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Match Analysis of The 2023 FIBA Men's Basketball World Cup

2023 FIBA Erkekler Basketbol Dünya Kupası Müsabaka Analizi

Barış Keçeci[1] ,Öztürk Ağırbaş[2*]

*Correspondence:

Öztürk Ağırbaş

ozturkagirbas@artvin.edu.tr

[1]Artvin Çoruh Unıversıty, Graduate Educatıon Instıtude, Department Of Physıcal Education And Sports, Master's Program, Artvin, Türkiye
Bkececi14@gmail.com
Orcid: 0009-0008-9838-3180

[2]Artvin Çoruh Unıversıty, Faculty of Sport Sciences, Department Of Physıcal Education And Sports, Artvin, Türkiye
ozturkagirbas@artvin.edu.tr
orcid: 0000-0002-6185-024X

Abstract

This study aimed to examine the matches played during the 2023 FIBA Men's Basketball World Cup in terms of positive and negative performance indicators and to determine their influence on match outcomes. Adopting a descriptive research design, the study analysed 92 matches involving 32 national teams through document analysis. Data were obtained from the official FIBA database. The assumption of normality was assessed using skewness and kurtosis coefficients. Statistical analyses included descriptive statistics, independent-samples t-tests, one-way analysis of variance (ANOVA), Tukey's post hoc test, Pearson correlation analysis, and simple linear regression. Statistical significance was evaluated at $p < 0.05$ and $p < 0.01$. Significant differences favouring winning teams were observed across all positive performance indicators except offensive rebounds ($p < 0.05$). Among negative indicators, all variables except missed free throws and lost defensive rebounds were significantly higher in losing teams ($p < 0.05$). The greatest contributions to winning were associated with assists (67.3%), successful three-point field goals (57.1%), and fast-break points (52.9%). Conversely, opponent assists (45.3%), points conceded from three-point field goals (32.6%), and fast-break points conceded (28.0%) contributed most substantially to losing. Among the semifinalists, the United States demonstrated superior performance in blocks, fast-break points, and bench scoring, whereas Serbia excelled in selected defensive indicators. The findings indicate that basketball match outcomes are shaped by the combined influence of offensive and defensive performance rather than any single variable. Shooting efficiency, assists, and defensive rebounding emerged as key determinants of victory, whereas defensive deficiencies and turnovers were closely associated with defeat. These findings may provide valuable insights for coaches in tactical decision-making and performance evaluation.

Keywords: Basketball, FIBA, Match Analysis, World Cup.

Öz

Bu araştırmanın amacı, 2023 FIBA Erkekler Basketbol Dünya Kupası'nda oynanan karşılaşmaları olumlu ve olumsuz performans göstergeleri açısından incelemek ve bu göstergelerin maç sonuçları üzerindeki etkilerini belirlemektir. Betimsel araştırma deseninde gerçekleştirilen çalışmada, turnuvaya katılan 32 millî takımın oynadığı 92 karşılaşma doküman analizi yöntemiyle incelenmiştir. Veriler FIBA'nın resmî veri tabanından elde edilmiştir. Normal dağılım varsayımı çarpıklık ve basıklık katsayılarıyla değerlendirilmiş; analizlerde tanımlayıcı istatistikler, bağımsız örneklemler t-testi, tek yönlü varyans analizi (ANOVA), Tukey testi, Pearson korelasyon ve basit doğrusal regresyon analizleri kullanılmıştır. Anlamlılık düzeyi $p<0,05$ ve $p<0,01$ olarak kabul edilmiştir. Kazanan ve kaybeden takımlar arasında, kazanılan hücum ribaundları dışında tüm olumlu performans göstergelerinde kazanan takımlar lehine anlamlı farklılıklar belirlenmiştir ($p<0,05$). Olumsuz göstergelerde ise kaçırılan serbest atışlar ve kaybedilen savunma ribaundları dışındaki değişkenler kaybeden takımlarda anlamlı düzeyde yüksek bulunmuştur ($p<0,05$). Galibiyete en fazla katkı sağlayan değişkenler asistler (%67,3), başarılı üç sayılık atışlar (%57,1) ve hızlı hücum sayıları (%52,9) olurken, mağlubiyete en fazla katkı sağlayan değişkenler rakip asistleri (%45,3), üç sayılık atışlardan yenilen sayılar (%32,6) ve hızlı hücumlardan yenilen sayılar (%28,0) olmuştur. Yarı finalistler arasında Amerika Birleşik Devletleri blok, hızlı hücum ve yedek oyuncu sayılarında; Sırbistan ise belirli savunma göstergelerinde öne çıkmıştır. Araştırma, basketbolda maç sonuçlarının tek bir değişkenden ziyade hücum ve savunma performanslarının ortak etkisiyle şekillendiğini göstermektedir. Şut isabetliliği, asistler ve savunma ribaundları galibiyette; savunma yetersizlikleri ve top kayıpları ise mağlubiyette belirleyici göstergeler olarak öne çıkmıştır. Bulguların, antrenörlerin taktiksel karar verme ve performans değerlendirme süreçlerine katkı sağlayabileceği düşünülmektedir.

Anahtar Kelimeler: Basketbol, FIBA, Maç Analizi, Dünya Kupası.

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INTRODUCTION

Basketball

Basketball is one of the modern sports that originated in the West, has become popular worldwide and has spread rapidly (Yıldız, 2002:591). It is played between two teams, each consisting of five players. Each team may have a maximum of 12 players, including substitutes. The aim of the game is shooting the ball into the opponent's basket succesfull and preventing the ball from being scored in one's own basket. The team with the highest score at the end of the game wins. Basketball is played on a court which is unobstructed and hard-surfaced. The court measures 28 metres in length and 15 metres in width. In basketball, the ball weight and hoop height vary according to age group. The height of the basket (for adults) is 3.05 metres, and the diameter of the hoop is 45 cm. The ball specifications for adults are a weight of 567–650 grams, a diameter of 24 cm, and a circumference of 75–78 cm. The ideal pressure is 0.51–0.59 bar (TBF 2026).

International Basketball Federation (FIBA)

The International Basketball Federation (FIBA- In French: Fédération Internationale de Basketball Association), is the highest governing body of world basketball. FIBA is responsible for the management of interntional basketball tournaments. It was known previously as the Fédération Internationale de Basketball Amateur, then the word 'Amateur' was removed from its formal name in 1989 but kept the same acronym. FIBA sets the international basketball rules, determines the features for equipment and places, regulates the transfer of players between countries, and control the schedules of international referees. There are 213 national basketball federations as members of FIBA. FIBA is divided into five continental zones as Africa, America, Asia, Europe and Oceania since 1989. FIBA was established in Geneva in 1932 under the guidance of its founding members: Argentina, Czechoslovakia, Greece, Italy, Latvia, Portugal, Romania and Switzerland. It was officially recognized by the International Olympic Committee two years later. During the 1936 Summer Olympics in Berlin, the federation declared James Naismith who is the founder of basketball as its Honorary President (web-1). FIBA organizes the Men's World Championship since 1950 and the Women's World Championship since 1953. Both championships are held every four yeras, alternately with the Summer Olympic Games.

Match Analysis in Sports

Match analysis is a process that involves the use of high-level technological tools to explain on the basis of concrete data, all factors impacting the performance of one's own or the opponent's team during a match; it also involves the collection, statistially processing, expert assessment and conclusion of this data, and it is one of the significant factors in team success (Bostancı, 2016). Player selection is a complicated process and, especially in team sports, must be conducted with caution and based on specific qualities. Data obtained from match analysis supports coaches' intuitive conclusions, thereby enabling them to make objective decisions (Tiryaki Sönmez, 2003).

Match analysis is a systematic process used in sports sciences to evaluate, interpret, and improve performance based on objective criteria (Hughes & Franks, 2004). In basketball, match analysis is conducted before, during, and after competitions, with each stage serving a distinct and important purpose. Pre-match analysis focuses on evaluating opponents, including their team structure and the tactical systems implemented by the coach, thereby contributing significantly to match preparation. Such analyses also play a crucial role in identifying and minimizing the potential threats posed by individually talented players.

During the match, analysis provides immediate support for decision-making by identifying unexpected situations and detecting weaknesses or deficiencies in offensive and defensive performance. This enables coaches and support staff to make timely interventions, which can be critical in determining the outcome of the game.

Finally, post-match analysis is essential for identifying positive and negative performance indicators and determining the extent to which these parameters influence game outcomes. By evaluating these factors, coaches and researchers can gain valuable insights into performance determinants and develop strategies for future improvement.

MATERIAL AND METHOD

Purpose of the Study

In this study, it is aimed to analyse all matches of the 2023 FIBA Men's Basketball World Cup in accordance with various positive and negative values, and to identify the effect of these factors on whether a match is won or lost.

Research Method

In this study, the document analysis method is used from descriptive research methods. In document analysis, the research process consists of collecting, analysing, evaluating data obtained from official or private written resources in printed and electronic (computer based and internet accessible) materials (Çepni, 2007; Bowen, 2009; Ekiz, 2015; Yıldırım ve Şimşek, 2018).

Research Group

The study consists of 32 countries that took part in the 2023 FIBA Men's Basketball World Cup which was hosted by the Phillippines, Japan and Indonesia (Table 1), and 92 matches played during the organization in total (WEB-1, 2025).

Tablo 1. Countries participating in the 2023 FIBA Men's Basketball World Cup, categorized by their continent.

Continent	Country	Continent	Country
Africa	Angola	Asia and Oceania	Australia
	Ivory Coast		China
	South Sudan		Philippines
	Egypt		Iran
	Cape Verde		Japan
			Lebanon
			Jordan
			New Zealand
America (7)	United States of America	Europe	Germany
	Brazil		Finland
	Dominican Republic		France
	Canada		Georgia
	Mexico		Spain
	Puerto Rico		Italy
	Venezuela		Montenegro
			Latvia
			Lithuania
			Serbia
			Slovenia
			Greece

In total, 32 countries participated in the finals of the competition, including 5 countries from Africa, 7 from America, 8 from Asia and Oceania , and 12 countries from Europe.

Limitations of the Study

This study is limited to;

- the sport of basketball,
- the 2023 FIBA Men's Basketball World Cup Final Matches,
- and the selected positive and negative figures.

Data Collection Process

The data of the 2023 FIBA Men's Basketball World Cup was collected from statistical information shared openly on FIBA's official tournament website (WEB-1, 2025). The data obtained were analysed by Türker and Agırbas (2022) as positive and negative values like their match analysis of the 2019 FIBA Men's Basketball World Cup. In total, there were 35 categories consisting of 16 positive and 19 negative values, and they were classified as follows for analysis:

Positive Values: Number of successful 2 point shots, number of successful 3 point shots, number of successful free throws, offensive rebounds gained, defensive rebounds gained, balls stolen from the opponent, assists leading to points, opponent turnovers, blocks, fouls committed by the opponent, points scored off turnovers, points scored on fast breaks, points scored on second chance opportunities, points scored in the painted area, points scored by bench players, and the total number of points scored.

Negative Values: Number of missed 2-point shots, number of missed 3-point shots, number of missed free throws, offensive rebounds conceded, defensive rebounds lost, stolen balls by the opponent, number of assists leading to opponent points, number of turnovers, number of blocks by the opponent, fouls committed against the opponent, points conceded from turnovers, points conceded on fast breaks, points conceded on second chance opportunities, points conceded in the painted area, points conceded by the bench, number of points conceded from two-point shots, number of points conceded from 3-point shots, number of points conceded from free throws, and the total number of points conceded.

Data Analysis

Data collected from the official FIBA website was firstly transferred to Microsoft Office Professional Plus 2016 Excel programme and the necessary arrangements were made. Then, comparative analyses were carried out using the IPM SPSS 27 programme. Analyses of normality for data from 92 matches were determined on the basis of Skewness and Kurtosis values (Table 2). As these values are within the range of ±1.5 determined by Tabachnick and Fidell (2013), the descriptive statistics (minimum, maximum, avarage and standard deviation) of the winning and losing teams were calculated; an Independent Samples T-test was used to compare positive and negative values of them. Besides, to compare the positive and negative values of the final four teams in the semifinals (Germany, the United States, Canada and Serbia), a One-Way ANOVA was used, and Tukey's tests were used to detect differences between the groups. Moreover, a Pearson correlation test was applied to determine whether there was a relationship between positive values of the winning team and the total number of points scored, and between the negative values of the losing teams and the total number of points conceded. A simple regression analysis was also performed for each parameter to detect the most effective predictors of positive and negative values. The results of the competitions were interpreted at significance levels of $p<.01$ ve $p<.05$.

Tablo 2. Normality Analysis of Positive and Negative Value Data from the 2023 Men's Basketball World Cup Matches

Plus/Minus Value Type	n	Winning Team		Losing Team	
		Skewness	Kurtosis	Skewness	Kurtosis
Number of 2-point shots made	92	0,40	0,33	0,28	0,38
Number of 3-point shots made	92	0,13	-0,59	0,58	0,25
Number of free throws made	92	0,08	-0,20	0,28	-0,55
Offensive rebounds gained	92	0,69	0,41	1,02	1,46
Defensive rebounds gained	92	0,48	1,06	-0,27	0,61
Steals from opponents	92	0,32	-0,34	-0,01	-0,20
Assists gained	92	0,62	1,22	0,48	0,33
Turnovers by opponents	92	0,15	-0,24	-0,07	0,19
Blocks by opponents	92	0,50	-0,08	0,74	0,61
Fouls by opponents	92	-0,04	-0,49	-0,08	-0,82
Points gained from turnovers	92	0,64	0,86	-0,10	-0,35
Points gained from fast breaks	92	0,67	-0,22	0,62	0,63
Points gained from second chances	92	0,15	-0,14	0,46	0,06
Points gained from the paint	92	0,51	0,78	-0,19	-0,28
Points gained from the bench	92	0,25	-0,10	-0,03	-0,65
Points Scored	92	0,436	0,543	1,051	1,207
Number of missed 2-point shots	92	0,56	0,24	0,35	-0,23
Number of missed 3-point shots	92	0,31	-0,25	0,40	0,20
None of missed free throws	92	0,39	-0,25	0,85	0,47
Offensive rebounds lost	92	0,35	1,18	0,48	1,06
Defensive rebounds lost	92	0,90	1,48	0,92	1,13
Steals from opponents	92	0,23	0,25	0,33	-0,36
Assists gained from opponents	92	0,44	0,14	0,62	1,22
Turnovers lost	92	0,00	0,34	0,16	-0,24
Blocks gained from opponents	92	0,79	0,66	0,50	-0,08
Fouls by opponents	92	-0,09	-0,88	-0,04	-0,49
Points conceded from turnovers	92	-0,10	-0,35	0,64	0,86
Points conceded from fast breaks	92	0,62	0,63	0,67	-0,22
Points conceded from second chances Points conceded	92	0,46	0,06	0,15	-0,14
Points conceded in the painted area	92	-0,19	-0,28	0,51	0,78
Points conceded from the bench	92	-0,03	-0,65	0,25	-0,10
Number of points conceded from 2-point shots	92	0,28	0,38	0,40	0,33
Number of points conceded from 3-point shots	92	0,58	0,25	0,13	-0,59
Number of points conceded from free throws	92	0,28	-0,55	0,08	-0,2
Points conceded	92	1,051	1,207	0,436	0,544

When the Table 2 is examined, it can be seen that all kurtosis and skewness values fall within the range of ±1,5.

RESULTS

Tablo 3. Descriptive Statistical Analyses of Positive and Negative Values for Winning and Losing Teams in the 2023 Men's Basketball World Cup.

Plus/Minus Value Type	n	Winning Team				Losing Team			
		Min	Maks.	X	Ss	Min.	Maks.	X	Ss
Number of 2-point shots made	92	12	36	21,6	4,85	8	32	18,77	4,1
Number of 3-point shots made	92	3	20	11,01	3,66	2	17	8,44	3,05
Number of free throws made	92	2	30	16,57	5,68	2	27	13,27	5,5
Offensive rebounds gained	92	4	23	11,23	3,93	3	25	11,29	4,42
Defensive rebounds gained	92	15	43	27,7	4,74	7	33	22,17	4,76
Steals from opponents	92	2	15	7,73	2,95	0	13	6,72	2,63
Assists gained	92	10	44	22,94	5,63	10	29	18,16	3,88
Turnovers by opponents	92	5	23	14,3	3,84	3	22	12,57	3,61
Blocks by opponents	92	0	9	3,2	1,93	0	7	2,4	1,49
Fouls by opponents	92	13	29	21,2	3,71	9	27	19	4,31
Points gained from turnovers	92	5	41	18,89	6,79	0	29	14,15	5,73
Points gained from fast breaks	92	2	34	13,82	7,63	0	28	10,04	5,54
Points gained from second chances	92	0	25	12,47	5,2	0	22	9,77	4,68
Points gained from the paint	92	18	70	38,55	10,03	10	48	32,08	8,24
Points gained from the bench	92	5	68	34,79	12,84	4	49	26,58	11,07
Points Scored	92	69	128	92,83	11,61	55	118	76,15	11,10
Number of missed 2-point shots	92	6	32	15,16	4,98	8	30	18,45	4,84
Number of missed 3-point shots	92	9	29	17,33	4,32	10	31	19,11	4,33
None of missed free throws	92	0	11	5,07	2,64	0	13	4,83	2,85
Offensive rebounds lost	92	10	39	22,73	4,65	15	43	27,7	4,74
Defensive rebounds lost	92	3	25	10,92	3,98	4	26	11,4	4,22
Steals from opponents	92	0	15	6,78	2,74	2	15	7,72	2,96
Assists gained from opponents	92	10	29	18,23	3,94	10	44	22,94	5,63
Turnovers lost	92	3	22	12,58	3,5	5	23	14,3	3,84
Blocks gained from opponents	92	0	7	2,46	1,57	0	9	3,2	1,93
Fouls committed by opponents	92	9	27	19,09	4,32	13	29	21,2	3,71
Points conceded from turnovers	92	0	29	14,15	5,73	5	41	18,89	6,79
Points conceded from fast breaks	92	0	28	10,04	5,54	2	34	13,82	7,63
Points conceded from second chances Points	92	0	22	9,77	4,68	0	25	12,47	5,2
Points conceded in the painted area	92	10	48	32,08	8,24	18	70	38,54	10,03
Points conceded from the bench	92	4	49	26,58	11,07	5	68	34,79	12,84
Number of points conceded from 2-point shots	92		32	18,77	4,1	12	36	21,6	4,85
Number of points conceded from 3-point shots	92	2	17	8,44	3,05	3	20	11,01	3,66
Number of points conceded from free throws	92	2	27	13,27	5,5	2	30	16,57	5,68
Points Conceded	92	55	118	76,15	11,10	69	128	92,83	11,61

An examination of Table 3 reveals that winning teams achieved higher mean values than losing teams in successful two-point field goals (21.60±4.85), three-point field goals (11.01±3.66), assists (22.94±5.63), and defensive rebounds (27.70±4.74). Winning teams also demonstrated superior performance in fast-break points (13.82±7.63), points scored from turnovers (18.89±6.79), and bench scoring (34.79±12.84). Conversely, losing teams recorded higher averages in missed two-point and three-point field goals and turnovers.

The mean total points scored were 92.83±11.61 for winning teams and 76.15±11.10 for losing teams. Overall, these findings indicate that winning teams exhibited more favourable performance profiles, particularly in offensive efficiency, assist production, and defensive rebounding.

Tablo 4. Comparison of Added Values in the 2023 FIBA Men's Basketball World Cup Competitions

Added Value	Group	n	X	Ss.	t	p
Number of 2-point shots made	Winner	92	21,61	4,85	4,279	,000**
	Loser	92	18,71	4,11		
Number of 3-point shots made	Winner	92	11,01	3,67	5,157	,000**
	Loser	92	8,45	3,05		
Number of free throws made	Winner	92	16,57	5,69	4,003	,000**
	Loser	92	13,27	5,51		
Offensive rebounds earned	Winner	92	11,24	3,93	-0,088	,930
	Loser	92	11,29	4,42		
Defensive rebounds earned	Winner	92	27,71	4,74	7,896	,000**
	Loser	92	22,17	4,76		
Steals from opponents	Winner	92	7,74	2,95	2,451	,015*
	Loser	92	6,73	2,63		
Points gained from assists	Winner	92	22,95	5,63	6,707	,000**
	Loser	92	18,16	3,88		
Turnovers by opponents	Winner	92	14,30	3,85	3,140	,002**
	Loser	92	12,58	3,61		
Blocks by opponents	Winner	92	3,21	1,93	3,158	,002**
	Loser	92	2,40	1,50		
Fouls committed by opponents	Winner	92	21,21	3,72	3,716	,000**
	Loser	92	19,00	4,31		
Points gained from turnovers	Winner	92	18,89	6,79	5,114	,000**
	Loser	92	14,15	5,73		
Points gained from fast breaks	Winner	92	13,83	7,63	3,846	,000**
	Loser	92	10,04	5,57		
Points gained from second chances	Winner	92	12,48	5,21	3,705	,000**
	Loser	92	9,77	4,69		
Points gained from the paint	Winner	92	38,55	10,03	4,778	,000**
	Loser	92	32,09	8,24		
Points gained from the bench	Winner	92	34,79	12,85	4,642	,000**
	Loser	92	26,59	11,07		
Points Scored	Winner	92	92,83	11,61	9,957	,000**
	Loser	92	76,15	11,10		

**p<.01; *p<.05

When Table 4. is examined, and the 92 matches in the 2023 Men's Basketball World Cup are evaluated in terms of positive values for the winning and losing teams, no statistically significant difference is observed in the number of offensive rebounds (p>.05), besides statistically significant differences in favour of the winning teams are detected in all other parameters.

Tablo 5. Comparison of Negative Performances in the 2023 FIBA Men's Basketball World Cup Matches

Negative Values	Group	n	X	Ss.	t	p
Number of missed 2-point shots	Winner	92	15,16	4,99	-4,545	,000**
	Loser	92	18,46	4,84		
Number of missed 3-point shots	Winner	92	17,34	4,32	-2,792	,006**
	Loser	92	19,12	4,34		
Number of missed free throws	Winner	92	5,08	2,64	0,590	,556
	Loser	92	4,84	2,85		
Offensive rebounds lost	Winner	92	22,74	4,66	-7,168	,000**
	Loser	92	27,71	4,74		
Defensive rebounds lost	Winner	92	10,92	3,98	-0,790	,430
	Loser	92	11,40	4,22		
Steals by opponent	Winner	92	6,78	2,75	-2,245	,026*
	Loser	92	7,73	2,96		
Number of assists leading to points by opponent	Winner	92	18,24	3,94	-6,568	,000**
	Loser	92	22,95	5,63		
Number of turnovers	Winner	92	12,59	3,51	-3,163	,002**
	Loser	92	14,30	3,85		
Number of blocks by opponent	Winner	92	2,47	1,57	-2,848	,005**
	Loser	92	3,21	1,93		
Fouls committed against opponent	Winner	92	19,10	4,3	-3,544	,001**
	Loser	92	21,21	3,72		
Points conceded from turnovers	Winner	92	14,15	5,73	-5,114	,000**
	Loser	92	18,89	6,79		
Points conceded from fast breaks	Winner	92	10,04	5,54	-3,846	,000**
	Loser	92	13,83	7,63		
Points conceded from second chances	Winner	92	9,77	4,69	-3,705	,000**
	Loser	92	12,48	5,21		
Points conceded in the paint	Winner	92	32,09	8,24	-4,769	,000**
	Loser	92	38,54	10,03		
Points conceded from the bench	Winner	92	26,59	11,07	-4,642	,000**
	Loser	92	34,79	12,85		
Number of points conceded from 2-point shots	Winner	92	18,77	4,11	-4,279	,000**
	Loser	92	21,61	4,85		
Number of points conceded from 3-point shots	Winner	92	8,45	3,05	-5,157	,000**
	Loser	92	11,01	3,67		
Number of points conceded from free throws	Winner	92	13,27	5,51	-4,003	,000**
	Loser	92	16,58	5,69		
Points Conceded	Winner	92	76,15	11,10	9,957	,000**
Negative Values	Loser	92	92,83	11,61		

**p<.01; *p<.05

When Table 5 is examined, and the 92 matches in the 2023 Men's Basketball World Cup are evaluated in terms of negative values for the winning and losing teams, no statistically significant difference is observed in terms of the number of missed free throws and defensive rebounds (p<.05), besides all other parameters show statistically significant differences in favour of the losing teams.

Tablo 6. Correlation and Regression Analyses of the Added Values of Winning Teams in the 2023 FIBA Men's Basketball World Cup Matches Based on Total Points Scored in the Matches

Added Value Type		Correlation (Numbers Thrown)		regression
		r	p	R^2
Number of 2-point shots made	92	,479	**,000****	**,229**
Number of 3-point shots made	92	,571	**,000****	**,326**
Number of free throws made	92	0,121	,252	,015
Offensive rebounds earned	92	-0,023	,827	,001
Defensive rebounds earned	92	0,022	,838	,000
Steals from opponents	92	0,182	,082	,033
Assists earned	92	,673	**,000****	**,453**
Turnovers by opponents	92	0,155	,140	,024
Blocks against opponents	92	0,092	,381	,009
Fouls committed by opponents	92	-0,012	,908	,000
Points gained from turnovers	92	,462	**,000****	**,213**
Points gained from fast breaks	92	,529	**,000****	**,280**
Points gained from second chances	92	,230	**,027***	**,053**
Points gained from the paint	92	,420	**,000****	**,176**
Points gained from the bench	92	,366	**,000****	**,134**

**p<.01; *p<.05

An examination of Table 6 indicates that there are significant relationships between the points scored by the winning teams and their positive-negative values, the number of successful 2-point shots, the number of successful 3-points shots, the number of points gained from assists, points scored off ball losses, points scored on fast breaks, points gained from second chance attempts, points gained from the painted area, and points scored by substitutes. In terms of the percentage effect on winning, the three most significant variables are the number of assists leading to points (67.3%), the number of successful 3-point shots (57.1%) and points scored from fast breaks (52.9%).

Tablo 7. Correlation and Regression Analyses of Negative Values of Losing Teams with Total Points Scored in the 2023 FIBA Men's Basketball World Cup Matches

Negative Value Type		Correlation (Updated Issues)		Regression
		r	p	R^2
Number of missed 2-point shots	92	-0,014	,894	,000
Number of missed 3-point shots	92	-0,097	,357	,009
Number of missed free throws	92	0,049	,646	,002
Offensive rebounds lost	92	0,022	,838	,000
Defensive rebounds lost	92	-0,061	,561	,004
Steals by opponent	92	0,176	,093	,031
Assists by opponent that led to points	92	,673	**,000****	**,453**
Turnovers	92	0,155	,140	,024
Blocks by opponent	92	0,092	,381	,009
Fouls committed against opponent	92	-0,012	,908	,000
Points conceded from turnovers	92	,462	**,000****	**,213**
Points conceded from fast breaks	92	,529	**,000****	**,280**
Points conceded from second chances	92	,230	**,027***	**,053**
Points conceded in the paint	92	,419	**,000****	**,176**
Points conceded from the bench	92	,366	**,000****	**,134**
Points conceded from 2-point shots	92	,479	**,000****	**,229**
Points conceded from 3-point shots	92	,571	**,000****	**,326**
Points conceded from free throws	92	0,121	,252	,015

**p<.01; *p<.05

However, an examination of Table 7 shows that the number of goals conceded by the losing teams, the number of assists leading to points scored bu the rival team, goals conceded from ball losses, points conceded from fast breaks, points conceded from second-chance attempts, points conceded in the painted area, goals conceded off the bench, the number of goals conceded from 2-point shots, and the number of points conceded from 3-point shots. In terms of the percentage influence on losses, the three most significant factors are the number of assists leading to the rival team's points (45.3%), the number of points conceded from 3-point shots (32.6%), and points conceded from fast breaks (28%).

Tablo 8. Comparison of the Added Values of the 2023 FIBA Men's Basketball World Cup Semi-Finalists

Additional Values	1	2	3	4	F	p	Tukey
	Germany (n=8)	Serbia (n=8)	Canada (n=8)	USA (n=8)			
Number of 2-point shots made	22,13±5,41	23,75±6,52	21±5,71	26,5±3,74	1,542	,226	-
Number of 3-point shots made	11,38±4,63	10±3,34	12,75±3,69	10,25±3,45	0,868	,469	-
Number of free throws made	14,63±4,53	17,63±5,24	18,75±6,14	20,75±5,75	1,765	,177	-
Offensive rebounds earned	10,5±2,45	8,63±2,2	12±3,16	9,88±4,09	1,678	,194	-
Defensive rebounds earned	25,63±5,83	25,5±4,47	24,63±4,72	29,75±8,97	1,074	,376	-
Steals from opponents	8,13±2,7	9,13±2,36	7,63±3,34	9±3,07	0,493	,690	-
Assists earned	22,5±8,37	23,63±7,46	22,25±10,35	23,88±3,23	0,086	,967	-
Turnovers by opponents	13,25±3,28	15,88±3,27	14,75±4,13	16,38±4,98	0,970	,421	-
Blocks against opponents	2,13±1,36	2,88±1,13	2,38±1,51	5,38±1,92	7,845	,001**	4>1,2,3
Fouls committed by opponents	17,88±2,9	21,75±2,82	22,75±4,27	22,25±2,55	3,860	,020*	1<3,4
Points gained from turnovers	18,75±6,48	22,13±8,43	19,75±10,78	22±5,78	0,342	,795	-
Points gained from fast breaks	11,75±5,31	19,75±7,36	15,13±6,71	25,38±5,9	6,889	,001**	4>1,3
Points gained from second chances	15,13±6,51	10,88±3,8	13±4,57	9,75±6,27	1,545	,225	-
Points gained from the paint	38,75±11,51	44,5±13,08	36,38±11,08	43,5±6,48	1,019	,399	-
Points gained from the bench	34,88±12,68	38,63±12,39	26,38±17,82	48,5±9,06	3,771	,022*	4>3
Points scored	93,00±12,04	95,12±14,83	99,00±20,56	104,50±10,04	,917	,445	-

**p<.01; *p<.05

When the Table 8 is examined, and the positive values derived from the 8 matches played by the countries that finished in the top four of the 2023 Men's Basketball World Cup are compared among themselves (Table 8); it is clear that the United States has an advantage over the other semi-finalists –Germany, Serbia, and Canada- regarding to the number of blocks made againts rivals. In the sub-category of fouls made by opponents, the German team suffered fewer fouls compared to Canada and United States. In terms of points gained from fast breaks, the United States team obtained more points than the German and Canadian teams. It was also noted that the United States team was superior to the Canadian team in points scored from the bench.

Tablo 9. Comparison of the Negative Aspects of the 2023 FIBA Men's Basketball World Cup Semi-Finalists

Negative Values	1	2	3	4			
	Germany (n=8)	Serbia (n=8)	Canada (n=8)	USA (n=8)	F	p	Tukey
Number of missed 2-point shots	13,5±4,72	12±3,21	14,75±4,43	16,5±4	1,708	,188	-
Number of missed 3-point shots	18,5±4	16,5±4,07	18,88±4,64	15,38±3,34	1,351	,278	-
Number of missed free throws	3,88±3	4,88±1,46	5,38±2,72	5,38±2,77	0,610	,614	-
Offensive rebounds lost	22,25±4,95	20,75±4,33	22,75±6,39	23,63±4,03	0,463	,710	-
Defensive rebounds lost	8,38±1,77	9,38±2,39	10,38±3,07	12,25±5,57	1,774	,175	-
Steals by opponent	7±2,88	5,75±2,19	7,13±2,3	7±2,33	0,566	,642	-
Assists by opponent that led to points	18,75±3,11	18,5±2,93	19,25±4,71	20,25±6,39	0,236	,871	-
Turnovers	11,25±2,31	11,75±2,71	11,75±2,43	13,88±3,64	1,372	,272	-
Blocks by opponent	2,88±1,13	1,5±0,53	2,63±1,51	2,38±1,41	1,974	,141	-
Fouls committed against opponent	18,5±3,34	17,63±3,89	19,88±4,42	18,13±4,45	0,454	,717	-
Points conceded from turnovers	11,5±6,12	14,13±3,56	14,88±6,85	16,25±4,92	1,051	,386	-
Points conceded from fast breaks	12,75±7,52	9,75±3,85	7,75±5,78	10,88±6,33	0,968	,422	-
Points conceded from second chances	8,75±2,49	8,75±3,58	10,75±5,26	13,5±8,05	1,451	,249	-
Points conceded from the paint	33,25±5,44	27±4,78	37,5±7,62	37,25±8,75	4,114	,015*	2<3,4
Points conceded from the bench	30,63±13,47	23±10,42	30,63±9,29	29,38±15,41	0,695	,563	-
Points conceded from 2-point shots	19,13±3,52	16,25±2,25	21,38±5,71	22,5±4,72	3,367	,032*	2<4
Points conceded from 3-point shots	9,25±2,55	10,5±2,62	9±3,02	9,63±4,5	0,322	,809	-
Points conceded from free throws	12,88±5,08	13,13±5,87	13,88±5,79	13,75±6,16	0,57	,982	-
Points Conceded	78,86±14,19	77,12±7,88	83,63±17,28	87,63±25,24	,602	,619	-

**p<.01; *p<.05

When the Table 3.7 is examined, it is obviously seen that, in terms of goals conceded from the painted area, the Serbian team conceded fewer points than the Canadian and US teams. Moreover, upon analyzing the parameter for points conceded from 2-point shots, it was concluded that the Serbian team conceded fewer 2-point shots than the US team.

DISCUSSION AND CONCLUSION

In this study, the matches played at the 2023 FIBA Men's Basketball World Cup were examined in terms of selected positive and negative values for the winning and losing teams, and the findings were assessed by comparing them with the limited number of other studies in the literature. The results of analysis demonstrate that basic performance indicators determining the outcome of matches in modern basketball show a high degree of resemblance.

In the study, according to the findings of the 2023 World Cup, statistically significant differences were observed in favour of the winning teams in terms of positive factors such as the number of successful 2-point and 3-point shots, successful free throws, defensive rebounds gained, the number of assists, the number of steals, blocks and points scored off turnovers (Table 6). However, no significant difference was observed in the offensive rebounds variable (Table 6). This finding is parallel to the results from the 2019 FIBA Men's Basketball World Cup, indicating that offensive rebounds are not a decisive factor alone in determining the winner of a game.

In addition, when the negative values were examined in the results of this study, significant differences were observed to the disadvantage of the losing teams in terms of

2-point missed shots, defensive rebounds conceded, points lost from turnovers, fast breaks, the painted area, second-chance opportunities and points scored by the bench of opponents (Table 7). Particularly, the avarage total number of goals lost is significantly higher for the losing teams clearly demonstrates the critical role of defensive performance in the outcome of the match. These findings are similar to those from the 2019 World Cup which showed that losing teams experienced more problems in defensive related negative values.

When both of the organisations are considered together, it can be concluded that factors enhancing offensive efficiency, such as the number of assists, 3-point shooting accuracy and the contribution of the bench, are crucial in securing victories, while defensive rebounds, controlling turnovers and defensive transition play a vital role in preventing defeat. The significant differences in points scored and conceded by players who came off the bench at the 2023 World Cup emphasise the growing importance of team depth and the quality of rotation in today's basketball.

In conclusion, it has been noted that the results of matches at the 2023 FIBA Men's Basketball World Cup do not rely on a single parameter; instead, both positive and negative values collectively affect the outcome of a match. While the winning teams' superiority in shooting perentage, assist organisation and defensive rebounds brought them victory, the losing teams'defensive weaknesses and turnovers were among the primary causes of their defeats. These findings highlight important points for coaches and performance analysists, both during match preparation and during matches. They emphasise the need of a holistic approach that focuses on both offense and defense, and provide a crucial reference for future tournament analyses.

- The same study could be conducted for the Women's Basketball World Cup.
- A comparison between the World Cup and the EuroLeague could be carried out by examining the whole EuroLeague season.
- This study includes the important factors in today's basketball. By providing this information to youth coaches, the key areas they should focus on with their players can be identified.
- By analysing basketball matches played in past years, it is possible to identify which factors have changed in the sport to date and which parameters are now more significant in winning matches.
- The use of technological analysis methods could be spread by providing training to clubs in our country.

Kısaltmalar / Abbreviations

FIBA — Fédération Internationale de Basketball

TBF — Türkiye Basketball Federation

SPSS — Statistical Package for the Social Sciences

Beyanlar / Declarations

Etik Onay ve Katılım Onayı / Ethics approval and consent to participate

Bu çalışmanın hazırlanma ve yazım sürecinde "Yükseköğretim Kurumları Bilimsel Araştırma ve Yayın Etiği Yönergesi" kapsamında bilimsel, etik ve alıntı kurallarına uyulmuştur. Toplanan veriler üzerinde herhangi bir tahrifat yapılmamış ve bu çalışma başka bir akademik yayın ortamına değerlendirilmek üzere gönderilmemiştir. Makale ile ilgili doğabilecek her türlü etik ihlal durumunda sorumluluk yazarlara aittir.

During the preparation and writing of this study, scientific, ethical, and citation rules were followed in accordance with the "Higher Education Institutions Scientific Research and Publication Ethics Guidelines." No alterations were made to the collected data, and this study has not been submitted to any other academic publication platform for evaluation. The authors accept full responsibility for any potential ethical violations related to this manuscript.

Veri Ve Materyal Erişilebilirliği / Availability of data and material

Bu çalışmanın bulgularını destekleyen veriler, makul talepler üzerine sorumlu yazardan temin edilebilir. Veri seti yalnızca akademik amaçlar için erişilebilir olacak ve verilerin herhangi bir kullanımı, orijinal çalışmayı referans gösterecek ve katılımcıların gizliliğini koruyacaktır.

The data that support the findings of this study are available from the corresponding author upon reasonable request. The dataset will be accessible only for academic purposes, and any use of the data will recognize the original study and maintain the confdentiality of the participants.

Çıkar Çatışması / Competing interests

Yazarlar, bu makalede sunulan çalışmayı etkileyebilecek herhangi bir çıkar çatışması veya kişisel ilişkiye sahip olmadıklarını beyan etmektedirler.

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Yazar Katkıları / Authors' Contribution Statement

Çalışmanın tasarımı ve planlanması, veri toplama, analizi ve yorumlanması, makalenin yazımı, veri düzenleme, yöntem belirleme, yazım – özgün taslak ile yazım – gözden geçirme ve düzenleme süreçlerine eşit katkı sağlamıştır. Tüm yazarlar makalenin önemli noktalarını eleştirel bir şekilde gözden geçirmiş ve makalenin son hâlini onaylamıştır.

Contributed equally to the design and planning of the study, data collection, analysis and interpretation, manuscript preparation, data organization, methodology development, writing of the original draft, and review and editing of the manuscript. All authors critically reviewed the manuscript and approved the final version of the article.

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