ÇOK KRİTERLİ KARAR VERME YAKLAŞIMI İLE TÜRKİYE'DE BANKA PERFORMANS DEĞERLEMESİ

A MULTICRITERIA DECISION FRAMEWORK FOR BANK PERFORMANCE EVALUATION IN TURKEY

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ABSTRACT

This study aims to measure financial performances of the banks based on profitability on Borsa Istanbul. The performance measurement was conducted between 2016 and 2020 by utilizing multi-criteria decision-making techniques. Within this context, the study examines the best evaluation criteria affecting the banks' profitability and determines the best performing bank traded on Borsa Istanbul. While the best evaluation criteria was detected by using Entropy Method, the best performing bank was detected by using Waspas Method. Earnings before tax margin, net profit margin, return on assets, return on equity, earnings per share growth, revenue growth, dividend yield were taken as financial performance evaluation criteria. The results indicate that while the evaluation criteria of dividend yield is determined as the most efficient criteria for banks, the bank with the best performance is Türkiye Sınai Kakınma Bankası on Borsa Istanbul.

Keywords: *Performance measurement, Bank, BIST 100 Index, Entropy weights, Waspas method.*

JEL Codes: *B23, G20, G21.*

ÖZ

Bu çalışmanın amacı Borsa İstanbul'da faaliyet gösteren bankaların karlılığa dayalı finansal performanslarını analiz etmektir. Performans ölçümü çok kriterli karar verme teknikleri kullanılarak 2016-2020 yılları arasında gerçekleştirilmiştir. Bu kapsamda, bankaların performansını etkileyen en önemli karlılık kriteri ve Borsa İstanbul'da faaliyet gösteren en iyi banka belirlenmektedir. Bankaların karlılığını etkileyen en önemli kriteri belirlemek için Entropi Yöntemi, performansı en yüksek bankayı belirlemek için ise Waspas Yöntemi kullanılmaktadır. Finansal performans değerlendirme kriteri olarak, vergi öncesi kar marjı, net kar marjı, aktif karlılık, özkaynak karlılığı, hisse başına kar büyüme oranı, net satış büyüme oranı, temettü verimi analize dahil edilmiştir. Araştırma sonuçları temettü veriminin Borsa İstanbul'da faaliyet gösteren bankalar için en iyi performans kriteri olduğunu, performansı en yüksek bankanın ise Türkiye Sinasi Kalkınma Bankası olduğunu göstermektedir.

Anahtar Kelimeler: *Performans Yönetimi, Banka, BIST 100 Endeksi, Entropi, Waspas Yöntemi.*

JEL Kodları: *B23, G20, G21.*

1. INTRODUCTION

Banks represent institutions of the financial market that allows the exchange of funds and the performance of banks operating in international markets affects the global economy. Therefore, it is important to estimate financial performance of the banks, in particular, for creditors, investors, borrowers and etc. in a highly competitive financial environment (Elsayed et al., 2017; Özkan, 2019). The evaluation of the banks' financial performance provides a possibility of benchmarking for financial institutions in this competitive finance world. However, to identify a most accurate performance evaluation criteria is critical and must be carefully selected in the evaluation process.

Even though studies mostly concentrate on evaluating the financial performance of the banks, a few academic studies focus specifically on banking profitability within the multicriteria decision framework. Therefore, the financial performance measurements are determined based on profitability, in this study. Profitability is one of the most important evaluation criteria for investors, because it indicates the success of a company's operations. The higher profitability, more effective business operations of an enterprise (Puspitaningtyas and Kurniawan, 2012; Husna and Desiyanti, 2016). Profitability ratios consist of seven categories in this study. Within this context, earnings before taxes (EBT) margin, net profit margin (NPM), return on assets (ROA), return on equity (ROE), earnings per share (EPS) growth, revenue growth and dividend yield are used to measure profitability of the banks.

EBT margin measures a company's economic and financial profitability. It is the ratio of profit before taxes to revenue from the sale of goods, works, services, expressed as a percentage (Barros et al., 2020). NPM is a ratio indicating a company's capability to make net profit after tax deduction. High NPM gives confidence to investors during their investment decisions (Husna and Desiyanti, 2016; Mahdi and Khaddafi, 2020). ROE is the net profit after tax divided by shareholders' equity and represents the earning performance of the bank based on the shareholders' stake. ROE, on the other hand, reflects how effectively a bank management is using shareholders' funds (Hassan and Bashir, 2006). ROA which is the net profit divided by total assets represents the earning performance of the bank based on the total assets. It also expresses the company's capability to make use of the bank's resources to increase profit (Spathis et al., 2002). EPS growth shows the amount of the company's net profit that is ready to be shared with the company's shareholders and illustrates the growth of earnings per share over time (Wet, 2013). It is accepted that profitability and revenue growth are interrelated and revenue growth positively affects profitability. Because, increase of revenue growth strengthens the company's productivity. As a consequence, sales' growth and profitability increase (Demirgunes and Ucler, 2015). On the other hand, bank loans are considered as one the main sources of revenue, and are considered to affect profit positively. If a company's profitability is high, dividends for investors are also expected to be paid more and regular. Consistently, Puspitaningtyas and Kurniawan (2012) emphasize that profitability has a positive effect on dividend yield. The dividend yield is a ratio pointing out the percentage of profit paid as dividend to shareholders (Hoang et al. 2020). Considering all these determinants, these criteria should be taken into account during the evauation process of banking profitability and efficiency in the financial world.

Within this context, this study aims to evaluate financial performances of nine banks traded on BIST 100 Index based on profitability covering the periods of 2016-2020. As suggested by Shannon (1948) and Zvadskas et al. (2012), multi-criteria decision-making techniques are utilized and while Entropy Method is used to find out the best profitability criteria affecting the banks' performance, Waspas Method is used to rank the banks traded on BIST 100 Index.

The rest of this paper is composed as follows: the literature review is summarized, at first. The data and the methodology employed in this paper are presented, then. The findings obtained are discussed in the conclusion part.

2. LITERATURE REVIEW

In the evaluation of banks' financial performance, many different methodologies are used. While financial ratio anaysis and CAMELS rating system are most commonly used for performance measurement by utilizing financial ratios, Data Envelopment Analysis (DEA) is conducted to investigate banks' performance in terms of efficiency. On the other hand, when a variety of alternatives and criteria, jointly, are taken into consideration, multi-criteria decision-making (MCDM) methods are frequently applied in the performance evaluation (Zvadskas et al., 2012).

Çetin and Bıtırak (2010) compared the performances of commercial banks and participation banks by using Analytic Hierarchy Process (AHP) as a MCDM methodology from 2005 to 2007. Based on the results, the commercial bank of Akbank and the participation bank of Bank Asya exhibited the best financial performances during the period.

Yayar and Baykara (2012) evaluated banks' efficiency and productivity in the 2005-2011 period in Turkey. TOPSIS method was conducted and accordingly, Albaraka Turk was found as the most efficient and Bank Asya was found as the most productive participation bank.

Karapinar and Doğan (2015) applied the CAMELS approach to evaluate the financial performances of participation and commercial banks within the period of 2006-2011. Accordingly, the participation banks exhibit better performance against market risk, by comparison with commercial banks. On the other hand, commercial banks' performance is higher in terms of liquidity and management.

Gümrah (2016) conducted an analysis on banks' performance evaluation in Turkey and Malaysia. Financial ratios were used as the evaluation factors and TOPSIS method was conducted during the period from 2010 to 2013. Based on the results, it was observed that participation banks operating in Turkey ranked as first three in the ranking performance.

Kandemir and Karataş (2016) examined financial performances of the 12 deposit banks traded on BIST. They conducted an analysis by utilizing Gray Relational Analysis, TOPSIS and VIKOR methods. According to GRA method, Vakıfbank exhibited highest financial performance while Şekerbank exhibited the lowest. These results were consistent with the results of TOPSİS analysis. However Denizbank has the highest financial performance and Tekstil Bank has the lowest based on VIKOR method.

Batir et al. (2017) analyzed efficiency of the banking system in Turkey by comparing the participation banks and conventional banks. Annual accounting data between 2005 and 2013 was used and Data Envelopment Analysis was conducted. The results state that participation banks perform more efficiently than conventional banks for each year.

Akçakanat et.al. (2017) tested the performances of the banks by utilizing Entropy and Waspas methods. Ziraat Bank as large sized bank, Finans Bank as medium sized bank and Anadou Bank as small sized bank were determined. Number of branches was the most important criteria for all kinf of banks in Turkey.

Elsayed et al. (2017) evaluated financial performances of the main banks in the Kingdom of Saudi Arabia. They conducted an analysis by using Entropy based TOPSIS method. Bank

Al-Bilad, Al-Inmaa Bank, Al-Rajhi Bank, and Riyad Bank were found as the best performing banks in the Kingdom of Saudi Arabia.

Benli et al. (2018) aimed to analyze financial performance of participation banks in Turkey. CAMELS rating system was conducted between the years 2010-2017 and accordingly, Albaraka Turk only performed well in 2014 and Kuwait Turk was seen to perform very poorly in 2015. Turkey Finance Participation Bank exhibited a positive performance during the analysis period.

Özkan (2019) analyzed the financial performance of the banks in Turkey through CAMELS rating system. Within this context, a comparative analysis was conducted by using the data of five participation banks between the years 2016-2018. As a conclusion, the banks with the best financial performance were found as Vakıf, Kuveyt Turk and Ziraat participation banks, respectively while the Turkey Finance and Albaraka Turk participation banks were the weakest performing banks during the period.

Yıldız (2019) aimed to compare the performances of the Participation 30 and Participation 50 indices developed in Turkey according to Islamic principles in the 2015-2017 period. The analysis was conducted using Entropy based TOPSIS method and according to the results, no significant difference was found in returns between the participation indices for each year. Additionally, the participation indices exhibited a higher performance than BIST 100.

Akyüz et al. (2020) measured the performance of banks in Turkey covering the years of 2013 and 2017. According to CAMELS analysis results, the scores of participation banks have decreased in general since 2015.

Yağlı (2020) compared the performance of state participation banks with the performance of private participation banks. At first, the performance indicators were determined by using CAMELS rating system, and then, Turkish participation banks were ranked according to their relative performance by using the TOPSIS method. The results show that state participation banks outperform private participation banks.

3. DATA & METHODOLOGY

Multi-criteria decision making (MCDM) methods are the most commonly used methods to make effective decisions between multiple alternatives (Elsayed et al., 2017). They conduct mathematical analysis including data obtained from the conflicting criteria and provide to select the most appropriate alternative in the evaluation process (Yılmaz et al., 2020).

The financial performance of the banks traded on BIST 100 Index was evaluated between 2016 and 2020 by using MCDM techniques, in this study. Banks included to the analysis are Yapı ve Kredi Bankası A.Ş. (YKBNK), Türkiye Garanti Bankası (GARAN), Türkiye Halk Bankası A.Ş. (HALKB), Şekerbank T.A.Ş. (SKBNK), Akbank T.A.Ş. (AKBNK), Türkiye İş Bankası A.Ş. (ISCTR), Türkiye Sınai Kalkınma Bankası A.Ş. (TSKB), Türkiye Vakıflar Bankası T.A.O. (VAKBN) and Albaraka Türk Katılım Bankası (ALBRK) in this study. As financial performance measurement criteria, earnings before tax (EBT) margin, net profit margin (NPM), return on assets (ROA), return on equity (ROE), earnings per share (EPS) growth, revenue growth, dividend yield are taken into consideration. Each criteria was averaged for all years before being used in the analysis due to the fact that measurement of long-term performance of the banks is stated as more accuracy. Entropy Method is conducted to determine the best performance criteria and Waspas Method is utilized to rank the banks.

3.1. Entropy Method

Entropy Method is used evaluate measurement criteria weights for the alternatives during the decision making process. To examine the objective weight of each criterion, the steps are organized, respectively, as follows (Wu et al., 2011):

a. In case of m alternatives and n evaluation criteria, a decision making matrix is constructed, at first:

$$\begin{pmatrix} x_{11} & x_{12} & ... & x_{1n} \\ x_{21} & x_{22} & ... & x_{2n} \\ ... & ... & ... & ... \\ x_{m1} & x_{m2} & ... & x_{mn} \end{pmatrix}$$

b. Constructed decision matrix is normalized, as expressed:

$$P_{ij} = \frac{x_{ij}}{\sum_{j=1}^{m} x_{ij}} \quad i=1,2,....,m \quad j=1,2,....,n \qquad (1)$$

where P_{ij} is normalized value, x_{ij} is the value of projection.

c. The entropy value (e_j) is estimated by the following formula:

$$e_j = -k \sum_{j=1}^{m} P_{ij} ln P_{ij} \qquad (2)$$

where k is the entropy constant and $0 \leq ej \leq 1$ is provided.

d. The degree of divergence for each criterion (dj) is measured by utilizing e_j, as follows:

$$dj = 1 - ej \qquad (3)$$

e. The objective weight for each criterion (w_j) is determined as expressed:

$$w_j = \frac{d_j}{\sum_{s=1}^{n} d_s} \quad j = 1,2,.....,n \qquad (4)$$

The highest entropy weight (w_j) points out the most efficient evaluation criterion (Wang and Lee, 2009).

3.2. Waspas Method

The Waspas Method is a combination of weighted sum model (WSM) and weighted product model (WPM) and a number of alternatives are evaluated and prioritized through this technique (Zvadskas et al., 2012; Chakraborty et al., 2014). To examine the optimal alternative utilizing Waspas Method, the steps are organized, respectively, as follows (Zvadskas et al., 2012; Chakraborty et al., 2014):

a. In case of m alternatives and n evaluation criteria, the decision making matrix is firtstly constructed, as in Entropy Method:

$$\begin{bmatrix} x_{11} & x_{12} & ... & x_{1n} \\ x_{21} & x_{22} & ... & x_{2n} \\ ... & ... & ... & ... \\ x_{m1} & x_{m2} & ... & x_{mn} \end{bmatrix}$$

b. The decision matrix is then normalized based on beneficial and non-benaficial criteria.

While the equation (5) refers to beneficial, the equation (6) refers to non-beneficial criteria.

$$\bar{x}_{ij} = \frac{x_{ij}}{max_i \ x_{ij}} \qquad i=1,2,\ldots,m \ \ j=1,2,\ldots,n \qquad (5)$$

$$\bar{x}_{ij} = \frac{min_i \ x_{ij}}{x_{ij}} \qquad i=1,2,\ldots,m \ \ j=1,2,\ldots,n \qquad (6)$$

c. The Weighted Sum Model is constructed and total relative importance of ith alternative is examined, as below:

$$Q_i^{(1)} = \sum_{j=1}^{n} \bar{x}_{ij} w_j \qquad (7)$$

d. The Weighted Product Model is then constructed and the total relative importance of ith alternative is expressed as follows:

$$Q_i^{(2)} = \prod_{j=1}^{n} (\bar{x}_{ij})^{w_j} \qquad (8)$$

e. A joint generalized criterion is developed to evaluate the total importance of ith alternative by the following equation:

$$Q_i = 0.5Q_i^{(1)} + 0.5Q_i^{(2)} \qquad (9)$$

f. A more generalized equation for determining the total relative importance of ith alternative is estimated as expressed:

$$Q_i = \lambda Q_i^{(1)} + (1-\lambda)Q_i^{(2)} \qquad \lambda = 0, 0.1,\ldots,1 \qquad (10)$$

The alternatives are ranked based on the Q_i values and the highest Q_i value points out the best alternative.

4. EMPIRICAL FINDINGS

Table 1 exhibits the constructed decision matrix comprised of nine banks and seven criteria measuring banking profitability between the years of 2016 and 2020.

Table 1: Constructed Decision Matrix

	EBT Margin	NPM	ROA	ROE	EPS Growth	Revenue Growth	Dividend Yield
YKBNK	22,17	17,14	1,15	11,58	16,27	16,51	0,5
GARAN	25,59	19,28	1,62	13,65	11,98	15,77	1,88
HALKB	19,96	16,15	0,76	10,14	9,75	31,4	0,93
SKBNK	2,94	2,11	0,16	2,01	8,66	7,19	0,01
AKBNK	31,93	27,87	1,62	13,01	11,69	17,25	1,91
ISCTR	23,11	18,36	1,43	12,57	14,85	17,51	2,48
TSKB	44,89	34,69	1,83	15,51	11,83	24,88	1,53
VAKBN	25,4	20,29	1,23	15,59	15,79	27,99	0,39
ALBRK	12,04	9,86	0,5	6,78	5,73	13,21	1,28

4.1. Entropy Results

The normalized decision matrix of nine banks and seven financial evaluation criteria is established based on the values presented on Table 1 and it is reported on Table 2.

Table 2: Normalized Decision Matrix

	EBT Margin	NPM	ROA	ROE	EPS Growth	Revenue Growth	Dividend Yield
YKBNK	0,1066	0,1034	0,1117	0,1148	0,1527	0,0962	0,0458
GARAN	0,1230	0,1163	0,1573	0,1354	0,1124	0,0918	0,1723
HALKB	0,0959	0,0974	0,0738	0,1006	0,0915	0,1829	0,0852
SKBNK	0,0141	0,0127	0,0155	0,0199	0,0813	0,0419	0,0009
AKBNK	0,1535	0,1681	0,1573	0,1290	0,1097	0,1005	0,1751
ISCTR	0,1111	0,1108	0,1388	0,1247	0,1394	0,1020	0,2273
TSKB	0,2158	0,2093	0,1777	0,1538	0,1110	0,1449	0,1402
VAKBN	0,1221	0,1224	0,1194	0,1546	0,1482	0,1630	0,0357
ALBRK	0,0579	0,0595	0,0485	0,0672	0,0538	0,0769	0,1173

After normalized the decision matrix, the entropy values, the degrees of divergence and objective weights were measured and all the values between the years of 2016 and 2020 are exhibited on Table 3.

Table 3: Entropy Values and Objective Weights

	EBT Margin	NPM	ROA	ROE	EPS Growth	Revenue Growth	Dividend Yield
e_j	0,9402	0,9390	0,9400	0,9603	0,9816	0,9669	0,8867
d_j	0,0598	0,0610	0,0600	0,0397	0,0184	0,0331	0,1133
w_j	0,1553	0,1584	0,1557	0,1030	0,0478	0,0858	**0,2940**

As seen from the Table 3, the best performance criteria affecting the banks' profitability was selected as Dividend Yield (0,2940), with the difference of more than 100% from the other criteria. It can also be resulted that NPM (0,1584), ROA (0,1557) and EBT Margin (0,1553) follow the amount of Dividend Yield, respectively, for the analysis period. Additionally, EPS Growth (0,0478) was determined as the least affecting criteria between the years of 2016 and 2020 based on the results reported on Table 3.

4.2. Waspas Results

The banks traded on BIST 100 Index were ranked based on their profitability performances through Waspas Method. The normalized decision matrix of nine banks and seven financial evaluation criteria is exhibited on Table 4.

Table 4: Normalized Decision Matrix

	EBT Margin	NPM	ROA	ROE	EPS Growth	Revenue Growth	Dividend Yield
YKBNK	0,4939	0,4941	0,6284	0,7428	1,0000	0,5258	0,2016
GARAN	0,5701	0,5558	0,8852	0,8756	0,7363	0,5022	0,7581
HALKB	0,4446	0,4656	0,4153	0,6504	0,5993	1,0000	0,3750
SKBNK	0,0655	0,0608	0,0874	0,1289	0,5323	0,2290	0,0040

	EBT Margin	NPM	ROA	ROE	EPS Growth	Revenue Growth	Dividend Yield
AKBNK	0,7113	0,8034	0,8852	0,8345	0,7185	0,5494	0,7702
ISCTR	0,5148	0,5293	0,7814	0,8063	0,9127	0,5576	1,0000
TSKB	1,0000	1,0000	1,0000	0,9949	0,7271	0,7924	0,6169
VAKBN	0,5658	0,5849	0,6721	1,0000	0,9705	0,8914	0,1573
ALBRK	0,2682	0,2842	0,2732	0,4349	0,3522	0,4207	0,5161

The total relative importance of the alternatives based on the weighted sum model (WSM) and weighted produt model (WPM) are reported on the Table 5 and Table 6, respectively.

Table 5: Normalized Weighted Matrix (WSM)

	EBT Margin	NPM	ROA	ROE	EPS Growth	Revenue Growth	Dividend Yield
YKBNK	0,0549	0,0549	0,0698	0,0825	0,1111	0,0584	0,0224
GARAN	0,0633	0,0618	0,0984	0,0973	0,0818	0,0558	0,0842
HALKB	0,0494	0,0517	0,0461	0,0723	0,0666	0,1111	0,0417
SKBNK	0,0073	0,0068	0,0097	0,0143	0,0591	0,0254	0,0004
AKBNK	0,0790	0,0893	0,0984	0,0927	0,0798	0,0610	0,0856
ISCTR	0,0572	0,0588	0,0868	0,0896	0,1014	0,0620	0,1111
TSKB	0,1111	0,1111	0,1111	0,1105	0,0808	0,0880	0,0685
VAKBN	0,0629	0,0650	0,0747	0,1111	0,1078	0,0990	0,0175
ALBRK	0,0298	0,0316	0,0304	0,0483	0,0391	0,0467	0,0573

Table 6 provides that TSKB is the best alternative based on the financials determined as performance evaluation criteria. It is followed by the AKBNK and ISCTR, respectively. SKBNK exhibits the worst performance with the lowest value of 0,13 based on the total importance of the alternatives (Q_i) and ALBRK follows it during the analysis period.

Table 6: Normalized Weighted Matrix (WPM)

	EBT Margin	NPM	ROA	ROE	EPS Growth	Revenue Growth	Dividend Yield	$Q_i^{(1)}$	$Q_i^{(2)}$	Q_i	
YKBNK	0,92	0,92	0,95	0,97	1,00	0,93	0,84	0,45	0,61	0,53	**6**
GARAN	0,94	0,94	0,99	0,99	0,97	0,93	0,97	0,54	0,74	0,64	**4**
HALKB	0,91	0,92	0,91	0,95	0,94	1,00	0,90	0,44	0,61	0,53	**7**
SKBNK	0,74	0,73	0,76	0,80	0,93	0,85	0,54	0,12	0,14	0,13	**9**
AKBNK	0,96	0,98	0,99	0,98	0,96	0,94	0,97	0,59	0,80	0,69	**2**
ISCTR	0,93	0,93	0,97	0,98	0,99	0,94	1,00	0,57	0,76	0,66	**3**
TSKB	1,00	1,00	1,00	1,00	0,97	0,97	0,95	0,68	0,89	0,79	**1**
VAKBN	0,94	0,94	0,96	1,00	1,00	0,99	0,81	0,54	0,68	0,61	**5**
ALBRK	0,86	0,87	0,87	0,91	0,89	0,91	0,93	0,28	0,45	0,36	**8**

A more generalized analysis for determining the total relative importance of the alternatives is conducted and the results are exhibited on Table 7. Table 7 shows the effect of varying values of λ on the performance scores and rankings of nine banks from 2016 to 2020. It is clearly seen from the table that the TSKB is the best alternative covering the years from 2016 to 2020. The bank with the worst performance is SKBNK, consistent with the values of the total importance of the alternatives. Thus, it can be said that the Waspas rankings of the banks traded in Turkey match the WSM rankings, consistent with the results of Chakraborty and Zavadskas (2014).

Table 7: Effect of λ on Ranking Performance

	λ = 0	λ = 0,1	λ = 0,2	λ = 0,3	λ = 0,4	λ = 0,5	λ = 0,6	λ = 0,7	λ = 0,8	λ = 0,9	λ = 1	
YKBNK	0,61	0,60	0,58	0,56	0,55	0,53	0,52	0,50	0,49	0,47	0,45	**6**
GARAN	0,74	0,72	0,70	0,68	0,66	0,64	0,62	0,60	0,58	0,56	0,54	**4**
HALKB	0,61	0,60	0,58	0,56	0,54	0,53	0,51	0,49	0,47	0,46	0,44	**7**
SKBNK	0,14	0,14	0,14	0,14	0,13	0,13	0,13	0,13	0,13	0,12	0,12	**9**
AKBNK	0,80	0,78	0,75	0,73	0,71	0,69	0,67	0,65	0,63	0,61	0,59	**2**
ISCTR	0,76	0,74	0,72	0,70	0,68	0,66	0,65	0,63	0,61	0,59	0,57	**3**
TSKB	0,89	0,87	0,85	0,83	0,81	0,79	0,77	0,74	0,72	0,70	0,68	**1**
VAKBN	0,68	0,66	0,65	0,64	0,62	0,61	0,59	0,58	0,57	0,55	0,54	**5**
ALBRK	0,45	0,43	0,41	0,40	0,38	0,36	0,35	0,33	0,32	0,30	0,28	**8**

5. DISCUSSION AND CONCLUSION

Banks represent institutions of the financial system of the countries, as they are of great importance to the global economy. The problems that occur in banking sector may also cause major problems facing the economy and the financial sector. Therefore, the developments in this sector should be regularly evaluated and the performance of the banks should be constantly analyzed.

In this study, the profitability performances of the banks traded on Borsa Istanbul were anayzed covering the years from 2016 to 2020 by using MCDM techniques. The banks' financials were used to enlighten the banking sector by revealing the developments in these years. Thus, as financial performance measurement indicators based on profitability, EBT margin, NPM, ROA, ROE, EPS growth, revenue growth and dividend yield ratios were taken into consideration.

To examine the best performance criteria affecting the banking profitability, at first, Entropy Method was used. Accordingly, while the criteria of dividend yield mostly affects the banking profitability, EPS growth affects at least.

Waspas Method was then used to rank the banks traded on BIST 100 Index based on their performances. The effect of parameter λ on the ranking performance was analyzed and, revealing the fact that different λ values almost do not affect the rankings of the best and the worst alternatives and the best performances were observed at higher λ values. When banks were ranked based on their performances, it can be said that the TSKB is the best alternative, exhibiting the most efficient performance. Additionally, the bank with the worst performance is SKBNK for the analysis period.

Even though studies mostly place the focus on financial performance measurement in the banking sector, a few academic studies focus specifically on banking profitability within

the multicriteria decision framework. Therefore, this study fills the gap in the field of banking profitability and strengthens the empirical frameworks of the earlier studies.

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