# THE EFFECTS OF THE COLORS ON THE PERFORMANCES OF THE SOCCER PLAYERS AND SOCCER GOALKEEPER 

Egemen Ermiss ${ }^{\text {i }}$<br>Ondokuz Mayıs University,<br>Yaşar Doğu Faculty of Sport Sciences,<br>Turkey


#### Abstract

: This study is meant to investigate the effects of the colors on the performances of the soccer players and soccer goalkeeper. The research was constructed based on qualitative pattern; and data was collected through document review method as a case study. In the 2018 World Soccer Championship, the players who took the first place in the goal kingdom generally played with the red, white and blue T-shirt and shorts color. At 2018 world Soccer Championship, the majority of the football goalkeepers played with the green color weighted form ( $22.32 \%$ ). It was followed by goalkeepers wearing black colors $(17.86 \%)$. In the third place, it was determined that there were goalkeepers wearing the yellow color ( $16.96 \%$ ). It is determined that soccer players which used bright colors for t-shirt and shorts were more successful in World Cup 2018. As a result, it can have positive effects at success from color worn on the soccer players and goalkeeper. The soccer players and goalkeeper must be allowed to wear clothes in colors they like. The effect of the colors of the jerseys worn by footballers and goalkeepers on their success should be investigated in different championships. Coaches can benefit from different colors when to working soccer players and goalkeepers. It can be colorful targets selected. Soccer players with different colors clothes can to shoot at the goalkeepers.


Keywords: soccer, color, success

## 1. Introduction

It is well known that colors have important place in sports life as well besides the fact that it has dominant place in human life. It has been observed that colors in sports have recently taken attention due to its impact on performances of sportsmen (Gülle et al., 2016). Colors are seen as the energy potentials of a club and athletes (Üster, 2010). Goldstein (1942) expanded on Goethe's intuitions, positing that certain colors (red and

[^0]yellow) produce systematic physiological reactions manifest in emotional experience, cognitive orientation, and overt action (Elliot, 2015). The choice of color in sports and especially in sportswear and in t-shirts and even in leggings may affect sports performance in a positive way (İmamoğlu et al., 2017a; İmamoğlu et al., 2017b).

The correct use of colors is thought to improve performance in soccer players and goalkeepers. For this reason, it is important to investigate the effects of color effects on performance in sports. The color of an athlete's dress may affect the chances of winning contests in sport competition (Elliot and Maier, 2014). Specifically there is evidence for a win effect for athletes wearing red in combat (Hill and Barton, 2005) and team sports (Attrill et al., 2008). These "red" effects seem both empirically and theoretically grounded. They can be attributed to the inherently intimidating effects of redness on opponents (Elliot and Maier, 2014) and the link between wearing red and increased heart rate, physical strength and higher testosterone levels. The colors used by sportsmen and teams in the soccer are generally red, blue and white. T-shirts, shorts and leggings, especially in the soccer field, are seen using red, blue and white and their mixed colors. Some soccer teams seem to prefer these colors or combinations of these colors, rather than their national flag colors. There is widespread belief that athletes may improve performance (Yamaner and İmamoğlu, 2018).The physical and psychological condition of the athletes but also the technical capacity and fighting desire can be effective in winning or losing a sport branch (Imamoğlu, 2010; Imamoğlu, 2011; Birinci et al., 2014; Mayda et al., 2016; Özdal et al., 2017; Mahmood et al., 2017; Yılmaz et al., 2017a; Yılmaz et al., 2017; Aktuğ et al., 2018; Tahhan et al., 2018; Imamoğlu and Demirtaş, 2018). Despite of the study of Dijkstra and Preenen (2008), Hill \& Barton (2005), Attrill et al. (2008), Greenlees et al. (2008), Caldwell \& Burger (2011), Greenlees et al. (2013) reported in their studies that red color may induce aggression and may affect winning possibility in a positive way. İmamoğlu et al. (2018) in study, the choice of colors in football matches can be positively reflected as a result of influencing the football players positively. The positive effect of colors on football players and spectators in soccer championship is thought to be reflected more when the parameters such as condition and technique are similar among the teams (Imamoğlu et al., 2018). Although it is true that Attrill et al. (2008), in presenting data from the English Football League from 1947 onwards, as well as analysis of match results when the English team wore white and red team uniforms, did suggest that this effect is present in football; however, two similar studies did not confirm this effect in the Polish and German League.

Motivation and fighting desire can be changed, according to moment warning situation of colors effects on human psychology. It has been observed that the colors of sportswear used at competitions can affect the results of the football matches. It is thought the colors red and blue can affect success especially in football. In England, in all leagues, red teams were more successful in football. In the 2010, World Football Championship teams who worn white sportswear play more matches. White t-shirt and shorts were worn more than the other colors in this championship. Secondly the blue $t$ -
shirt and shorts and thirdly red sportswear were worn. In the total white, blue and red sportswear and gaiters were worn. The most goals which shouted in the World Championship were shouted by the footballers who wear blue and red sportswear. Color pick in football can affect the sportive performance even a little. It has been concluded that this effect can be reflected on the result more when parameters such as condition and technique are equal among the competitors. Color pick in sports and especially team sports can affect the sportive performance even a little. It has been concluded that this effect can be reflected on the result more when parameters such as form and technique are equal among the competitors (Imamoğlu 2010; Imamoğlu, 2 011). Imamoğlu and Demirtaş (2018) stated that the colors used by the fans, the gular face images and the cute movements they made can reduce violence in sports areas. Not only physical, mental and technical capacity, but also environmental stimuli and effect of colors can be effective for performance in the soccer players and goalkeeper. World Cup 2018 witnessed both different colors used by teams and the performance of players from different origin and color. The colors mainly used by teams are : white ( $\% 32,14$ ), red $(\% 27,68)$ in $t$-shirts, white $(\% 35,71)$ red $(\% 18,75)$ blue $(\% 17,86)$ in shorts, white $(\% 39,29)$ red $(\% 25,00)$ in leggings (İmamoğlu et al.,2018).

Since colors affect human psychology, it is thought that they will affect the soccer players and their performance will be more or less influential. This study is to investigate the effects of the colors on the performances of the soccer players and soccer goalkeeper.

## 2. Method

The research was constructed based on qualitative pattern; and data was collected through document review method as a case study. 2018 World Cup football matches were examined. This work is limited to the outfits of footballers and goalkeepers in the top ranks in the goal kingdom. SPSS 22.0 program was used for the analysis of data.

## 3. Results

Table 1: At the 2018 World Soccer Championship, football players in the goal kingdom and the colors they wear

| Soccer player | Number of matches <br> played | Number of goals <br> scored | T-shirt and shorts <br> color |
| :--- | :---: | :---: | :---: |
| Harry Kane | $\bullet 6$ | $\bullet 6$ | $\bullet$ Red-Red |
| Denis Cheryshev | 5 | 4 | Red - White |
| Romelu Lukaku | $\bullet 6$ | $\bullet$ | $\bullet$ |
| $\bullet$ Cristiano Ronaldo | 4 | 4 | Red-Red |
| $\bullet$ Antoine Griezmann | 7 | 4 | Red-Red |
| Kylian Mbappe | 7 | 4 | White-White |
| Artem Dzyuba | 5 | 3 | Blue-White |
| Yerry Mina | 3 | 3 | Red-Red |
| Edinson Cavani | 4 | 3 | Yellow-Yellow |
| Diego Costa | 4 | 3 | Blue-Blue |

Table 2: At 2018 World Championships, it is t-shirt and shorts colors of soccer goalkeeper

| Color | $\mathbf{n}$ | \% |
| :--- | :---: | :---: |
| Green | 25 | 22,32 |
| Black | 20 | 17,86 |
| Blue | 19 | 16,96 |
| Yellow | 16 | 14,29 |
| Orange | 10 | 8,93 |
| Gray and White | 9 | 8,04 |

## 4. Discussion

The researches in the sports field revealed that dressing style (Greenlees et al., 2005 a, 2005b) and colors (Frank \& Gilovich, 1988) create perceptional differences on individuals as a result of their impact (Gülle et al., 2016. In team sports, Attrill, Gresty, Hill, and Barton (2008) examined the superiority of wearing red in an archival study. They investigated the influence of the color red on long-term success in English soccer over a 55 -year period and found that performance was significantly better when teams played in their home color red. However, García-Rubio, Picazo-Tadeo, and González Gómez (2011) found that teams wearing red shirts did not perform better than others in Spanish premier league soccer after controlling for other factors such as the management success of the football team. In a study covering 729 football clubs in Europe, the three most preferred colors are blue, red and white. The most commonly used combination is blue white. It is followed by red and white (Imamoğlu, 2011). In the 2018 World Soccer Championship, the players who took the first place in the goal kingdom generally played with the red, white and blue T-shirt and shorts color (Table 1). Red, white and blue football players have a preferred form of color. This may affect the success of athletes may be the belief. Hill and Barton (2005) proposed that enhanced winning rates of contestants wearing red might reflect an innate response to red as a signal of dominance. Specifically there is evidence for a win effect for athletes wearing red in combat (Hill and Barton, 2005) and team sports (Attrill et al., 2008). These "red" effects seem both empirically and theoretically grounded. Several studies suggested the color effects on winning are not unique to red. Rowe et al. (2005) found in a study that judo players in blue won more often than those in white during the 2004 Olympics.

While perceptual differences in moving objects of a certain color may indeed influence localizing team players and potentially the likelihood of winning in for example football matches (Olde Rikkert et al., 2015), differential perception effects are unlikely to occur in situations where athletes are directly fighting an opponent in close quarters. In a FIFA World Cup, the goal recovery rate according to the colors is as follows: The goalkeeper wearing a green goalkeeper jersey was found to be $38 \%$, the goalkeeper black-form $35 \%$, the goalkeeper in blue form $31 \%$. The most salvaged green wearers (Yamaner and Imamoglu, 2018). At 2018 world Soccer Championship, the majority of the football goalkeepers played with the green color weighted form $(22.32 \%)$. It was followed by goalkeepers wearing black colors (17.86\%). In the third
place, it was determined that there were goalkeepers wearing the yellow color ( $16.96 \%$ ) (Table 2). In 2018 world championships, most green goalkeepers were seen. Perhaps the idea of this penalty recovery has been effective. The color of an athlete's uniform may bias the chances of winning contests in sport competition (Elliot and Maier, 2014). The colors preferred by teams in World Cup 2018 for t -shirt and shorts were observed to have one or two brilliant colors. It was seen that these colors are mainly white red and blue (İmamoğlu et al., 2018). At the same time, It has been known that not only athletes' uniform colors but also some physical and physiological parameters are very important things for all sport branches (Mayda et al., 2017; Yılmaz et al., 2016; Yılmaz et al., 2017; Özer et al., 2017; Pancar et al., 2018; 2017; 2016).

Training and sports can be used to improve human performance. Education, one of the most significant concepts in human history, evolves in terms of its intent and method due to the changing conditions of society over time (İmamoğlu and İmamoğlu, 2018). In the last century working life become easier and result of this increased people free time (İslamoğlu et al., 2014). It is necessary that people should be guided to go restful natural places due to running away from depressing and motionless city life. Some recreative activities were determined as picnic, trekking, camping, birdwatching, landscape watching and photography (Imamoğlu et al., 2013; İmamoğlu et al., 2014). These can be added to orienteering (İmamoğlu et al., 2018). It is necessary to direct the footballers to recreation areas designed with soothing colors.

As a result, it can have positive effects at success from color worn on the soccer players and goalkeeper. The soccer players and goalkeeper must be allowed to wear clothes in colors they like. The effect of the colors of the jerseys worn by footballers and goalkeepers on their success should be investigated in different championships. Coaches can benefit from different colors when to working soccer players and goalkeepers. It can be colorful targets selected. Soccer players with different colors clothes can to shoot at the goalkeepers.

## References

Aktug, Z.B., Yilmaz, A.K., Ibis, S., Aka, H., Akarçeşme, C., Sökmen, Tamer., (2018). The Effect of 8-Week Nordic Hamstring Exercise on Hamstring Quadriceps Ratio and Hamstring Muscle Strength. World Journal of Education, 8(3), 162-169.
Attrill, M.J., Gresty, K.A., Hill, R.A., \& Barton, R.A. (2008). Red shirt colour is associated with long-term team success in English football. Journal of Sports Sciences, 26(6), 577-582. PubMed doi:10.1080/02640410701736244
Birinci, M.C., Yılmaz, A.K., Erkin, A., Sahbaz, S., \& Aydın, İ. (2014). Determination of relationship between respiratory parameters and aerobic capacity of referees. Procedia-Social and Behavioral Sciences, 152, 353-357.

Caldwell, D.F., \& Burger, J.M., (2011). On Thin Ice Does Uniform Color Really Affect Aggression in Professional Hockey?. Social Psychological and Personality Science, 2(3), 306-310.
Dijkstra, P.D., \& Preenen, P.T., (2008). No effect of blue on winning contests in judo. Proceedings of the Royal Society of London B: Biological Sciences, 275(1639), 1157-1162.
Elliot, A.J., Maier. M.A. (2014). Color psychology: effects of perceiving color on psychological functioning in humans. Annu. Rev. Psychol. 65, 95-120. 10.1146/annurev-psych-010213-115035

Elliot, A.J. (2015). Color and psychological functioning: a review of theoretical and empirical work. Front. Psychol, 6:368. doi: 10.3389/fpsyg.2015.00368
Frank, M.G., Gilovich, T., (1988). The dark side of self- and social perception: Black uniforms and aggression in professional sports. Journal of Personal Social Psychology, 54: 74-85.
García-Rubio, M.A., Picazo-Tadeo, A.J., \& González-Gómez, F. (2011). Does a red shirt improve sporting performance? Evidence from Spanish football. Applied Economics Letters, 18(11), 1001-1004. doi:10.1080/13504851.201 0.520666
Greenlees, I.A., Bradley, A., Thelwell, R.C., \& Holder, T.P. (2005). The impact of two forms of opponents' non-verbal communication on impression formation and outcome expectations. Psychology of Sport and Exercise, 6: 103-115.
Greenlees, I.A., Buscombe, R., Thelwell, R.C., Holder, T.P., \& Rimmer, M., (2005). Impact of opponents' clothing and body language on impression formation and outcome expectations. Journal of Sport and Exercise Psychology, 27: 39-52.
Greenlees, I., Leyland, A., Thelwell, R., \& Filby, W., (2008). Football Penalty Takers' Uniform Colour And Prepenalty Kick Gaze Affect The İmpressions Formed Of Them By Opposing Goalkeepers, Journal Of Sports Sciences, 26, 569-76.
Gülle M., Beyleroğlu M., Hazar M. (2016). Investigation Of The Impact Of The Uniform Colors Of Sportsmen Who Participated In Turkish Youth Boxing Championship On Their Performance During The Competition, International Journal of Environmental \& Science Education, Vol 11, No. 16, 9482-9488
Hill, R.A., \& Barton, R.A. (2005). Red enhances human performance in contests. Nature, 435, 293.
Imamoğlu O., Erkin A., Aydoğan A., (2018). Reflection of Colors to Success in 2016 European Football Championship, 6th International Conference on Science Culture and Sport, Lviv/Ukraine, 25-27 April 2018
İmamoğlu G., (2010). The Effect of Colors on Sportive Performance, Mustafa Kemal University Physical Education and Sports Science, Volume 1, Number 2, pp.40-52
İmamoğlu G., (2011). The Effect of Colors on Sportive Performance in Football, Ataturk University Physical Education and Sports Science, Volume 7, Number 2,pp. 1
İmamoğlu G., Demirtaş Ö., (2018). Colors Used by Football Fans,6th International Conference on Science Culture and Sport, Lviv/UKRAINE

İmamoğlu G., Yamaner E., Berk Y., (2017). Characteristics and Effects of Maskots in Organizations of Olympic Games and Some World Champions, The 9th Conference of the International Society for the Social Science, Abstract Book, www.issss2017.org.s. 80
İmamoğlu G., Yamaner E., Kaplan A., (2017). Logos and Mascots of the Selected Football Teams, The 9th Conference of the International Society for the Social Science, Abstract Book, www.issss2017.org.s. 81
İmamoğlu O., Çebi M., İslamoğlu İ., Yamak B. (2018). Colors of Teams in World Cup 2018 and their Reflections on Success, The Journal of International Social Research, Volume: 11 Issue: 59:1469-1475
İmamoğlu, A., İmamoğlu, M. Uysal, A. (2018). Nevşehir'de Oryantiring Sporu ve Oryantiringin Doğaya Etkisi, Nevşehir Hacı Bektaş Veli Üniversitesi SBE Dergisi, 8 (2), 217-230
İmamoğlu, M., İmamoğlu, A. (2018). Oryantiring Sporunun Ortaöğretim Coğrafya ve Beden Eğitimi ve Spor Derslerinin Kazanimlarina Etkisi, The Journal of Kesit Academy, Yıl 4, Sayı 16: 198-207
İmamoğlu, M., İmamoğlu, A., İmamoğlu, O. (2013). Rekreasyonel Planlamada Cehennemdere Vadisi Örneği (Ondokuzmayıs). 2nd İnternational Conference On Science, Culture And Sport, 30 October - 1 November 2013, Kemer-Turkey.
İmamoğlu, M., İmamoğlu, A., İmamoğlu, O. (2014). Recreational Planning Case Study, Uluslararası Hakemli Akademik Spor Sağlık ve Tıp Bilimleri Dergisi, Issue: 10 Volume: 4:106-112
İslamoğlu İ., İmamoğlu, A., Çavuşoğlu, G. (2014 ). Verçenik Yaylası'nın Alternatif Turizmi ve Rekreasyonel Faaliyetlerinin Belirlenmesi, International Journal of Science Culture and Sport, Special Issue 2,241-282.
Mahmood, M.H., Özdal, M., Mayda, M.H., \& Biçer, M. (2017). Acute effects of anaerobic exercise with different intensities on dynamic balance performance. European Journal of Education Studies. 3(8), 357-370.
Mayda, H.M., Yılmaz A.K., Kabadayı, M., Özdal M., Taşmektepligil, Y. (2017). Analysis of $Q$ angle in footballers in terms of some parameters. International Conference on Exercise, Sport \& Health, Tirana (Albania), 26.
Mayda, M.H., Karakoc, O., \& Ozdal, M. (2016). The investigation of some physical, physiological and anthropometric parameters of visually impaired and nonimpaired a national male judoka. Journal of Education and Training Studies, 4(6), 192-198.
Olde Rikkert J., Haes V., Barsingerhorn A.D., Theelen T., Olde Rikkert M.G.M. (2015). The colour of a football outfit affects visibility and team success. J. Sports Sci. 33, 2166-2172. 10.1080/02640414.2015.1064156
Özdal, M., Mayda, H.M., \& Bostancı, O. (2017). Respiratory muscle training and athletic performance. EC Pulmonology and Respiratory Medicine, 2017b, 5(4), 164-166.

Özer, Y., Bozdal, Ö., \& Pancar, Z. (2017). Acute Effect of Circuit Aerobic and Traditional Aerobic Training on Hamstring Flexibility in Sedentary Women. European Journal of Physical Education and Sport Science. 3(12), 268-275.
Pancar, Z., Özdal, M., \& Çinar, V. (2017). The effect of 4-weekly low intensity physical activity program in thyroid hormone levels in obese and overweight children. European Journal of Physical Education and Sport Science. 3(11), 1-8.
Pancar, Z., Özdal, M., Pancar, S., \& Biçer, M. (2016). Investigation of visual and auditory simple reaction time of 11-18 aged youth. European Journal of Physical Education and Sport Science. 2(4), 145-152.
Pancar, Z., Özdal, M., Sarıkaya, M., \& Çınar, V. (2018). Effect of Physical Activity Program on Iron and Iron-Binding Capacity in Obese Children. Sch. J. Arts Humanit. Soc. Sci, 6(6), 1299-1303.
Rowe C., Harris J.M., Roberts S.C. (2005). Sporting contests: seeing red? Putting sportswear in context. Nature 437, E10. 10.1038/nature04306
Tahhan, A.M.A.A., Özdal, M., Vural, M., \& Mayda, M.H. (2018). Acute Effects of Aerobic and Anaerobic Exercises on Circulation Parameters. European Journal of Physical Education and Sport Science. 4(3), 72-80.
Üster M.Y., (2010). http://www.forumalev.net/galatasaray/31345-renklerin-sifresi.
Yamaner F., Imamoğlu G., (2018). Sport Performance Colors Power and Effect, Turkish Studies, Volume 13/15, Spring 2018, p. 509-520
Yılmaz, A.K., Kabadayı, M., Mayda M.,H., Çavuşoğlu, G., \& Yalçın, T.M. (2017). Analysis of $Q$ Angle Values Of Female Athletes From Different Branches. Ovidius University Annals, Series Physical Education \& Sport/Science, Movement \& Health, 17(2).
Yılmaz, A.K., Kabadayı, M., Mayda, H.M., Özdal, M., Birinci, C., (2017). Analysis of the effect of isokinetic knee strength on athletes' agility. İnternational Conference on Exercise, Sport \& Health, Tirana(Albania), 27.
Yilmaz, A.K., Kabadayi, M., Mayda, M.H., Birinci, M.C., \& Özdal, M. (2017). The effects of isokinetic knee strength on the promptness of soccer players. European Journal of Physical Education and Sport Science. 3(12), 268-275.


[^0]:    ${ }^{1}$ Correspondence: email egedeath@hotmail.com

