

Evaluation of Financial Performance of Participation Banks in Turkey and GCC with TOPSIS Method

Araştırma Makalesi /Research Article

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ABSTRACT: It was aimed to determine and compare the financial performance of participation banks in Turkey and Gulf Cooperation Council (GCC) member countries between 2016-2019. Entropy weighting method and TOPSIS was preferred for the analyses, and all the calculations were conducted using Microsoft Excel. According to the performance analysis results, Kuveyt Turk participation bank operating in Turkey was taken first place in 2016, 2017, and 2019. On the contrary, it was determined that Albaraka Türk was dropped to the last rank in the performance ranking in the last two years. When examining the results regarding performance comparison between countries, it was found that the United Arab Emirates ranked first in the other years except 2018. In 2018, Oman ranked first in the performance ranking. It was seen that Turkey ranks second in 2016 but ranks third in the other three years. As a result, it was observed that there are differences in performance rankings over the years.

Keywords: Participation banking, Islamic banking, Financial performance, TOPSIS

JEL Code: G21

Türkiye ve KİK Ülkelerindeki Katılım Bankalarının Finansal Performansının TOPSIS Yöntemiyle Değerlendirilmesi

ÖZ: Bu çalışmada Türkiye’de ve Körfez İşbirliği Konseyi (KİK) ’ne üye ülkeler de faaliyet gösteren katılım bankalarının 2016-2019 yılları arasındaki finansal performans skorlarının belirlenmesi ve karşılaştırılması amaçlanmıştır. Bankaların finansal performansları belirlenirken yapılan analizlerde Entropi ağırlık yöntemi ve TOPSIS yöntemi tercih edilmiştir ve hesaplamaların tümü Microsoft Excel yardımıyla yapılmıştır. Performans analizi sonuçlarına göre, Türkiye’de yer alan katılım bankalarından Kuveyt Türk’ün 2018 yılı hariç diğer yıllarda ilk sırada yer aldığı ve bunun aksine Albaraka Türk’ün ise son iki yılda sıralamada en son sıraya gerilediği tespit edilmiştir. Ülkeler arası performans karşılaştırmasına ilişkin sonuçlarda ise, Birleşik Arap Emirlikleri’nin 2018 yılı hariç diğer üç yılda ilk sırada yer aldığı tespit edilmiştir. 2018 yılında performans sıralamasında ilk sırada Umman yer almıştır. Türkiye’nin bu performans sıralamasında 2016 yılında ikinci sırada olduğu; diğer üç yılda ise üçüncü sırada olduğu görülmüştür. Sonuç olarak yıllar itibariyle performans sıralamalarında farklılıklar olduğu gözlemlenmiştir.

Anahtar Kelimeler: katılım bankacılığı, İslami bankacılık, finansal performans, TOPSIS

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1. Introduction

From past to present, countries' economies have played an important role in helping countries take a more active role in financial markets around the world. One of the main players in financial markets is banks, which play an important role in both the national economy and the global economy (Abrar et al., 2018: 345; Bolat and Metin, 2019: 351). Banks are the main factors funding the country's economy. They also affect the development and growth of other sectors (Tuan İbrahim et al., 2020: 233). Therefore, banking and financial sector has become the reality of today's economy (Adam, 2014: 162). The main task of banks is to bring together those who have surplus funds and individuals who need funds. In addition to this basic task, it also performs activities such as money transfer transactions, investment, creating funds for the economy, meeting the need for funds between institutions or individuals, and establishing connections between parties (Altan and Candoğan, 2014: 376). Participation banks and conventional banks technically play the same role in the market. Both types of banking mainly act as intermediaries between the parties. However, there are many differences in both the applications and the establishment philosophy of these two banking models (Benamraoui, 2008: 114).

The need for participation banking system in a modern sense began to manifest itself with the sudden increase in oil prices (1970s) and industrialization movements (Burtan-Doğan et al., 2017: 179; Şekeroğlu and Özer, 2017: 20; Alsu et al., 2018: 304). In parallel with this, the participation banking system in Muslim societies was first put into operation with modern methods and practices by the late Saudi Arabian King Faisal (Sümer and Onan, 2015: 298). Later, this system continued to develop rapidly both in the Middle East and Far East with the support of the rich and various Muslim countries (Sümer and Onan, 2015: 299). The importance given to this system is increasing not only in these regions, but all over the world (Rammal, 2007: 65; Shanmugam and Zahari, 2009: 23). In other words, although it basically targets Muslim customers, it can also attract non-Muslims (Saleh et al., 2017: 879). In the report published by Avantalion consulting firm in Germany, it was stated that the Muslim population in countries such as France, Germany and England would increase rapidly between 2010 and 2030 and this increase would surpass the countries in the east, and therefore the importance of the demand for the Islamic banking system in Europe was emphasized (Şekeroğlu and Özer, 2017: 21). In parallel with this, Abrar, Ahmed and Kasnif (2018: 342) stated that Islamic banking has grown rapidly and noticeably all over the world. In addition, they stated that this rapid growth was caused by factors such as the increase in the Muslim population around the world, the increase in the performance of Islamic banks and the existence of high ethical rules prohibiting investment in portfolios of alcohol, cigarettes, speculation, interest, illegal investment activities, which are prohibited by Islam.

Although the leading centers of participation banking are Malaysia, Bahrain and London, these activities are also seen in other countries. In Iran, seven of the largest Islamic banks operate (Burtan-Doğan et al., 2017: 179). In terms of Turkey, Islamic capital mobility has become more comfortable by means of participation banks (Sümer and Onan, 2015:307). As can be seen, the importance given to the participation banking system is increasing all over the world (Sümer and Onan, 2015: 307; Meslier et al., 2020: 1). Parallel to this situation, the competitive environment between banks is getting tougher. Banks need to improve their financial performance and take steps to keep them in the sector against their rivals. While the concept of financial performance is defined as the effort and power of businesses to achieve their goals; businesses need this indicator to understand themselves, their competitors and their level of competition (Esmer and Bağcı, 2016: 18).

In the study, it was aimed to calculate and compare financial performance scores of participation banks operating between the years 2016-2019 in the Turkey and the member countries of GCC. In this context, first, performance of participation banks operating in Turkey was discussed in detail separately. Then, these transactions were made on country basis and the financial performance results obtained were compared. With this study, the financial performance of participation banks, which is the new trend of the banking sector in Turkey and whose number is increasing, will be determined, and a window will be opened both for potential customers and for researches that want to work on this subject. In addition, it is thought that an important contribution will be made to the literature by mutually evaluating the performances of banks in the Gulf Cooperation Council member countries, which have a long history in participation banking and banks in Turkey. It also differs from the results of other studies by revealing the results of comparison with other countries.

Participation banking and financial performance were explained in detail in the literature review section, which is the next part of the study. Then, in the third section, the methodology of the research was mentioned and the analysis methods used were explained. When it comes to the fourth part, the findings obtained as a result of the analysis were reported. Finally, in conclusion section, research results were evaluated.

2. Literature Review

2.1. Participation Banking

Participation banking is a part of a system that is regulated within the framework of Islamic economic rules and is based on the Quran and Sunnah and fulfills all kinds of financial transactions within this framework (Burtan-Doğan et al., 2017: 177; Lök, 2018: 137; Pehlivan, 2016: 299; Iqbal and Mirakhor, 2011: 116; Abrar et al., 2018: 344). These banks are being referred to by several names in worldwide such as "Islamic banks", "interest-free banking" or "profit-loss the

bank" but in Turkey, it is expressed as "participation banks" (Wrestler, 2016: 298). Participation banking system is defined as a model that realizes all kinds of banking transactions that comply with the interest (riba) prohibition, both collects and lends funds through various partnerships or financial methods, and whose essence is based on the concepts of "profit / loss" (TKKB, 2012: 2; Esmer and Bağcı, 2016: 18; Şekeroğlu and Özer, 2017: 16; Applause, 2018: 121). Fund collecting is carried out in the form of profit or loss sharing, and funding is carried out according to the provisions of partnership or trade instead of directly giving loans. As with commercial banks, these banks also essentially perform intermediation activities. In other words, they transfer the funds they receive from savers who have excess and unused funds to individuals in need of funds (Burtan-Doğan et al., 2017: 177; Lök, 2018: 134; Yıldırım, 2018: 535). Since they invoice their funding transactions, they also help prevent unofficial trade transactions (Sümer and Onan, 2015: 304). They consider the prohibitions stipulated by Islamic economics in all of these activities. In this way, participation banks also contribute to production bringing the funds that are idle due to the sensitivity to interest in some individuals (Yıldırım, 2018: 535).

Within the scope of this system, the concepts of interest and profit should be addressed in detail. Interest is expressed in the Quran with the concept of "riba". Riba is used as a word meaning to increase, add or grow (Mevdudi, 2016: 252-253). According to the definition made in Islamic Law, it is expressed as "interest is an excess that has no equivalent in a contract that has the nature of exchanging goods with goods.". However, every surplus on the principal is not interest. Because Islam has stated that there can be an increase in the capital through business or trade and this increase is not interest. In profit, there is an income sharing whose amount is known and whose existence is fully revealed. However, on the contrary, in interest, it is shared an income that has not yet existed. In other words, interest is a result of rent economy and profit is a result of real production (Sümer and Onan, 2015: 304).

The main reason for the establishment of participation banks is that Islam has prohibited all kinds of interest (Olson and Zoubi, 2008: 45; Benamraoui, 2008, 113; Ahmed, 2010, 308; Terzi, 2015: 4; Ökte, 2010: 187; Mevdudi, 2016: 307). What is essential in these institutions is the profit / loss sharing and interest free principle (Errico and Farahbaksh 1998: 13; Siddiqui, 2008: 680; Olson and Zoubi, 2008: 45; Benamraoui, 2008, 114; Ahmed, 2010, 308; Khediri et al., 2015: 77; Meslier et al., 2020: 1). Sümer and Onan (2015: 297) stated that the principle of interest-free is about money being a medium of exchange rather than buying and selling like a good. In other words, since money is not considered as a commodity in Islamic finance, it is not rent out for a fee (which means interest) (Shanmugam and Zahari, 2009: 23). Instead, the system suggests participation in equity and risk sharing on behalf of banks and investors (Siddiqui, 2008: 681). However, the working principles of participation banks are not limited to being interest-free. In addition, it is also based on principles such as the prohibition of uncertainty,

contribution to the real economy, risk sharing, prohibition of speculation and the prohibition of trade in substances harmful to humanity (Shanmugam and Zahari, 2009: 8; Khediri et al., 2015: 77-78). Uncertainty and speculation are prohibited as they can cause harm to the parties. According to the risk sharing principle, the risk is not attributed to only one side, that is, the participation of the parties in both profit and potential loss is taken as a basis. Profit / loss is distributed fairly at the end of the process, since the earnings to be obtained are not predetermined (Lök, 2018: 136). In the principle of contribution to the real economy, there is a good or service in return for every financial transaction, that is, it is supported by a real economic transaction (Khediri et al., 2015: 77). According to the last principle, goods such as alcohol, drugs and tobacco products, whose trade is prohibited by the Islamic religion, are not subject to transactions in this banking system (Shanmugam and Zahari, 2009: 23; Hayat and Kraeussl, 2011: 190; Lök, 2018: 136). There are economic and social reasons besides these religious reasons for the emergence of participation banks (Meslier et al., 2020: 4). Social reasons can be listed as (1) preventing social injustice, (2) eliminating injustice in income distribution, and (3) preventing unjust enrichment due to interest. As for economic reasons, there are many factors such as (1) controlling efficiency by using funds in production, (2) preventing the resources obtained from oil from shifting to Western banks, (3) reluctance of commercial banks to support projects (Pehlivan, 2016: 300; Burtan-Doğan et al., 2017: 178). In addition, Aras and Öztürk (2011: 172) were listed the reasons and objectives of entering participation banks in the banking sector in Turkey as follows: (a) bringing the idle funds of individuals who avoid interest due to their religious sensibilities to the economy, (b) developing relations with countries based on Islamic economics and (c) to provide fund inflows from oil-rich countries.

The first steps regarding participation banking were taken with the Islamic Conference held in 1969 (Burtan-Doğan et al., 2017: 179) and the first Islamic bank, namely interest-free banking, was established in Egypt in 1971 under the name Nasser Social Bank. Then, with the establishment of the Islamic Development Bank in 1975, developments in participation banking gradually accelerated. This process continued with the establishment of Dubai Islamic Bank in the same year, Kuwait Finance House in 1977 and Albaraka in 1982 (Emeç, 2014; Burtan-Doğan et al., 2017: 179; Nademi and Güngör, 2019: 64). Participation banking system in the Turkey operates more than 30 years even if not as old as world. The first bank was established in 1975 under the name State Industry and Labor Bank. However, these trials were not successful enough. After these unsuccessful attempts, steps again were taken for these banks in 1983 and Islamic finance system started to operate under the name of Special Finance Institutions in Turkey with the decision of the Council of Ministers numbered 83/7506. They took the name of Participation Bank with the decision numbered 5411 of the new Banks Law in 2005 (Esmer and Bağcı, 2016: 19; Şekeroğlu and Özer, 2017: 22; Alsu et al., 2018: 304).

2.2. Participation Banking and Financial Performance

Innovative developments in the banking sector on a global and local scale make competition between banks difficult. As a requirement of the challenging competitive environment, the performance factor of institutions stands out in banking as in every other sector. Performance can be defined as the power that enables the desired success and result to be achieved. When we define performance in terms of businesses, it is expressed as the effort of their businesses to achieve their goals. Financial performance is a representation of the financial status and positions of businesses (Tuan İbrahim et al., 2020: 235). It shows the financial ability and adequacy of businesses in reaching their economic goals (Orlitzky, 2001: 168). In addition to these, financial performance is an indicator that the firm needs to know itself, to understand its competitors and competition levels, and to plan the future according to its own capacity (Esmer and Bağcı, 2016: 18). Financial performance is very important due to its ability to create value in businesses (Carton and Hofer, 2006: 3).

Although there are various definitions in the literature regarding the concept of performance, the common point among these definitions is to make a comparison between what should be and what is happening and to obtain a result. This situation is closely related with the control mechanisms of the businesses. As required by the control mechanism, businesses measure, evaluate and report their performance. They take the necessary measures or make improvements according to the relevant results (Altan and Candoğan, 2014: 378). Evaluation of bank performances is important for all stakeholders such as depositors, investors, managers, creditors and debtors. Also, in competitive markets, these performance values are an indicator for depositors and investors to deposit their funds (Akyüz et al., 2011: 74-75; Hawaldar et al., 2017: 101; Tho'in, 2019: 8182; Tuan İbrahim et al., 2020: 235).

Various methods were developed for performance evaluation and financial criteria were determined (Altan and Candoğan, 2014: 379; Omrani et al. 2019: 1634). The prerequisite for accurately measuring financial performance is to collect data correctly and to decide on the best method to be used. According to the results of the analysis, positive or negative comments should be made and solutions should be developed for how to increase performance for negative situations. In order to increase performance, the firm must first know itself well and know the limits of increasing its capacity (Esmer and Bağcı, 2016: 18). In this context, while traditionally financial ratios are taken as the basis for performance evaluation; in advanced level analysis, evaluation is made with operations research or artificial intelligence techniques (Fethi and Pasiouras, 2010: 189). Similarly, Adam (2014: 170) mentioned two broad accounting approaches, financial ratios and econometric techniques used to measure bank performance. In this context, balance sheet and income statement are two important financial instruments used in measuring the financial performance of companies and in assessing their

financial status (Adam, 2014: 163). That means, the values reported in the financial statements form a basis for evaluating the financial performance of many institutions, including banks (Tho'in, 2019: 8182).

In the literature review on the performance evaluation of participation banks, it was seen that different results were obtained due to the differences in the period studied, the variables and methods used (ratio analysis, TOPSIS, ELECTRE, WASPAS etc.). In this context, the studies in the literature are grouped according to the method used and the findings are presented. First, when the studies that make performance evaluation using ratio analysis are examined, Ayrıçay et al. (2019) made ratio analysis using a variety of financial ratios to determine the performance of participation banks between 2011-2017 years that located in Turkey, Qatar, Indonesia and Saudi Arabia. The authors evaluated three banks including Kuveyt Turk, Albaraka Turk and Türkiye Finans which operate in Turkey. Albaraka Turk was found to be the best bank in terms of return on assets (ROA), return on equity (ROE) and equity multiplier ratios. On the contrary, it was observed that there is not much difference between productivity ratios. When evaluated in terms of countries, it was found that Turkey has highest return on assets, Indonesia highest equity profitability, Qatar highest efficiency and operating leverage and Saudi Arabia highest loan size. Pehlivan (2016) determined that the shares of participation banks in the sector have grown significantly since 2006, according to the data obtained with the help of financial ratios and some values. Kartal (2012) compared the performances of participation banks with commercial banks using financial ratios and found that participation banks performed higher in the 2007-2011 period.

In addition to these studies, when studies using WASPAS and ELECTRE methods are examined, Gezen (2019) analyzed financial performance of three participation banks in Turkey between 2010-2017 years using Entropy and WASPAS method. As a result, the author found that while Türkiye Finans is first rank between 2010-2015, Kuveyt Turk is first rank between 2016-2017. Similarly, Odabaş and Bozdoğan (2020) also found that Türkiye Finans exhibits low performance in the 2016-2018. On the other hand, Vakıf Katılım ranked first in the performance ranking. The authors analyzed the performance of participation banks in the relevant years using the ELECTRE method. Contrary to these results, Özkan (2020) mentioned that Türkiye Finans exhibit the best financial performance between 2016-2018 in performance ranking. The author used efficiency ratios while calculating the performance of banks and analyzed them with TOPSIS method.

Then, the studies that make performance evaluation using TOPSIS, a method that is frequently preferred in the literature and has attracted great interest by researchers for many years, were examined. Accordingly, Yayar and Baykara (2012) analyzed the performances of participation banks between 2005 and 2011 using TOPSIS method by using financial ratios and found that Albaraka Turk

exhibited the best performance. In addition to these, Esmer and Bağcı (2016) ranked the performances of participation banks between 2004-2015 using TOPSIS method and found that Bank Asya was the participation bank with the highest performance. Wanke et al. (2016) mentioned that Albaraka Turk that operated in Turkey is first rank in the financial performance ranking in 2014. Alsu et al. (2018: 315) used TOPSIS method to rank financial performance of participation banks between 2009-2015 years located in six different countries. The authors found that while participation banks in Turkey rank in the middle row, participation banks in Saudi Arabia and Qatar rank in the top position. Also, Albaraka Turk was exhibited the best performance in the related years among participation banks that operate in Turkey. Çağırın-Kendirli et al. (2019) analyzed the performances of both commercial and participation banks using the TOPSIS method in the period between 2005-2015. In the ranking of banks by years, the authors found that Albaraka Turk participation bank was in the first rank in 2008 and 2012, but commercial banks were in the first rank in other years. Contrary to these, in the study conducted by Karakaya (2020), it was found that while Albaraka Turk was ranked last in the performance ranking, Kuveyt Turk participation bank was in the first rank. Likewise, Gözkonan and Küçükbay (2019) used TOPSIS in their study on the ranking and comparison of the performances of commercial and participation banks. Their results show that the performance ranking of commercial banks is better compared to participation banks. They mentioned that the short history of participation banks in Turkey can be indicated as a cause of this condition.

When the studies in the literature were examined, it was seen that the performances of participation banks are mainly compared either among themselves or with traditional banks. In this research, not only the performance comparisons of the participation banks among themselves, but also the financial performance comparisons between Turkey and the GCC countries, where there are banks operating in participation banking for a long time, were made.

3. Methodology

3.1. Data Set

In this study, it was aimed to compare the performance of participation banks operating in Turkey and the GCC member countries. The GCC covers six countries in the Middle East: Bahrain, Qatar, Kuwait, Saudi Arabia, U.A.E. and Oman. The Council was established in 1981 to coordinate various issues such as economic, political and social among the relevant countries (Al-Malkawi, 2018: 606). The banking sector in the GCC countries is associated with oil exports (Grassa, 2012: 230). At the same time, the GCC region continues its activities as the first financier of Islamic finance worldwide (Grassa, 2012: 231). In this context, while data on banks operating in Turkey was obtained by the Participation Banks Association of Turkey (TKBB) website, the data of other countries were collected by using the financial statements (balance sheet and

income statement) published on the websites of banks. In the study, there were 26 banks totally including 5 banks from Turkey (Kuveyt Türk, Albaraka Türk, Türkiye Finans, Ziraat Katılım, and Vakıf Katılım), 4 banks from Bahrain (Albaraka Banking Group, Al Salam Bank Bahrain, Bahrain Islamic Bank, Itmaar Bank, and Khaleeji Commercial Bank), 2 banks from Oman (Alizz Islamic Bank and Bank Nizwa), 5 banks from Kuwait (Ahli United Bank, Boubyan Bank, Kuwait Finance House, Kuwait International Bank, and Warba Bank) , 3 banks from Qatar (Masraf Al Rayan, Qatar International Islamic Bank, and Qatar Islamic Bank), 4 banks from Saudi Arabia (Al Rajhi Bank, Alinma Bank, Bank Al Bilad, and Bank Aljazira)and 3 banks from UAE (Abu Dhabi Islamic Bank, Dubai Islamic Bank, and Sharjah Islamic Bank).

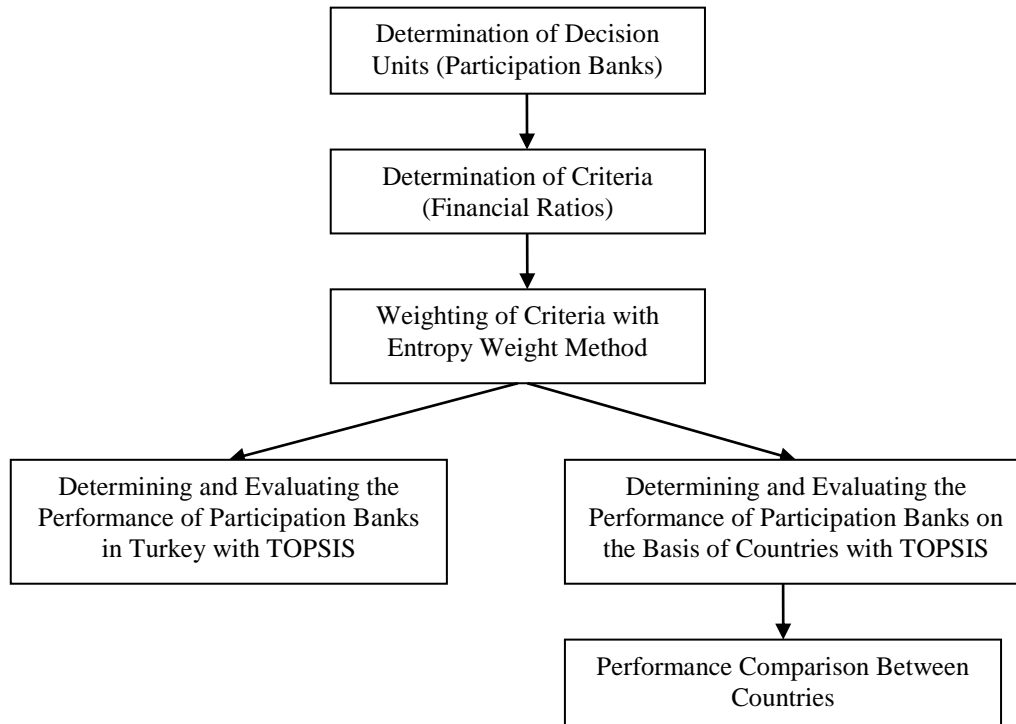
During the analyses of the financial performances of the banks, eight different financial ratios were used and the information about them are listed in Table 1.

Table 1: Ratios to be used in TOPSIS Method

Financial Ratios	Formula	Abbreviation
Leverage Ratio	Total Debt/Total Assets	LR
Equity/Total Assets	Equity/Total Assets	EOA
Return on Assets	Net Income/Total Assets	ROA
Return on Equity	Net Income/Total Equity	ROE
Liquid Assets/Total Deposits	Liquid Assets/Total Deposits	LDR
Liquid Assets/Total Assets	Liquid Assets/Total Assets	LAR
Liquid Assets/Funds Collected	Liquid Assets/Funds Collected	LFR
Capital Adequacy Ratio	(Tier 1 Capital + Tier 2 Capital)/Risk-Weighted Assets	CAR

3.2. Research Method

Within the scope of this research, TOPSIS method was preferred to measure the financial performance of participation banks between 2016-2019 and the related calculations were made with the help of Microsoft Excel. The Entropy weighting method was used to calculate the weight values to be used while creating the "weighted decision matrix" in the analysis to be made with the TOPSIS method. The Entropy method was preferred because it provides an objective evaluation in determining the criterion weights. In the first phase of the research, it was evaluated the performance of participation banks operating in Turkey and in the second phase, it was compared to the performances of participation banks in Turkey and other countries. A diagram summarizing the research method is presented in Figure 1.

Figure 1: Flowchart of Research Method

3.2.1. Entropy Weighting Method

Weighting of criteria, which is one of the important steps of multiple decision making methods, can be determined objectively and subjectively according to the literature (Shemshadi et al., 2011: 2161). While calculations are made on the quantitative data of the alternatives in objective weighting, in subjective weighting, the researchers give weight to the criteria according to their own judgment (Bakır and Atalık, 2018: 621). In this direction, since the scores of the decision matrix are known, the entropy weighting method, which is an objective evaluation method, was used in the study.

The concept of entropy was defined by Rudolph Clausius in 1965 and is expressed as the measure of uncertainty and disorder in a system (Zhang et al., 2011: 444; Bakır and Atalık, 2018: 621). Shannon (1948) adapted this concept to information theory. According to this theory, it is the measure of uncertainty about random variables expressed by entropy (Zhang et al., 2011: 444). The entropy weight method is a method that is frequently used among the multiple decision-making techniques used in decision-making processes. This method provides an evaluation independent of the individual judgments of researchers and experts, and the weight values are calculated by mathematical operations (Perçin and Sönmez, 2018: 570; Bakır and Atalık, 2018: 621).

The steps and formulas of the entropy weight method are shown in Table 2 (Wu et al., 2011: 5162-5165; Li et al., 2011: 2087; Karami et al., 2014: 523-524).

Table 2: The Stages and Equations of the Entropy Weighting Method

Stages	Definitions	Formula and Matrix
Step 1	Creating decision matrix	$x = \begin{bmatrix} x_{11} & \cdots & x_{1p} \\ \vdots & \ddots & \vdots \\ x_{m1} & \cdots & x_{mp} \end{bmatrix}$
Step 2	Obtaining the "Normalized Matrix"	$P_{ij} = \frac{a_{ij}}{\sum_{i=1}^m a_{ij}}$ (1)
Step 3	Finding Entropy Value Regarding Criteria	$E_j = k * [\sum P_{ij} \ln P_{ij}]$ (2)
		$k = \frac{1}{\ln(n)}$ (3)
Step 4	Calculating the Degree of Differentiation of Information	$d_j = 1 - E_j$ (4)
Step 5	Calculating the Weights Regarding Criteria	$w_j = \frac{d_j}{\sum_{j=1}^n d_j}$ (5)

The sum of the weights given to the criteria should always be equal to 1 (Çatı et al., 2017: 204).

3.2.2. TOPSIS

TOPSIS word is the initials of the words in the sentence "Technique for Order Preference by Similarity to Ideal Solution" and it appears as one of the multi-criteria decision-making methods. Multi-criteria decision-making methods have attracted great attention from researchers and practitioners for many years. These methods sort according to the different characteristics of the alternatives and then analyze by choosing the best (Dandage et al., 2018: 321).

Hwang and Yoon developed TOPSIS method in 1981 (Ayaydın et al., 2018: 56) and is a simple decision-making method without complex mathematical algorithms and models (Özdemir, 2018: 134). It is based on the principle of choosing the best option among the options called decision units (Chitnis and Vaidya, 2016: 171). In the TOPSIS method, two main attributes, ideal distance (S^+) and non-ideal distance (S^-) are calculated (Chitnis and Vaidya, 2016: 171; Bilbao-Terol et al., 2019: 328) and using these properties, the value of proximity to ideal solution (C^+) is calculated. Thus, the method tries to choose the alternatives that are closest to the ideal solution and at the same time the most distant from the non-ideal (negative ideal) solution (Hwang et al., 1993; Dumanoğlu and Ergül, 2010; Chitnis and Vaidya, 2016: 171; Ayaydın et al., 2018: 56; Bilbao-Terol et al.2019: 328). As can be seen, the TOPSIS method is essentially based on the consensus philosophy (Bilbao-Terol et al., 2019: 328).

Mathematical calculation steps of TOPSIS method are as follows (Hwang and Yoon, 1981);

Step 1: Creating the decision matrix

First, the decision matrix is created with the decision units in the rows of the matrix and the research criteria in the columns.

$$K_{hi} = \begin{bmatrix} k_{11} & \cdots & k_{1p} \\ \vdots & \ddots & \vdots \\ k_{m1} & \cdots & k_{mp} \end{bmatrix} \quad (6)$$

Step 2: Obtaining the "Normalized Matrix"

The square of each criterion value in the created decision matrix is calculated and then the values in the columns are summed. The square root of the total value in each column summed is taken, and then normalization is done according to equation (7). As a result, matrix (8) is obtained.

$$N_{hi} = \frac{k_{hi}}{\sqrt{\sum_{i=1}^m k_{hi}^2}} \quad (7)$$

$$N_{hi} = \begin{bmatrix} n_{11} & \cdots & n_{1p} \\ \vdots & \ddots & \vdots \\ n_{m1} & \cdots & n_{mp} \end{bmatrix} \quad (8)$$

Step 3: Creating the Weighted Normalized Matrix

The matrix (9) is obtained by multiplying the normalized values obtained after the normalization process by the predetermined weight values for criteria.

$$V_{hi} = \begin{bmatrix} v_{11} & \cdots & v_{1p} \\ \vdots & \ddots & \vdots \\ v_{m1} & \cdots & v_{mp} \end{bmatrix} \quad (9)$$

Step 4: Calculation of ideal solution value and non-ideal solution value

The ideal solution values by taking the maximum value of each column in the weighted matrix (9); likewise, non-ideal solution values by taking the minimum value of each column are calculated.

Step 5: Calculation of ideal distance (S⁺) and non-ideal distance (S⁻) for each decision unit

After finding ideal and non-ideal solution values, ideal distance (S⁺) and non-ideal distance (S⁻) values are calculated with the help of equation (10).

$$S^+ = \sqrt{\sum_{i=1}^n (v_{hi} - v_i^+)^2} \quad S^- = \sqrt{\sum_{i=1}^n (v_{hi} - v_i^-)^2} \quad (10)$$

Step 6: Calculation of the relative proximity (C^+ value) to the ideal solution

Using the ideal and non-ideal length values, the C^+ value is calculated with the help of equation (11).

$$C^+ = \frac{S^-}{S^- + S^+} \quad (11)$$

4. Analysis and Findings

In the first phase of the study, the financial performance of five participation banks operating in Turkey was calculated by years separately. The financial ratios of the banks in the relevant years are listed in Table 3 and the weight values, which calculate with the entropy method, of these ratios in Table 4.

Table 3: Financial Ratios of Banks (2016-2019)

	LR	EOA	ROA	ROE	LDR	LAR	LFR	CAR
<i>2016</i>								
Albaraka Türk	93,06	6,94	0,70	9,93	30,9	21,79	32,77	13,46
Kuveyt Türk	91,93	8,06	1,11	13,85	40,75	26,82	45,76	18,16
Türkiye Finans	90,56	9,43	0,76	8,08	29,58	16,05	24,34	15,58
Vakıf Katılım	81,28	18,71	0,40	2,16	37,40	24,24	38,53	29,25
Ziraat Katılım	90,39	9,60	0,38	4,01	29,63	20,98	30,04	12,46
<i>2017</i>								
Albaraka Türk	93,15	6,85	0,69	9,96	25,39	20,06	29,72	17,06
Kuveyt Türk	91,96	8,03	1,17	14,68	31,38	30,07	34,71	17,66
Türkiye Finans	89,61	10,39	0,96	9,24	29,01	16,35	25,22	18,22
Vakıf Katılım	91,61	8,38	1,04	12,46	26,80	16,58	28,21	14,09
Ziraat Katılım	90,22	9,78	1,10	11,32	19,17	13,39	16,90	13,10
<i>2018</i>								
Albaraka Türk	92,27	7,72	0,34	4,67	38,9	29,02	44,23	14,66
Kuveyt Türk	92,67	7,33	1,17	15,99	31,22	22,71	38,16	17,68
Türkiye Finans	90,81	9,19	0,95	10,29	37,35	21,32	34,62	16,61
Vakıf Katılım	92,71	7,29	1,55	21,31	36,42	26,39	41,51	13,60
Ziraat Katılım	90,00	10,00	1,45	14,54	18,45	12,60	16,44	12,76
<i>2019</i>								
Albaraka Türk	92,56	7,44	0,12	1,66	32,6	25,23	42,32	15,00
Kuveyt Türk	93,47	6,53	1,06	16,27	30,27	24,78	46,87	19,32
Türkiye Finans	90,79	9,21	0,72	7,83	29,29	22,33	37,86	17,26
Vakıf Katılım	93,54	6,46	1,07	16,57	21,29	16,1	26,29	14,88
Ziraat Katılım	91,30	8,70	1,42	16,32	14,97	10,47	14,71	16,6
Note: The values in the table are shown in%.								

Table 4: Weight Values

	LR	EOA	ROA	ROE	LDR	LAR	LFR	CAR
2016	0.11297	0.12947	0.13167	0.15148	0.11487	0.11601	0.11816	0.12537
2017	0.12092	0.12364	0.12473	0.12442	0.12419	0.13165	0.12741	0.12303
2018	0.11537	0.11744	0.13809	0.13909	0.12260	0.12370	0.12654	0.11717
2019	0.11050	0.11297	0.14828	0.15066	0.11875	0.12105	0.12619	0.11160

The stages of the TOPSIS method were explained in detail using data from 2016 as an example, and then general scores and rankings for all years were given.

Step 1: Creating decision matrix

2016 financial ratios (see Table 3) of participation banks operating in Turkey was taken from the TKBB website and the decision matrix are shown in Table 5.

Table 5: Decision Matrix for 2016

	LR	EOA	ROA	ROE	LDR	LAR	LFR	CAR
Albaraka Turk	0.9306	0.0694	0.0070	0.0993	0.3090	0.2179	0.3277	0.1346
Kuveyt Turk	0.9193	0.0806	0.0111	0.1385	0.4075	0.2682	0.4576	0.1816
Türkiye Finans	0.9056	0.0943	0.0076	0.0808	0.2958	0.1605	0.2434	0.1558
Vakıf Katılım	0.8128	0.1871	0.0040	0.0216	0.3740	0.2424	0.3853	0.2925
Ziraat Katılım	0.9039	0.0960	0.0038	0.0401	0.2963	0.2098	0.3004	0.1246

Step 2: Obtaining the "Normalized Matrix"

The decision matrix obtained in the first step was normalized by using equation (7) and the normalized matrix in Table 6 was formed.

Table 6: Normalized Matrix for 2016

	LR	EOA	ROA	ROE	LDR	LAR	LFR	CAR
Albaraka Turk	0.4648	0.2734	0.4338	0.5118	0.4069	0.4376	0.4180	0.3204
Kuveyt Turk	0.4591	0.3175	0.6879	0.7138	0.5366	0.5386	0.5836	0.4323
Türkiye Finans	0.4523	0.3715	0.4710	0.4164	0.3895	0.3223	0.3104	0.3709
Vakıf Katılım	0.4059	0.7371	0.2479	0.1113	0.4925	0.4868	0.4914	0.6963
Ziraat Katılım	0.4515	0.3782	0.2355	0.2067	0.3902	0.4213	0.3831	0.2966

Step 3: Creating the Weighted Normalized Matrix

The weight values needed to construct the weighted normalized matrix, which is the third step of the TOPSIS method, were calculated by the entropy weight method (see Table 4).

Table 7: Weighted Normalized Matrix for 2016

	LR	EOA	ROA	ROE	LDR	LAR	LFR	CAR
Albaraka Turk	0.0525	0.0354	0.0571	0.0775	0.0467	0.0507	0.0494	0.0402
Kuveyt Turk	0.05187	0.0411	0.0906	0.1081	0.0616	0.0624	0.0690	0.0542
Türkiye Finans	0.0511	0.0481	0.0620	0.0630	0.0447	0.0373	0.0367	0.0465
Vakıf Katılım	0.0458	0.0954	0.0326	0.0168	0.0566	0.0564	0.0581	0.0873
Ziraat Katılım	0.0501	0.0489	0.0310	0.0313	0.0448	0.0489	0.0453	0.0372

After this process, the weighted normalized matrix shown in Table 7 was obtained by multiplying each of the weight values obtained with the values in the relevant column.

Step 4: Calculation of Ideal Solution Value and Non-Ideal Solution Value

After these operations, the ideal and non-ideal solution values were calculated by determining the maximum and minimum values of the values in each column in the weighted matrix and the results are presented in Table 8.

Table 8: The Ideal and Non-ideal Solution Values for 2016

	LR	EOA	ROA	ROE	LDR	LAR	LFR	CAR
Ideal	0.0525	0.0954	0.0906	0.1081	0.0616	0.0625	0.0690	0.0873
Non-ideal	0.0459	0.0354	0.0310	0.0169	0.0447	0.0374	0.0367	0.0525

Step 5 and Step 6: Calculation of Ideal Distance (S^+), Non-Ideal Distance (S^-) and Relative Proximity Value (C^+) to Ideal Solution

After finding ideal and non-ideal solution values, ideal distance (S^+), non-ideal distance (S^-) and relative proximity to ideal solution (C^+) were calculated with the help of equations (10), (11) and (12), and results are presented in Table 9.

Table 9: Performance Scores and Rankings for 2016

	S^+	S^-	C^+	Ranking
Albaraka Turk	0.0929	0.0690	0.4262	3
Kuveyt Turk	0.0636	0.1191	0.6519	1
Türkiye Finans	0.0933	0.0581	0.3836	4
Vakıf Katılım	0.1091	0.0841	0.4353	2
Ziraat Katılım	0.1231	0.0250	0.1688	5

The above transactions were repeated in other years and the results and rankings obtained regarding the performance ranking are presented in Table 10.

Table 10: Performance Ranking Belong to Participation Banks in Turkey

	2016		2017		2018		2019	
	C^+	Ranking	C^+	Ranking	C^+	Ranking	C^+	Ranking
Albaraka Turk	0.4262	3	0.4163	4	0.4108	5	0.3686	5
Kuveyt Turk	0.6519	1	0.8383	1	0.6669	2	0.7998	1
Türkiye Finans	0.3836	4	0.4449	3	0.5091	3	0.5366	4
Vakıf Katılım	0.4353	2	0.4523	2	0.8260	1	0.6451	2
Ziraat Katılım	0.1688	5	0.3049	5	0.4951	4	0.6120	3

According to Table 10, Kuveyt Turk ranked first in the performance ranking in all years except 2018. In the second rank was Vakıf Katılım, which has shown a good performance despite being newly established. While Türkiye Finans was in the middle-rank related years, Albaraka Turk and Ziraat Katılım were in the last ranks. It was observed that the performance of Albaraka Turk Participation Bank has been decreasing every year. On the contrary, the performance of Ziraat

Katılım bank was shown an upward trend. In 2016 and 2017, while Kuveyt Turk was in the first place, Ziraat Katılım was in the last place. We can say that the low performance of Ziraat Katılım bank was due to the fact that these years are the first operating years. While Vakıf Katılım was in the first rank in 2018, in 2019, Kuveyt Turk rose to the first rank again. In 2018 and 2019, Albaraka Turk ranks last.

Table 11: Financial Ratios Belong to Countries (2016-2019)

	LR	EOA	ROA	ROE	LDR	LAR	LFR	CAR
<i>2016</i>								
Turkey	89.44	10.55	0.67	7.61	33.65	21.98	34.29	17.78
Bahrain	86.40	13.47	0.64	4.50	19.74	8.25	23.40	19.20
United Arab Emirates	85.76	14.23	1.76	12.34	18.27	12.62	20.83	18.23
Qatar	85.31	14.68	1.87	12.81	18.12	11.44	16.75	18.34
Kuwait	85.64	14.36	0.90	7.11	18.49	9.92	17.16	18.91
Saudi Arabia	85.15	14.85	1.66	11.32	11.40	66.86	13.42	20.31
Oman	77.04	22.95	2.21	5.39	14.78	7.99	10.83	24.08
<i>2017</i>								
Turkey	91.31	8.69	0.99	11.53	26.35	19.29	26.95	16.03
Bahrain	86.94	12.95	0.51	3.74	15.29	7.26	19.71	18.21
United Arab Emirates	86.07	13.93	1.76	12.71	19.16	13.74	22.25	17.96
Qatar	86.16	13.84	1.75	12.74	13.73	8.37	12.07	18.16
Kuwait	87.28	12.72	1.23	9.41	16.57	10.05	16.25	20.44
Saudi Arabia	85.23	14.78	1.78	12.04	12.41	9.54	14.50	20.66
Oman	83.74	16.28	2.87	8.29	13.99	7.65	11.14	16.96
<i>2018</i>								
Turkey	91.69	8.31	1.09	13.36	32.47	22.41	34.99	15.06
Bahrain	87.37	12.53	0.51	4.08	18.45	7.55	22.40	16.43
United Arab Emirates	86.18	13.82	1.79	12.74	15.90	11.48	18.41	17.46
Qatar	86.34	13.66	1.89	13.84	13.08	9.50	12.75	17.92
Kuwait	87.52	12.48	1.26	10.28	15.95	9.10	14.55	19.40
Saudi Arabia	85.78	14.22	1.94	14.03	10.93	8.36	13.03	21.21
Oman	86.43	13.56	3.26	12.98	20.57	10.93	16.12	15.75
<i>2019</i>								
Turkey	92.33	5.84	0.74	10.18	25.68	19.78	33.61	16.61
Bahrain	87.06	11.62	0.45	3.44	17.08	10.62	34.88	16.42
United Arab Emirates	84.54	15.69	1.81	11.85	13.82	10.06	16.09	19.39
Qatar	86.16	13.66	1.84	13.52	12.63	9.26	12.92	19.42
Kuwait	87.89	12.11	1.18	10.26	18.99	11.58	18.48	18.42
Saudi Arabia	86.32	13.67	1.79	13.03	10.26	7.96	12.15	20.51
Oman	77.15	12.03	0.49	0.78	19.19	10.6	15.23	14.65
Note: 1) The values in the table were shown in %.								
2) While calculating the financial ratios of the countries, the financial ratios of the banks in each country were calculated separately, and then the arithmetic average of the ratios calculated for the general country ratio was taken.								

In the second phase of the research, financial performances between 2016-2019 of the participation banks which operate in notably Turkey and the Gulf Cooperation Council member countries were calculated and then, the performance scores were compared. The financial ratios of the countries in the relevant years are listed in Table 11 and the weight values, which calculate with the entropy method, of these ratios in Table 12.

Table 12: Weight Values

	LR	EOA	ROA	ROE	LDR	LAR	LFR	CAR
2016	0,09315	0,11013	0,15914	0,13877	0,12779	0,13840	0,13662	0,09601
2017	0,0921	0,1017	0,1588	0,1267	0,1302	0,1509	0,1454	0,0943
2018	0,0960	0,1043	0,1752	0,1304	0,1283	0,1397	0,1261	0,1001
2019	0,0852	0,1045	0,1672	0,1937	0,1094	0,1117	0,1401	0,0881

The TOPSIS stages, which were calculated in detail for 2016 in the first stage of the research, were repeated here on a country basis for each year. The obtained financial performance scores and rankings are shown in Table 13.

Table 13: Participation Banks Performance Scores and Rankings by Country

	2016		2017		2018		2019	
	C ⁺	Ranking	C ⁺	Ranking	C ⁺	Ranking	C ⁺	Ranking
Turkey	0,54	2	0,53	3	0,54	3	0,61	3
Bahrain	0,25	7	0,18	7	0,18	6	0,37	6
United Arab Emirates	0,58	1	0,69	1	0,54	3	0,63	1
Qatar	0,53	3	0,41	6	0,58	2	0,62	2
Kuwait	0,51	4	0,58	2	0,45	4	0,56	5
Saudi Arabia	0,39	6	0,42	5	0,42	5	0,59	4
Oman	0,43	5	0,50	4	0,63	1	0,20	7

According to Table 13, while UAE was the first rank in the financial performance rankings in 2016, Turkey was taken the second rank and Qatar third. Bahrain took the last rank. In the year 2017, while the UAE was maintained its first rank, Kuwait was followed in the second rank and Turkey in the third. Bahrain, on the other hand, ranked last with a financial performance score of 18%. Oman ranked first in 2018, and in 2019, the UAE rose to the first rank again. In this process, Turkey was maintained its ranking. On the contrary, Oman fell to the last rank in 2019, unlike the previous year. Saudi Arabia, on the other hand, ranked in the middle (4th and 5th) by all years compared to other banks. As can be seen clearly in Figure 2, the financial performances of the countries did not follow a regular course; on the contrary, there was a volatile course. In this context, while the performance of Oman was in an increasing trend until 2019, there was a serious decrease in the last year. It was observed that there is an increasing trend in Saudi Arabia. Similarly, Turkey was entered an upward trend in the last three-year period in its financial performance.

5. Conclusion

In the study, it is aimed to calculate the financial performance scores of participation banks operating in Turkey, Bahrain, Saudi Arabia, United Arab Emirates, Oman, Kuwait and Qatar between the years 2016-2019 and to present a comparative report on the current situation of the banks. The study is important both in terms of determining the current financial performance of participation banks, which are the new trend of the banking sector in Turkey and increasing in number, and mutually evaluating the performances of banks in Turkey and the banks in the GCC member countries, which have a long history in participation banking, in the relevant years. In addition, it differs from the results of other studies by revealing the results of comparison with other countries. The financial data collected within the scope of the study were analyzed by TOPSIS method. Microsoft Excel was used for TOPSIS analysis. In the study, it was evaluated 26 banks totally including 5 banks from Turkey, 4 banks from Bahrain, 2 banks from Oman, 5 banks from Kuwait, 3 banks from Qatar, 4 banks from Saudi Arabia and 3 banks from UAE. Participation banks operating in Turkey were assessed primarily in themselves, and then the comparison was made with other countries on the basis of the country.

According to results, while Kuveyt Turk which operates in Turkey ranked the first in terms of general in the four-year process, Vakıf Katılım bank followed it in the second rank. This result differs from the results obtained by Alsu et al. (2018), Çağırın-Kendirli et al. (2019) and Esmer and Yağcı (2016). The main reason for this difference may be due to the differences in the period in which analyzes are made and the rates of performance determination used. While the performance of bank Türkiye Finans was observed to be at medium levels, it was determined that Ziraat Katılım bank, which had just started its activities in 2016, increased its performance. Contrary to these banks, it was found that Albaraka Turk Participation Bank ranked last in the performance ranking and its performance also tended to decline. While this result is similar to the study of Karakaya (2020), on the contrary, Alsu et al. (2018), Yayar and Baykara (2012) and Özgür (2008) found that Albaraka Turk Participation Bank is mostly in the first place in their studies. Since these studies covered the periods before 2015, the results may have differed. According to performance results between countries, Turkey's performance in the last 4-year period did not fall below 50 per cent and it was even seen to be in an increasing trend. For this reason, it was ranked in the top three in the performance ranking. It was observed that the financial performances of participation banks in Qatar and Oman followed a fluctuating course, and it was determined that Qatar has risen to the second rank in the performance ranking in recent years. UAE ranked first in the performance ranking. Although the UAE fell to the third rank in 2018, its financial performance did not decrease below 50 per cent. Oman made the biggest attack in 2018 and rose to the first rank. It was seen that the performances of participation banks in Saudi Arabia are also on an increasing trend, but when compared with other countries, they are in the last

place in terms of financial performance. It was determined that the country with the lowest financial performance of participation banks among countries is Bahrain. Its financial performance has not exceeded 40 percent in the last four years. It can be said that these increases and decreases in the financial performance of the countries are based on macroeconomic reasons. As in every sector, the banking sector is also affected by various variables such as economic fluctuations, political events in the country and diplomatic relations between countries. In this context, it can be said that as a result of the 2.1 percent growth experienced in 2018 in Oman, it moved its performance rank to the top. Similarly, it can be stated that the decrease in the performance value of Qatar in 2017 was due to the diplomatic problems faced by other GCC member countries with Qatar and the embargo imposed due to these problems. When it was looked at Turkey, it was seen that various factors such as serious economic fluctuations experienced in the country, a coup attempt experienced in 2016, the fluctuations in the exchange rates, arriving immigration due to the turmoil in its neighbor Syria, diplomatic disputes with other countries affect all sectors in the last four-year period. Although when the results of the analysis were examined, Turkey both increased its financial performance every year in its and maintained its rank in the ranking with other countries.

In the study, the financial performance of participation banks, which are the new trend of the banking industry and increasing in number, were determined and compared. The study provides very important findings for researchers and practitioners due to its nature. The obtained results provide both this to see what the situation in the last four-year period of participation banking in Turkey and other countries and allows countries to make comparisons between each other. It also sheds light on senior decision-makers working in this sector while evaluating their own banks and developing new policies. These performance outputs also constitute a reference for individual investors and savers. In the academic sense, evaluation of the financial performance between banks in Gulf Cooperation Council member countries with a long history in participation banking and the banks in Turkey mutually is made an important contribution in the literature and open a new window for researches who want to study on this subject.

There are some limitations in this study, as in every research. First, the study was restricted to the last four years due to the two banks (Vakıf Katılım ve Ziraat Katılım) that operates their activities in Turkey was started activities in 2015. Second, the data of six of the participation banks in other countries within the scope of the research could not be reached and not included in the study. Finally, among the banks operating in the member countries of the GCC, those showing both Islamic and conventional banks were not included in the study.

In future studies on this subject, studies can be conducted with the countries with banks operating according to participation banking principles in Europe. It may

also be useful to make comparisons with western countries rather than countries dominated by Islamic culture.

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