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## **Comparative study of goals scoring pattern between the 2019 African cup of nations held in Egypt and the 2022 African cup of nations held in Cameroun.**

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### **Abstract:**

The aim of this study was to record and evaluate the characteristics of successful pattern of goals scored during the 2022 African cup of nations held in Cameroun compared the 2019 African cup of nations held in Egypt. The examination of 46 games was conducted with the aid of video-analysis' software Nacsport scout plus. The statistical analysis was conducted with the non-parametric chi-square test. Results showed that there are no statically significant differences between goals scoring frequency per 45 minutes ( $X^2= 0.316$   $p>0.05$ ). There is a statistically significant difference in scoring from counter attack ( $X^2=0.000$   $p<0.05$ ). there is a statically significant difference in scoring from the inside of goal area ( $X^2=0.03$ ,  $p<0.05$ ), and from header ( $X^2=0.01$ ,  $p<0.05$ ). The present results allow coach to know the latest strategies in soccer and goals scoring pattern in the international tournaments and gain valuable information that help him to improve their team offence performance and also defense performance.

**Keywords:** soccer; match analysis; African cup of nations; goals scoring.

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#### **1. INTRODUCTION**

African cup of nations is one of the most popular sporting events in the world and Africa, drawing millions of television viewers every tournament. twenty-four nations compete for the title every two years. in the recent years, the Africans teams has been shown a remarkable development in physical, technical, tactical and psychological aspects as a result of conducting various researches and studies and building training operations on the basis of science and the use of proper planning in the preparation of teams, and this is demonstrated by the teams participating in the African cup of nation with a huge volume of motor activity and speed in performance and high accuracy in the implementation of offensive strategies.

In soccer the main goal of each team participating in the championship is only to win, and that can only be achieved by the attack and Soccer match analysis is one of the most important means that drive tactic training process forward and develop it, because it is an effective means to increase the level of performance by identifying the negatives and positive aspects of the team's performance through insightful vision. As coaches are prone to making subjective judgments and may be unable to recall events reliably, they are increasingly turning to match analysis as a way of optimizing the training process of their players and teams (Hughes, 2004) Informed study and conscious observation of all the secrets of different individual and collective activities to identify weaknesses and strengths. In this way, it creates a perception of the nature of the performance of the team and the ability to compare the level between the teams, or team comparison to itself, or compare several teams with other teams participating in different tournaments, Scientific progress has contributed to raising the level of sports, and perhaps the excellence and superiority that appears from the developed world is the result of the knowledge and information reached by workers in this field, in addition to the experiences gained in scientific and training application, research and scientific experiments that greatly affect the sports level and its return from during sports competitions (baffa abdellah, zemam aberrahim., 2022).

Soccer match analysis is vital in soccer if the individual/team is to be successful. For many soccer coaches the information gained from performances will not only



form the basis of weekly training schedules, but also may act as the primary source for the scheduling of seasonal plans (Carling et al., 2005). given the importance of analysis in football and its role in determining the effort and weakness of team's performance, offensive performance was analyzed in many previous studies (Thomas et al., 2017; Lago-Peñaset al., 2010; Ruscello, 2009; Sie, 2015), as well African cup of nation was a rich topic that studied in many previous times.

Analysis of the match in football fills the gap between theory and training. It can be used by coaches, sports researchers and soccer match analyzer, as well as can be used such as a feed back to the players to improve the playing strategies and athletic ability. Tactical activity analysis allows the use of quantitative and qualitative data to guide specific training. The effect of this training adapted to these features allows indicative of the tactical and capabilities of the players during the match (Hamici Abdennour , Mahmood Fakhro., 2022).

Given the importance of goals to determine the winner, this study therefore aimed at quantify and analyzing the scoring goals pattern in the 33<sup>th</sup> African cup of nation held in Cameroun compared to the 32<sup>th</sup> African cup of nation held in Egypt and deriving some updates that coaches need to focus in training and games and to prepare their teams for the international tournaments and competitions.

## **2.METHODS AND MATERIALS**

### **2.1. Sample :**

The sample was the all games of the four (4) teams who reached the semifinal stage on each tournament (**Annex 1**).

- AFCON 2019 (Algeria, Senegal, Nigeria, Tunisia)
- AFCON 2022 (Senegal, Egypt, Cameroun, Burkina Faso)

#### **2.1.1.sample details:**

Twenty-three (23) soccer games from the 2019 African cup of nations held in Egypt, and twenty-three (23) soccer games from the 2022 African cup of nations held in Cameroun.

### **2.2. Materials**

The examination of all games of the semifinal's teams participates in the African cup of nation 2019 held in Egypt and African cup of nation 2022 held in Cameroun from group stage to the finals with total of 46 games was conducted



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with the aid of video-analysis' software Nacsport scout plus.

#### 2.3. Design and Procedure:

Every goal has been analyzed by two experienced observers who were specially trained for the accurate and reliable data recording.

#### 2.4. The analysis variables were:

No	Variables	Description	Reference
01	Goals time	Number of goals scored in each half without including the goals scored in the extra time 1. First half 2. Second half	(Sponsor, 2007)
02	Area from which the goal was scored	1. Goal area. 2. Penalty area 3. Outside the penalty area	(Njororai, 2013) (Vasilis Armatas et al., 2007a)
03	Type of the offense that ended with a goalscoring	1. Set play. 2. Organize offense. 3. Counter attack.	(Yiannakos and Armatas 2006) (Charalampos, et al., 2013)
04	Part of the body used for scoring	1. Feet 2. Header 3. Own goal	(Yiannakos and Armatas, 2006a) (Charalampos et al., 2013)

#### 2.5. Statistical Analysis

All data were analyzed using the statistical package for PC SPSS 25.0 (Lead Technologies Inc, USA). Non-parametric chi-square (X<sup>2</sup>) analysis was used to

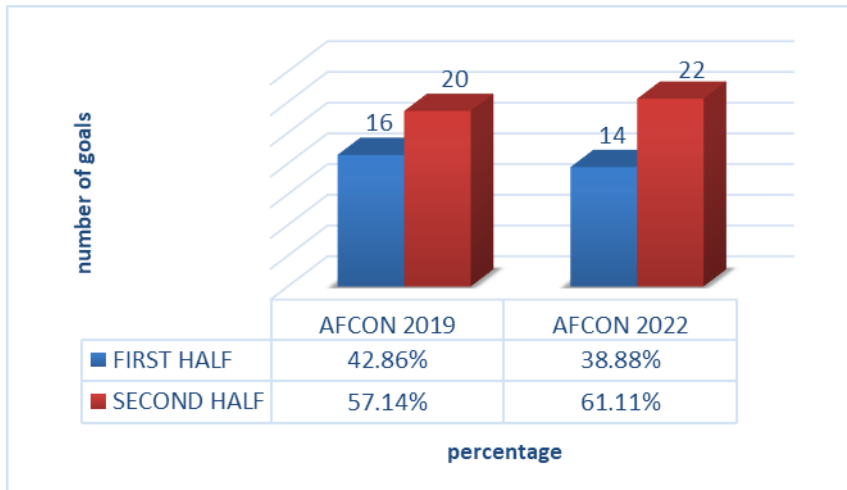


determine the statistically significant differences and the level of significance was set at ( $p < 0.05$ ).

### 3.RESULTS

From the figure (1) data showed that the majority of goals were scored in the second half (20) goals with a rate of 57.14% in **AFCON 2019** and (22) goals with a rate of 61.11% in the **2022 AFCON**. there is no statically significant difference between goals scoring frequency per 45 minutes between the **AFCON 2019** and the **AFCON 2022** ( $X^2 = 0.316$   $p > 0.05$ ).

**Figure (1):** scoring frequency per 45 minutes.



The data in figure (2) showed that the majority of goals were scored from the inside the penalty area with a rate of 72.22% in **AFCON 2019** compared to a rate of 45.45% in the **AFCON 2022**, 16.66% of goals scored from outside the penalty area in **AFCON 2022** and 3.03% in the **2022 AFCON**, 11.11% of goals were scored from inside the penalty area in **AFCON 2019** and 47.22% in the **2022 AFCON**, data analysis showed that there is a statistically significant difference in goals scoring area between the two tournaments ( $X^2 = 0.000$ ,  $p < 0.05$ ).

**Figure (2):** goals scoring area.



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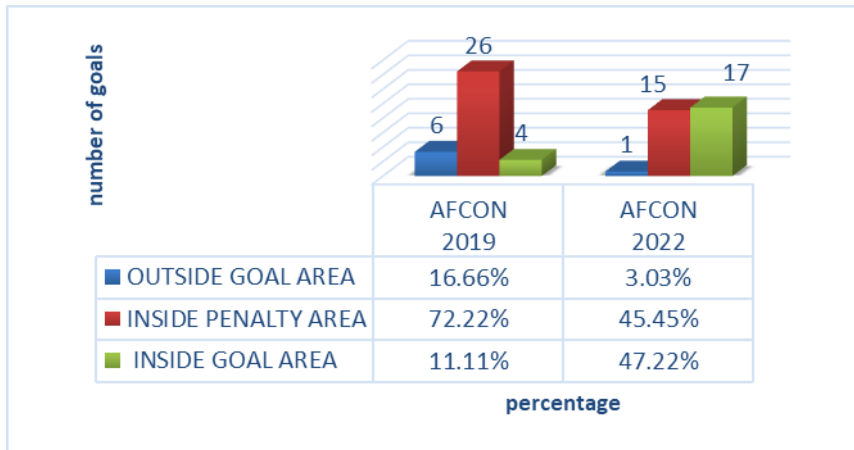


Figure (3) exhibit the type of offense ended with goals, results show that the majority of goals scored in the **AFCON 2019** were scored from open play with a rate of 61.11%, followed by scoring after a set play with a rate of 30.55%, and 8.33% from counter attack, while the data show that there is an equivalence between the scoring type in the **AFCON 2022** with a huge increase of scoring from counter attack with a rate of 25.00% compare to 8.33% in the **2019 AFCON**, there is a statistical significant difference in scoring from open play and counter attack between the **AFCON 2019** and the **AFCON 2022** ( $X^2=0.03$ ,  $p<0.05$ ).

**Figure (3):** type of offense ended with goals scoring.

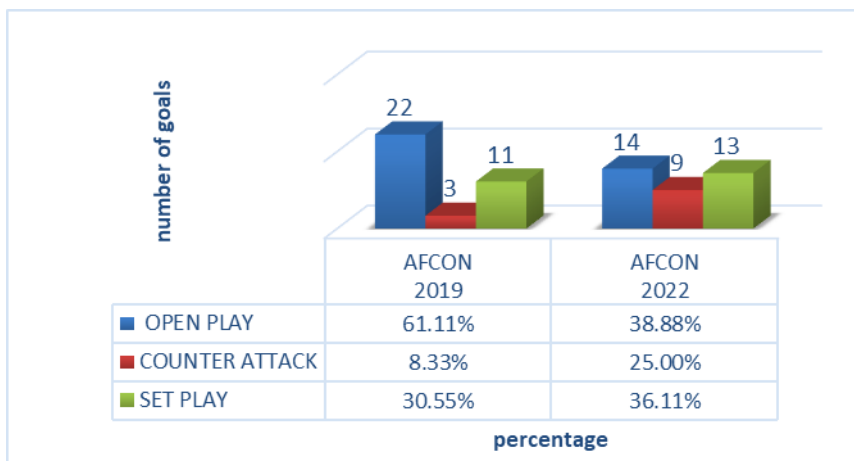
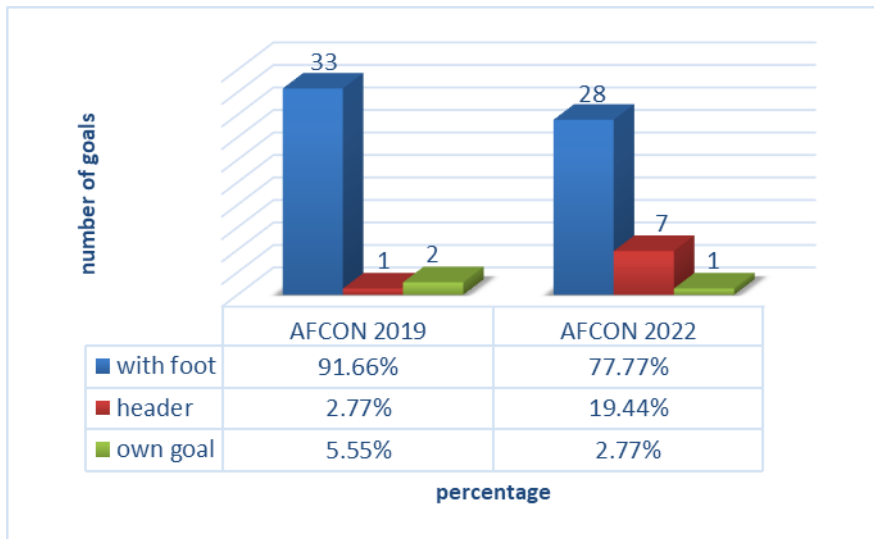




Figure (4) show that the majority of goals were scored with foot in the both tournament with a rate of 91.66% and 77.77% respectively, goals scoring from header were 2.77% in **2019 AFCON** and 19.44% in **2022 AFCON**, statically analyses showed that there is a significant statistical difference in scoring from header between the **2019 AFCON** and the **2022 AFCON** ( $X^2=0.01$ ,  $p<0.05$ ).

**Figure (4):** part of the body used for goals scoring.



#### 4.DISCUSSION

From **36** goals scored by the semifinals teams in the 2019 African cup of nation held in Egypt with an average of **1.56** goal per game and **36** goals scored by the semifinals teams in the 2022 African cup of nation held in Cameroun with an average of **1.56** goal per game, The results showed that the majority of goals were scored in the second half (20) goals with a rate of 57.14% and (22) goals with a rate of 61.11% respectively.

These results are in agreement with those of other researchers collected from international soccer tournaments (Yiannakos and Armatas, 2006; Armatas et al., 2007; Mingotti, 2014). In the 2010 world cup soccer tournament held in South Africa (Njororai, 2013) found that the highest frequency of the goals was scored in the second half of the match specially at the end of the second half of the games, According to the author, the increased scoring towards the end of the second half of matches is attributed to good or poor physical condition, lack of concentration in defense due to mental and physical fatigue and all or nothing



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efforts to decisively influence match outcome. In 2016 European Football Championship the rate of goals scored in the first half was 35,2% and the rate of goals scored in the second half was 64,8%, the reasons for this may be the fact that players are more concentrated in the 61-75th minutes of the game, substitute players getting into the game show a good performance and the tactical mentality of the team (Cebi, et al., 2016). Another study by Werlayne Stuart Soares Leite found through studying 2208 goals scoring in all world cup championships from 1930 to 2010 that the highest incidence of the goals was found during the final 15 minutes, between the 76th and 90th minute (433) goals With a rate of 19.61%, Given these results, the author confirmed that physical performance should directly interfere in the technical, tactical and psychological performance of a team, with the highest incidence of goals in the final 15 minutes of the game associated mainly to the drop in physical performance. This clearly shows the importance of physical fitness for good performance of a soccer player during the game, so that he can quickly achieve technical and tactical actions, performing well throughout the game without a performance drop (Werlayne Stuart Soares, 2013).

The second variables was the area from with the goals were scored, results showed that the majority of goals were scored from the inside of penalty area in the African cup of nations 2019 with a rate of 72.22% followed by scoring from the outside of penalty area with a rate of 16.66% and the lowest rate was the scoring from the inside of the goal area with a rate of 11.11% , on the other hand results showed a decrease of goal scoring from the outside of penalty area and an increasing rate of goals scoring from the inside of goal area in the 2022 African cup of nation.

The reason for the decreasing rate of scoring from outside the penalty area in the African cup of nations 2022 is the low frequency of shooting from this area because of the defense zone strategy that close the space in front the strikers and the poor field quality. regarding the increasing of goal scoring rate from the goal area in the African cup of nations 2022 This finding was expected because the goal area is close to goalpost and enough far away from the goalkeeper's scope (C. Michailidis al.,2004), and many studies found the same results (Njororai, 2013; Yiannis,2014a; Armatas et al.,2007; Y. Michailidis et al., 2013; Yiannakos and Armatas, 2006; Charalampos et al., 2013).





In this study results showed a decrease in scoring rate from open play (14) goals with a rate of 38.88% in 2022 African cup of nation compared to (22) goals with a rate of 61.11% scored in the 2019 African cup of nation, while the results showed an increase in scoring rate from counter attack in the 2022 African cup of nation compared the 2019 African cup of nation and increased rate of scoring from set play , a study that examined the patterns of goals scored in Euro 2012, (Leite, 2013) found the a similar result, 53.95% of goals were scored from organize offense, 17.10% from counter attack, and 28.95 % from set play, this result show the efficiency of scoring from set play In football offence, and confirmed the participation of set-plays in winning in modern soccer. The above lead us to the conclusion that coaches should focus on set-plays both on offensive and defensive aspect of them so as utilize the advantages that seem to appear (V. Armatas et al., 2007).

The last variable was the body type used to scoring goals, results show that the majority of goals were scored with foot in both tournaments and a noticeable increasing rate of goals scoring from header in the 2022 African cup of nations compared to the 2019 African cup of nations , these results are caused by the type of offence who mainly focused on set play and crosses with the aid of wingers players on the goals area to avoid the defender players and use strong strikers behind them in the open play and use the defense players in the set plays specially in the corners kicks and indirect free kicks.

## **5.CONCLUSION**

The following conclusions can be drawn about the difference of goals scoring pattern between the 2019 African cup of nations held in Egypt and the 2022 cup of nations held in Cameroun:

- The majority of goals were scored in the second half in each tournament.
- There is a statically significant difference in the area where the goals were scored between the African cup of nations 2019 and African cup of nations 2022 with a huge increase of goals scorings from the inside of goal area in the 2022 African cup of nations.



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- There is a statically significant difference in the type of the offense that ended with goal scoring between the African cup of nations 2019 and African cup of nations 2022 with a huge increase of goals scorings from counter attack in the 2022 African cup of nations.
- There is a statically significant difference in the body part used to scoring goals between the African cup of nations 2019 and African cup of nations 2022 with an increase of goals scorings from header in the 2022 African cup of nations.

The present results allow coach to know the latest strategies in soccer and goals scoring pattern in the international tournaments and gain valuable information that help him to improve their team offence performance and also defense performance, through this results coaches should pay more attention to the physical aspect and develop appropriate strategies can help players to gain more physiological demand and less time to recovery, and use the substitute players to the fullest way.

Regarding the importance of shooting to the psychological aspect and goals scoring, coaches must work on shooting from outside the penalty area, exercises should perform from different distance and different situation including the defenders and minifields players.

In modern football the individual effort is one of the important skills to scoring goals particularly against the zone defense strategies, coaches must develop different exercise and encouraging the players to dribbling and shooting under pressure with the two feet and follow the balls rebound from goal keeper.

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