0 \le C_i^+ \le 1$$

If the ideal solution is 1, it is close to the ideal solution. Otherwise, if it is 0, it is accepted that the ideal solution is negative. The higher values of C_i^+ are expected in the ranking performance.

3. EMPIRICAL FINDINGS

To rank the Islamic banks based on their financial performances, TOPSIS Method is used. Financial performances of the banks are compared according to regions and countries which have dependencies with a presence in Islamic finance, separately. As mentioned before, four regions, nine countries and nine evaluation criteria are used, in this study.

3.1. TOPSIS Results by Region

Firstly, the decision matrix of four regions and nine financial performance criteria is created and shown on Table 2.

Table 2: The Decision Matrix

	ROA	ROE	NPM	CAR	Gross NPF	Net NPF	Capital to Assets	Liquid assets ratio	Liquid assets to short-term liabilities
Southeast Asia	0,0146	0,1200	0,3267	0,1939	0,0444	0,1059	0,1153	0,2952	0,5941
GCC	0,0067	0,0747	0,1298	0,2040	0,0318	0,0735	0,1565	0,1938	0,4071
South Asia	0,0140	0,2465	0,3382	0,1398	0,0446	0,1320	0,0543	0,2519	0,7058
Other MENA	0,0226	0,2981	0,5273	0,1860	0,0386	0,1127	0,0666	0,4127	0,8117

Table 3 exhibits the normalized standard decision matrix on the regional basis.

Table 3: The Normalized Decision Matrix

	ROA	ROE	NPM	CAR	Gross NPF	Net NPF	Capital to Assets	Liquid assets ratio	Liquid assets to short-term liabilities
Southeast Asia	0,4708	0,2915	0,4548	0,5309	0,5522	0,4900	0,5424	0,4930	0,4589
GCC	0,2157	0,1813	0,1808	0,5587	0,3953	0,3401	0,7364	0,3237	0,3145
South Asia	0,4509	0,5986	0,4708	0,3829	0,5554	0,6104	0,2553	0,4207	0,5452
Other MENA	0,7270	0,7238	0,7340	0,5093	0,4799	0,5212	0,3135	0,6893	0,6271

The Weighted Standard Decision Matrix is presented on Table 4. In this study, the weight values were determined as 0.11.

Table 4: The Weighted Standard Decision Matrix

	ROA	ROE	NPM	CAR	Gross NPF	Net NPF	Capital to Assets	Liquid assets ratio	Liquid assets to short-term liabilities
Southeast Asia	0,0523	0,0324	0,0505	0,0590	0,0614	0,0544	0,0603	0,0548	0,0510
GCC	0,0240	0,0201	0,0201	0,0621	0,0439	0,0378	0,0818	0,0360	0,0349
South Asia	0,0501	0,0665	0,0523	0,0425	0,0617	0,0678	0,0284	0,0467	0,0606
Other MENA	0,0808	0,0804	0,0816	0,0566	0,0533	0,0579	0,0348	0,0766	0,0697

In order to be able to rank the Islamic banks in terms of regions for the period 2014-2022, the solution sets of ideal (A^+) and negative ideal (A^-) are constituted and presented on Table 5.

Table 5: The Ideal (A^+) and Negative Ideal (A^-) Solutions

	ROA	ROE	NPM	CAR	Gross NPF	Net NPF	Capital to Assets	Liquid assets ratio	Liquid assets to short-term liabilities
A^+ (max.)	0,0808	0,0804	0,0816	0,0621	0,0617	0,0678	0,0818	0,0766	0,0697
A^- (min.)	0,0240	0,0201	0,0201	0,0425	0,0439	0,0378	0,0284	0,0360	0,0349

The positive discrimination (S_i^+) values and the negative discrimination (S_i^-) values were calculated using the negative ideal and positive ideal values of the regions. The scores of similarity (C_i^+) with the ideal set obtained for four regions were presented on Table 6. The maximum of these C_i^+ scores was determined as the first one in the ranking. According to the results, while the highest score (0,7086) was obtained by the region of Other MENA, the lowest score (0,3193) was observed for the region of GCC.

Table 6: Euclidean Distance and Performance Score

	S_i^+	S_i^-	C_i^+	R
Southeast Asia	0,0746	0,0660	0,4697	3
GCC	0,1213	0,0569	0,3193	4
South Asia	0,0788	0,0766	0,4930	2
Other MENA	0,0491	0,1193	0,7086	1

3.2. TOPSIS Results by Country

Table 7 exhibits the decision matrix including of nine countries and nine financial performance criteria between the years of 2014 and 2022.

Table 7: The Decision Matrix

		ROA	ROE	NPM	CAR	Gross NPF	Net NPF	Capital to Assets	Liquid assets ratio	Liquid assets to short-term liabilities
Southeast Asia	**Indonesia**	0,0134	0,1209	0,1433	0,1884	0,0402	0,1491	0,0991	0,1197	0,1670
	Brunei Darussalam	0,0159	0,1192	0,5101	0,1993	0,0486	0,0628	0,1315	0,4707	1,0211
GCC	**Kuwait**	0,0112	0,1021	0,2535	0,1775	0,0233	0,0930	0,1079	0,2913	0,4003
	UAE	0,0146	0,1153	0,3290	0,1722	0,0636	0,1059	0,1243	0,1507	0,1865
	Oman	-0,0057	0,0067	-0,1930	0,2624	0,0084	0,0216	0,2373	0,1395	0,6346
South Asia	**Pakistan**	0,0158	0,2670	0,3365	0,1516	0,0489	0,0362	0,0580	0,2793	0,6480
	Bangladesh	0,0122	0,2261	0,3400	0,1280	0,0404	0,2278	0,0505	0,2245	0,7636
Other MENA	**Jordan**	0,0175	0,1832	0,5000	0,2234	0,0269	0,0548	0,0876	0,3639	0,6104
	Sudan	0,0277	0,4130	0,5546	0,1485	0,0503	0,1706	0,0456	0,4616	1,0131

Table 8 reports the obtained values of the the normalized decision matrix.

Table 8: The Normalized Decision Matrix

		ROA	ROE	NPM	CAR	Gross NPF	Net NPF	Capital to Assets	Liquid assets ratio	Liquid assets to short-term liabilities
Southeast Asia	**Indonesia**	0,2810	0,1964	0,1268	0,3349	0,3185	0,4106	0,2789	0,1309	0,0828
	Brunei Darussalam	0,3327	0,1935	0,4514	0,3543	0,3854	0,1730	0,3701	0,5146	0,5062
GCC	**Kuwait**	0,2351	0,1658	0,2244	0,3155	0,1849	0,2562	0,3037	0,3184	0,1984
	UAE	0,3057	0,1872	0,2911	0,3060	0,5042	0,2918	0,3500	0,1648	0,0924
	Oman	-0,1190	0,0109	-0,1708	0,4663	0,0667	0,0596	0,6681	0,1525	0,3145
South Asia	**Pakistan**	0,3314	0,4336	0,2978	0,2694	0,3877	0,0996	0,1634	0,3053	0,3212
	Bangladesh	0,2564	0,3672	0,3009	0,2276	0,3203	0,6274	0,1422	0,2454	0,3785
Other MENA	**Jordan**	0,3667	0,2975	0,4425	0,3970	0,2130	0,1509	0,2466	0,3978	0,3026
	Sudan	0,5809	0,6708	0,4908	0,2640	0,3987	0,4699	0,1285	0,5046	0,5022

The Weighted Standard Decision Matrix is presented on Table 9. In this study, the weight values were determined as 0.11, as stated earlier.

Table 9: The Weighted Standard Decision Matrix

		ROA	ROE	NPM	CAR	Gross NPF	Net NPF	Capital to Assets	Liquid assets ratio	Liquid assets to short-term liabilities
Southeast Asia	**Indonesia**	0,0312	0,0218	0,0141	0,0372	0,0354	0,0456	0,0310	0,0145	0,0092
	Brunei Darussalam	0,0370	0,0215	0,0502	0,0394	0,0428	0,0192	0,0411	0,0572	0,0562
GCC	**Kuwait**	0,0261	0,0184	0,0249	0,0351	0,0205	0,0285	0,0337	0,0354	0,0220
	UAE	0,0340	0,0208	0,0323	0,0340	0,0560	0,0324	0,0389	0,0183	0,0103
	Oman	-0,0132	0,0012	-0,0190	0,0518	0,0074	0,0066	0,0742	0,0169	0,0349
South Asia	**Pakistan**	0,0368	0,0482	0,0331	0,0299	0,0431	0,0111	0,0182	0,0339	0,0357
	Bangladesh	0,0285	0,0408	0,0334	0,0253	0,0356	0,0697	0,0158	0,0273	0,0421
Other MENA	**Jordan**	0,0407	0,0331	0,0492	0,0441	0,0237	0,0168	0,0274	0,0442	0,0336
	Sudan	0,0645	0,0745	0,0545	0,0293	0,0443	0,0522	0,0143	0,0561	0,0558

In order to be able to rank the Islamic banks in terms of nine countries between the years of 2014 and 2022, the solution sets of ideal (A^+) and negative ideal (A^-) are calculated and exhibited on Table 10.

Table 10: The Ideal (A^+) and the Negative Ideal (A^-) Solutions

	ROA	ROE	NPM	CAR	Gross NPF	Net NPF	Capital to Assets	Liquid assets ratio	Liquid assets to short-term liabilities
A^+ (max.)	0,0645	0,0745	0,0545	0,0518	0,0560	0,0697	0,0742	0,0572	0,0562
A^- (min.)	-0,0132	0,0012	-0,0190	0,0253	0,0074	0,0066	0,0143	0,0145	0,0092

The positive discrimination (S_i^+) values and the negative discrimination (S_i^-) values were calculated using the negative ideal and positive ideal values of the countries. The scores of similarity (C_i^+) with the ideal set obtained for nine countries were presented on Table 11. The maximum of these C_i^+ scores was determined as the first one in the ranking. Based on the results, it can be said that the highest score (0,6976) was obtained by Sudan located in Other MENA. It is followed by Brunei Darussalam (0,5769) and Bangladesh (0,5435), respectively. The lowest score (0,3073) was observed for the country of Oman located in GCC.

Table 11: Euclidean Distance and Performance Score

		Si^+	Si^-	Ci^+	R
Southeast Asia	**Indonesia**	0,1124	0,0789	0,4122	7
	Brunei Darussalam	0,0870	0,1186	0,5769	2
GCC	**Kuwait**	0,1097	0,0741	0,4034	8
	UAE	0,1044	0,0947	0,4757	6
	Oman	0,1589	0,0705	0,3073	9
South Asia	**Pakistan**	0,1006	0,0991	0,4964	5
	Bangladesh	0,0923	0,1099	0,5435	3
Other MENA	**Jordan**	0,0954	0,1046	0,5230	4
	Sudan	0,0674	0,1555	0,6976	**1**

Table 12 provides summary scores of both four regions and nine countries. Accordingly, it is observed that the Islamic banks traded in Sudan is the best performing country based on the financial performance measurement criteria. It is followed by the Islamic banks traded in Brunei Darussalam and Bangladesh, respectively. The banks exhibit the weakest performance with the value of 0,3073 in Oman based on TOPSIS results. Kuwait follows it during the analysis period. It is also clearly seen from the table that Other MENA is the best performing region covering the years from 2014 to 2022. The region with the weakest performance is GCC. Thus, it can be said that the rankings of regions virtually match the rankings of countries based on the TOPSIS Method. However, the weak financial performance of Indonesia (0,4122) makes the region of Southeast Asia the third region, although Brunei Darussalam (0,5769) is ranked within the first three countries.

Table 12: Summary Scores of the Alternatives

	Ci^+	R		Ci^+	R
Southeast Asia	0,4697	3	**Indonesia**	0,4122	7
			Brunei Darussalam	0,5769	2
GCC	0,3193	4	**Kuwait**	0,4034	8
			UAE	0,4757	6
			Oman	0,3073	9
South Asia	0,4930	2	**Pakistan**	0,4964	5
			Bangladesh	0,5435	3
Other MENA	0,7086	**1**	**Jordan**	0,5230	4
			Sudan	0,6976	**1**

CONCLUSION

Islamic banking is growing not only in the number of countries in which it operates, but also in terms of financial transactions. Thus, it is being practiced on even more intensive scale (Khan and Bhatti, 2018; Haseeb, 2018). For that reason, the changes and developments in Islamic banking should be analyzed and how these changes affect the Islamic banks' performances should be investigated.

The financial performance of the Islamic banks in four regions (Southeast Asia, GCC, South Asia, Other MENA) and nine countries (Indonesia, Brunie Darussalam, Kuwait, UAE, Oman, Pakistan, Bangladesh, Jordan, Sudan) was evaluated, in this study. TOPSIS Method was utilized to provide an international comparison between the years of 2014 and 2022. The classification of financial performance measurements is made based on earnings, asset quality, financial leverage, liquidity and capital adequacy in Islamic banking industry. Thus, ROA, ROE, NPM, Gross NPF, net NPF, capital to assets, liquid assets ratio, liquid assets to short-term liabilities and capital adequacy ratio were included, as financial performance measurement indicators.

This study provides a new evidence using TOPSIS Method in the financial performance measurement of the Islamic regions besides Islamic countries. It was used to rank the Islamic regions and countries which have dependencies with a presence in Islamic finance, in this study. It is important to use TOPSIS Method because of the consideration of distances to an ideal solution. Based on TOPSIS results, it is observed that Sudan is the best performing country based on the banks' financials, in this study. It is followed by Brunei Darussalam and Bangladesh, respectively. The banks exhibit the worst performance in Oman located in GCC, based on TOPSIS results. Kuwait follows it during the analysis period. Sudan, Brunei Darussalam and Bangladesh can be said to be managed with more accurate policies for the given period. The weak financial performances of Oman, Kuwait and Indonesia may be due to their lower asset scores, by comparison with the other countries.

It is clearly seen that Other MENA is the best performing region covering the years from 2014 to 2022, as well. The region with the worst performance is GCC. Thus, it can be said that the rankings of regions virtually match the rankings of countries based on the TOPSIS Method. However, the weak financial performance of Indonesia makes the region of Southeast Asia the third region, although Brunei Darussalam is ranked within the first three countries. It can be said that Islamic banks do not have a strong infrastructure and have not yet reached an ideal economic scale in Indonesia and GCC countries. However, Islamic banking sector is undergoing consolidation in the GCC countries that will streamline and reduce costs.

Even though a great number of studies focus on performance measurement in the banking sector, there have been only a few studies evaluating the financial performances of the Islamic banks based on an international comparison. This study is one of the first comprehensive attempts to evaluate the financial performances of nine Islamic countries. Most importantly, to the best of our knowledge, this is the first study to evaluate and rank the financial performance of four Islamic regions. Additionally, more comprehensive ratio groups are used as financial performance indicators, in this study. While earnings and liquidity ratios are the mostly utilized as financial performance evaluation criteria, in the literature, asset quality, leverage and capital adequacy ratios are included, in this study. Therefore, this study fills the gap and contributes to the international literature in the field of Islamic banking.

This study highlights important managerial and policy implications to enhance the performance of the Islamic banks. An implication for Islamic bank managers is to manage asset quality and credit risks more effectively, in particular, in the GCC countries. In case of low asset quality, they should hold more capital to manage credit risk. They may also focus on the lower non-performing loans. Because the higher non-performing loans, the lower asset quality, leads to the lower ROE and ROA. As a result, this reduces the financial performances of Islamic banks. Enforcement of capital adequacy regulations may also be revised to facilitate payments and measures may be taken to support Islamic banks through fiscal policies, especially in Oman, Kuwait and Indonesia. These changes will strengthen financial performance in Indonesia and the GCC countries.

The limitation of the study is its country and region scope. Malaysia and Saudi Arabia which are the leading countries based on IFDI Report 2022 could not be included because of the unavailability of the data series for the given period. For further research, to expand the countries allows to examine the effect of these countries in the regional ranking. It would also be suggested to use a fixed weight method such as Entropy Method for the decision making process to determine the best performance criteria. This provides a more comprehensive analysis to compare Islamic banks' performances. Crisis periods, in particular Covid-19 era, can also be taken into consideration as sub-periods to detect the crisis effect on financial performance evaluation. This provides whether Islamic banking sector are managed effectively and the right precautions are taken during crisis periods.

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