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Match performance difference between African and Top Five teams in the group stage of the 2022 World Cup

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Abstract

Introduction. The analysis of technical performance in soccer helps to identify the most important variables that distinguish successful teams from their unsuccessful counterparts. Aim of Study. This study aimed to determine the difference in the match performance between the African national teams and the Top Five teams in the group stage of the 2022 World Cup. Material and Methods. Data were collected from the Whoscored website for five African national teams (Morocco, Senegal, Ghana, Cameron, and Tunisia) and five successful teams in the tournament (Argentina, France, Croatia, Brazil, and England). Independent t-test was used to compare match statistics between the African teams and the Top Five teams, while the effect size (ES) was used to find determine the magnitude of differences between the groups in those statistics. Results. The results showed that the Top Five teams outperformed the African teams in total shots ($p < 0.05$; ES = 1.47), shots on target ($p < 0.01$; ES = 2.68), and shooting from open play ($p < 0.05$; ES = 1.46), possession ($p < 0.001$; ES = 3.95), total passes ($p < 0.001$; ES = 5.90), passing accuracy ($p < 0.001$; ES = 5.35), short passes ($p < 0.001$; ES = 6.17), long ball accuracy ($p < 0.05$; ES = 2.08), and key passes ($p < 0.05$; ES = 1.53). In contrast, the African teams played more long balls (54.20 ± 6.61 vs 44.00 ± 8.71; ES = –1.31), committed many fouls ($p < 0.05$; ES = –1.84), made more clearances ($p < 0.001$; ES = –4.30) and saves by goalkeepers ($p < 0.05$; ES = –2.02), and received more yellow cards ($p < 0.01$; ES = –2.21) than their Top Five counterparts. Conclusions. In conclusion, the technical performance of the Top Five teams during the 2022 World Cup was better than the performance of the African teams, especially concerning passing and shooting variables. Therefore, this study can give African coaches an indication of the technical requirements for success in the upcoming World Cup.

KEYWORDS: key performance indicators, possession play, goal scoring, international soccer, African football, World Cup.

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Introduction

Soccer is the most popular sport in the world with about 270 million participants worldwide. It is a sport that is organized and developed by the Fédération Internationale de Football Association (FIFA), which was founded in 1904. The World Cup is an international tournament organized by FIFA every four years since its first edition in 1934, in which 32 national teams from six continental zones participate after passing the qualifying rounds [27]. In the World Cup, 13 teams from the Union of European Football Associations (UEFA), 5 teams from the Confederation of African Football (CAF), and 4 or 5 from the Asian Football Confederation (AFC) participate, with 4 or 5 teams from the South American Football Confederation (CONMEBOL), 3 or 4 teams from the Confederation of North, Central America and Caribbean Association Football (CONCACAF), and 0 or 1 from the Oceania Football Confederation (OFC), in addition to the Hosts [7]. These teams are divided into 8 groups with 4 teams in each group. After playing 3 matches for each team, the first and second of each

group qualify for the knockout stages, which are represented in the round of 16, the quarter-finals, the semi-finals, the ranking match (third-place), and then the final [27].

In every edition of the World Cup, 5 African national teams out of 54 teams participate after passing the qualifying stage. Most of these teams have many good players in their squads who play in major European leagues (English Premier League, La Liga, Bundesliga, Serie A, and French Ligue 1), in addition to local players [1]. Despite this fact, no African national team has ever won the World Cup [26], and their best achievements is the Cameroon national team reaching the quarter-finals of the 1990 World Cup, Senegal in 2002, and Ghana in the 2010 edition in South Africa [1]. Perhaps the most prominent achievement is the Moroccan national team reaching the semi-finals of the World Cup 2022 to become the most successful African side in World Cup history.

On the other hand, 13 European national teams are participating in the tournament out of 55 teams, while 4 or 5 teams from South America are participating out of 34 teams. These teams have dominated the tournament since the first in Uruguay in 1930. The European teams won 12 titles, while the South American teams won 10 titles. This dominance may be due to several geographical, cultural, and economic factors. As Jamil [12] proved that players differ in terms of physical abilities and technical skills from one country to another, and he concluded that European and South American players perform better movements related to passing and shooting than African players. This may confirm the difference in the playing styles that the coaches follow in proportion to the abilities and characteristics of their players [16]. In the five major leagues in Europe, the playing style varies between fast and direct play, possession, and counter-attacks, depending on the physical fitness and morphological of the players such as the English Premier League, or depending on the technical quality of the players, such as the Spanish League (La Liga) [24]. It should be noted here that many studies in recent years have proven that variables related to possession of the ball, passing, and successful shooting are the main factors for success in soccer [13].

Playing styles can evolve and change [12], and the evolving of the idea of soccer in Germany more towards the technical development of the players is an example of that trend [9]. This development requires good quality training and huge training facilities and equipment. This leads us to the economic factor, since sport represents in European countries a good percentage of the countries' gross domestic product (GDP). These countries work to develop soccer and various social and economic activities related to it, unlike African countries that lack professionalism and the availability of facilities and equipment that help the player reach his best potential [2].

Match-related technical performance is among good indicators that may explain the success or failure of teams in the World Cup tournament. Many studies have analyzed the match performance of successful and unsuccessful teams in this tournament. It has been shown that the winning teams in 2002, 2006, and 2010 World Cups had more shots on target and possession of the ball than the losing or drawing teams [5]. In recent editions, Liu et al. [21] showed that successful teams in the 2014 World Cup had a greater number of shots, shots on target, shots from counterattacks, shots from inside the penalty area, ball possession, short passes, average pass streak, aerial advantage, and tackles than unsuccessful teams. Kubayi and Larkin [14] also showed that the teams that qualified from the group stage to the knockout stage in the 2018 World Cup made a great number of shots on target, total passes, accurate passes, medium passes, and ball possession than eliminated teams.

Analyzing technical performance by collecting match statistics and comparing teams can help determine the success factors of the European and South American national teams in the World Cup, as well as help to know the level of performance of African teams that did not win the tournament compared to the most successful teams in the last World Cup in 2022. For this purpose the main aim of this study was to determine differences in match technical performance between the Top Five and African national teams in the group stage of 2022 World Cup.

Material and Methods

Sample

Because the number of matches between African teams and the Top Five teams in the world is not equal, given the advanced stages reached by the Top Five, the study sample included soccer matches for African national teams and the Top Five teams in the group stage of the FIFA World Cup 2022 in Qatar, where the number of matches was 15 for African teams, and 15 matches for the Top Five teams. The number of African teams was 5 teams (n = 5), which is the number allocated to African teams by FIFA to participate in the World Cup, and these teams were represented by Morocco, Senegal, Cameroon, Tunisia, and Ghana. For the Top Five teams (n = 5), they were chosen according to the stage they reached in the tournament (World Cup 2022), and they

were represented by the teams that reached the semi--finals and the final, which are Argentina, France, and Croatia, while the other 2 teams were chosen as they reached the quarter-finals in addition to the previous teams. These teams were Netherlands, Brazil, Portugal, and England, and given the FIFA classification of international teams, Brazil and England were chosen to complete the number of the Top Five teams (Argentina, France, Croatia, Brazil, and England).

Data and reliability

Match statistics for previous teams were collected from the international Whoscored website (www.whoscored.com), which is specialized in providing accurate statistics for players and teams that play in international leagues and tournaments through its use of the Opta system. Data were collected from this site, especially after Liu et al. [22] demonstrated that the Opta system is a reliable tracking system to collect match statistics (intra-class correlation coefficients: 0.88-1.00; standardized typical error: 0.00-0.37). It was used in several previous studies on the analysis of soccer matches in La Liga [20], the UEFA Champions League [29], and the FIFA World Cup [14, 21]. The current study followed the Helsinki declaration [28].

Match performance variables

Twenty-five variables expressing the technical performance of soccer matches were selected. These indicators were distributed into 3 groups represented by 7 variables related to attacking and scoring, 10 variables related to passing and organizing, and 8 variables related to defending. These variables were selected through previous studies [19, 20, 21, 29] with the addition or deletion of some variables that serve or do not serve the current study. Table 1 shows the various variables chosen in this study.

Table 1. Match performance indicators included in the study

Groups	Variables
Attacking and goal scoring	total shots; shots on target; shots from open play; shots from counter attack; goal efficiency (goals × 100/total shots); dispossessed and offside
Passing and organizing	possession (%); total passes; pass accuracy (%); short passes; long balls; long balls accuracy (%); crosses; through balls; key passes and successful dribbles
Defending	tackles; interceptions; fouls; clearances; shots blocked; total saves; yellow card, and red card

Statistical analysis

After collecting data from the Whoscored website, statistics were arranged in Microsoft Excel 2021 (Excel 2021, Microsoft, Washington, USA), and then transferred to SPSS v26 (SPSS 26, IBM, Armonk, USA) for statistical analysis. All data were expressed as mean ± standard deviation (SD). Student's t-test was used for two independent samples to compare match statistics between African teams and the Top Five teams. The significance level was considered to be $p \leq 0.05$. For more accurate results, the effect size (ES) was used to find out the magnitude of differences between groups in all variables. ES values were estimated as described by Hopkins et al. [10], based on the smallest worthwhile change (SWC) and the standardized difference in ES (90% CI), as trivial (<0.20), small (0.20-0.59), moderate (0.60-1.19), large (1.20-2.00), and very large (>2.00).

Results

Table 2 shows the difference between the match technical performance between the African teams and the Top Five teams during the group stage of the FIFA World Cup Qatar 2022.

Regarding the variables related to attacking and goal scoring, significant differences were obtained in total shots ($p < 0.05$; ES = 1.47), shots on target ($p < 0.01$; ES = 2.68), and shooting from open play ($p < 0.05$; ES = 1.46) in favor of the Top Five teams. The results also revealed that there were no significant differences in shooting from counterattack ($p > 0.05$; ES = 0.39), goal efficiency ($p > 0.05$; ES = 0.00), dispossessed ($p > 0.05$; ES = –0.44), and offside ($p > 0.05$; ES = 0.18). For the variables related to passing and organizing, there are significant differences in possession ($p < 0.001$; ES = 3.95), total passes ($p < 0.001$; ES = 5.90), passing accuracy ($p < 0.001$; ES = 5.35), short passes ($p < 0.001$; ES = 6.17), long ball accuracy ($p < 0.05$; ES = 2.08), and key passes ($p < 0.05$; ES = 1.53) in favor of the Top Five teams, while there were no significant differences in long balls ($p > 0.05$; ES = –1.31), crosses ($p > 0.05$; ES = 0.83), through balls ($p > 0.05$; ES = 0.95), and successful dribbles ($p > 0.05$; ES = –0.17).

Finally, significant differences were obtained in some defense-related variables, represented in fouls ($p < 0.05$; ES = –1.84), clearances ($p < 0.001$; ES = –4.30), total saves ($p < 0.05$; ES = –2.02), and yellow card ($p < 0.01$, ES = –2.21) in favor of African teams. As for the other variables, there were no significant differences between the African teams and the Top Five teams, and these variables are the number of tackles ($p > 0.05$; ES = –0.01), interceptions ($p > 0.05$; ES = –0.61), shots

Table 2. Differences in match performance variables between African and Top Five national teams in the 2022 FIFA World Cup

Variable	Top Five teams (mean ± SD)	African teams (mean ± SD)	Sig	ES
Variables related to attacking and goal scoring				
Total shots	14.80 ± 3.78	10.14 ± 2.37	0.048*	1.47 (large)
Shots on target	6.08 ± 0.72	3.60 ± 1.09	0.003**	2.68 (very large)
Shots from open play	10.06 ± 2.31	7.07 ± 1.72	0.046*	1.46 (large)
Shots from counterattack	0.52 ± 0.67	0.32 ± 0.24	0.550	0.39 (small)
Goal efficiency	12.94 ± 6.44	12.94 ± 6.30	0.999	0.00 (trivial)
Dispossessed	9.24 ± 1.92	10.52 ± 3.58	0.502	–0.44 (small)
Offside	2.06 ± 1.30	1.86 ± 0.82	0.780	0.18 (trivial)
Variables related to passing and organizing				
Possession (%)	61.04 ± 5.52	42.16 ± 3.90	0.000***	3.95 (very large)
Total passes	604.72 ± 51.89	377.22 ± 16.66	0.000***	5.90 (very large)
Pass accuracy (%)	87.30 ± 1.36	79.08 ± 1.69	0.000***	5.35 (very large)
Short passes	565.40 ± 52.76	327.40 ± 13.63	0.000***	6.17 (very large)
Long balls	44.00 ± 8.71	54.20 ± 6.61	0.071	–1.31 (large)
Long balls accuracy (%)	55.02 ± 6.96	43.05 ± 4.21	0.011*	2.08 (large)
Crosses	19.80 ± 2.86	16.40 ± 5.02	0.225	0.83 (large)
Through balls	1.60 ± 0.54	1.00 ± 0.70	0.172	0.95 (large)
Key passes	11.14 ± 3.20	7.20 ± 1.70	0.041*	1.53 (large)
Successful dribbles	7.14 ± 1.57	7.40 ± 1.35	0.787	–0.17 (trivial)
Variables related to defending				
Tackles	17.14 ± 6.00	17.20 ± 4.82	0.987	–0.01 (trivial)
Interceptions	7.88 ± 2.50	9.50 ± 2.77	0.361	–0.61 (moderate)
Fouls	9.21 ± 2.41	13.20 ± 1.89	0.018*	–1.84 (large)
Clearances	12.74 ± 2.68	24.66 ± 2.86	0.000***	–4.30 (very large)
Shots blocked	2.74 ± 1.23	2.68 ± 1.23	0.941	0.04 (trivial)
Total saves	1.00 ± 0.62	2.66 ± 0.98	0.013*	–2.02 (very large)
Yellow card	0.54 ± 0.39	1.82 ± 0.72	0.008**	–2.21 (very large)
Red card	0.00 ± 0.00	0.06 ± 0.13	0.347	–0.65 (moderate)

Note: SD – standard deviation, Sig – significant, ES – effect size
* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

blocked ($p > 0.05$; ES = 0.04), and red card ($p > 0.05$; ES = –0.65).

Discussion

The purpose of this study was to determine the difference in the match technical performance in the group stage of the World Cup 2022 between the African and the Top Five national teams. The main findings of the current study indicated that there were statistically significant differences in favor of the Top Five teams in some variables related to attack and goal scoring represented in total shots, number of shots on target, and shots from

open play, as well as in some variables related to passing and organizing (possession of the ball, total passes, number of short passes, passing accuracy, long ball accuracy, and number of key passes), while statistically significant differences were found in favor of African teams in some defense-related variables represented in fouls, clearances, total saves, and yellow cards.

Variables related to attacking and goal scoring

Regarding these variables, significant differences were obtained in total shots ($p < 0.05$; ES = 1.47), shots on target ($p < 0.01$; ES = 2.68), and shooting from open play ($p < 0.05$; ES = 1.46). This means that the Top Five teams performed more offensively than the African teams and created more chances to score goals, which is similar to previous findings. Kubayi and Toriola [15] found that European teams had more shots and more shots on target than the African teams during the 2018 World Cup. These results are also consistent with the findings of many previous studies, where the successful teams outperformed the unsuccessful teams in the number of shots and shots on target in various tournaments and leagues, which are represented in the FIFA World Cup [5, 14, 21], the UEFA Champions League [6, 18, 23], La Liga [20]. Thus, the results of this study are added to the studies that consider that creating many opportunities for shooting and shots on target is one of the most important factors for success in football matches.

While results related to shots from counterattacks indicate that both the African and the Top Five teams performed similarly, this differed from what Lepschy et al. [19] found. Thus, shooting from counterattack was a success factor for teams participating in World Cup 2014 and 2018.

For another attacking and goal scoring variable, which was previously shown by Yue et al. [30] that goal efficiency (quality of shot) is more important than the number of shots in Bundesliga matches, the current study showed that both African and the Top Five teams are similar in goal efficiency (12.94 ± 6.44 vs 12.94 ± 6.30).

As for the offside and dispossessed variables, there is no difference between the African and the Top Five teams in these variables. These results are consistent with previous findings [14] and differed from what Jamil found, as the African players recorded more offside and dispossessed than European players [12].

Variables related to passing and organizing

The results associated with these variables showed that there were significant differences in possession of the ball ($p < 0.001$; ES = 3.95), total passes ($p < 0.001$; ES = 5.90), passing accuracy ($p < 0.001$; ES = 5.35), short passes ($p < 0.001$; ES = 6.17), long ball accuracy ($p < 0.05$; ES = 2.08), and key passes ($p < 0.05$; ES = 1.53) in favor of the Top Five national teams. This is similar to what was previously found, as European teams outperformed African teams in these variables in the 2018 World Cup [14]. Jamil [12] found through a study of the most skilled players in the world that European and South American players are more efficient at passing actions than African players. This is confirmed by this study, as the percentage of successful passes for African teams is significantly lower compared to the Top Five teams.

Generally, these variables were one of the most important factors for successful teams in the FIFA World Cup [14, 21], UEFA Champions League [29], and Spanish Professional Soccer League [17].

It was previously reported maintaining the ball for a long time and playing many successful passes helps teams organize the attack, enter to the final third and creates many scoring opportunities [3, 8, 11, 21]. This is evident in the current study, where the Top Five teams created more scoring opportunities than their African counterparts. In contrast, the African teams had more long balls than the Top Five teams (54.20 ± 6.61 vs 44.00 ± 8.71; ES = –1.31), and this is what makes them lose possession [25]. These results are similar to previous findings, where African teams play more long balls than European teams [15]. Kubayi and Larkin [14] also found that eliminated teams in the group stage of the 2022 World Cup had more long balls compared to teams that qualified for the knockout stages.

Regarding the number of crosses and through balls, this study indicates that the Top Five teams did more crosses and through balls than African teams (19.80 ± ± 2.86 vs 16.40 ± 5.02; ES = 0.83; and 1.60 ± 0.54 vs 1.00 ± 0.70; ES = 0.95; respectively), which is inconsistent with previous findings in the FIFA World Cup 2014 and 2018, where crosses had a significant negative effect for winning the matches [19].

It was previously reported that successful dribbles were not an important factor in the success of the teams [14, 20], and this was confirmed by the current study, where successful dribbling was similar for both African and the Top Five teams.

Variables related to defending

Results show that the African teams made more fouls ($p < 0.05$; ES = –1.84), clearances ($p < 0.001$; ES = –4.30), total saves ($p < 0.05$; ES = –2.02), and received more yellow cards ($p < 0.01$; ES = –2.21) than the Top Five teams. However, there are no significant differences

in tackles, interceptions, shots blocked, and red cards. These findings are consistent with previous literature, as Kubayi and Toriola [15] showed that African teams made more fouls and received more yellow card than European teams in the 2018 World Cup.

Generally, unsuccessful teams often commit more fouls and make more clearances and receive more yellow cards than successful teams [14, 29]. This may affect the performance of the players, as receiving yellow cards leads to a decrease in the players' defensive level due to their fear of receiving a second yellow card [21].

For variables of clearances and total saves, Lepschy et al. [19] found that clearance is a key factor to success in the 2014 and 2018 World Cups. Andrzejewski et al. [3] showed that goalkeeper saves also are important to success in the German Bundesliga. However these variables also reflect the reception of many opportunities to score goals.

Limitations and future research

In this study, several technical performance indicators were studied, but not all variables were addressed. In addition, only one factor of the various factors on which a soccer match depends was investigated. While soccer does not depend on the technical aspect only, its performance is controlled by several other factors represented in the physical, tactical, psychological, and external factors such as humidity, altitude, and field condition [4]; therefore, this study may be a starting point for other studies to look in depth on the multiple causes that lead to the failure of African national teams to win the World Cup.

Also, in the current study, data were collected from the group stage only and one World Cup (2022 edition). Therefore, future studies can collect data for the last four or five editions of the World Cup for African teams and the five best teams in each edition. This is what many studies have done in terms of the difference between successful and unsuccessful teams in the World Cup. Castellano et al. [5] collected data from the 2002, 2006, and 2010 World Cup editions, while Lepschy et al. [19] studied the success factors of the teams for two editions, 2014 and 2018.

Conclusion

The results of the current study indicate that the Top Five teams are superior to African teams in terms of possession of the ball, number of passes, number of short passes, passing accuracy, key passes, the accuracy of long balls, number of shots, shooting on target and shooting from open play. In contrast, the African teams played more long balls, committed a lot of fouls, made more clearances and saves by goalkeepers, and received more yellow cards than their Top Five counterparts. It is due to that fact that African teams concede more goal scoring chances, make more fouls, play more long balls (mostly inaccurately) and create fewer goal scoring chances compared to more successful teams. These results indicate that African teams should evaluate their current performance, rethink their playing style and improve their technical and tactical work. Therefore, if the African teams perform similarly to the performance of the Top Five teams, they could have great chances to pass the group stage and reach the final rounds of the upcoming World Cup.

Conflict of Interest

The author declares no conflict of interest.

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