





Abstract

An analysis of transition-resulted goal scoring patterns in football leagues: a comparison of the first 5 rounds and the last 5 rounds prior midway of the season

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Conflict of interest: nothing to declare. **Funding:** This work is financed by national funds through FCT – Fundação para a Ciência e a Tecnologia, I.P., within the scope of the project “2021.02330.CEECIND” assigned to Rui Marcelino.

When referring to football, the concept of ‘game style’ refers to a team's distinctive approach to the game, which can be identified by various factors namely tactics, formations, and strategies. All team aims for success by maintaining their playing patterns standards which are congruent and aligned with their playing style. This study compared the goal-scoring patterns such as a result of “non offensive transition”, “set pieces”, “offensive transition”, and “positive outcomes”. The sample consists of 702 games grouped into three leagues: Top Leagues, Marginal Leagues, and Emerging Leagues. All the 2140 goals were categorised into four types: non-offensive transitions, set pieces, direct offensive transitions, and positive outcomes of offensive transitions. The aim is to determine noticeable differences between two distinctive competitive moments “Rounds 1 to 5” and “Rounds last 5”. This study demonstrates no differences in scoring method between the "Rounds 1 to 5" and "Rounds Last 5" in all variables across all the analysed league groups. The only exception is the goals conceded by the Non-Offensive transition

in the Emerging Leagues. Results also show that in the Top Leagues, the goals resulting from direct offensive transitions and positive outcomes from offensive transitions have a greater impact (54%) on the total scoring. These findings highlight the importance of focusing on establishing consolidated game patterns in order to make them more impactful in the scoring process.

References

- American Psychological Association. (2017). American Psychological Association. Ethical Principles of Psychologists and Code of Conduct. *American Psychologist*, 57(12), 1–20. Retrieved from <https://apa.org/ethics/code/ethics-code-2017.pdf> <https://doi.apa.org/getdoi.cfm?doi=10.1037/0003-066X.57.12.1060>
- Aus Der Fünten, K., Faude, O., Lensch, J., & Meyer, T. (2014). Injury characteristics in the German professional male soccer leagues after a shortened winter break. *Journal of Athletic Training*, 49(6), 786–793. <https://doi.org/10.4085/1062-6050-49.3.51>
- Caldeira, N., Lopes, R. J., Fernandes, D., & Araujo, D. (2023). From Optical Tracking to Tactical Performance via Voronoi Diagrams: Team Formation and Players' Roles Constrain Interpersonal Linkages in High-Level Football. *Sensors*, 23(1). <https://doi.org/10.3390/s23010273>
- Camerino, O. F., Chaverri, J., Anguera, M. T., & Gudberg, K. (2012). *Dynamics of the game in soccer : Detection of T- patterns*. 1391. <https://doi.org/10.1080/17461391.2011.566362>
- Carling, C., Wright, C., Nelson, L. J., Bradley, P. S., Carling, C., Wright, C., ... Bradley, P. S. (2014). Comment on 'Performance analysis in football: A critical review and implications for future research'. *Journal of Sports Sciences*, 32(1), 2–7. <https://doi.org/10.1080/02640414.2013.807352>
- Casal, C., Andujar, M., Losada, J., & Ardá, T. (2010). *Identification of Defensive Performance Factors in the 2010 FIFA World Cup South Africa*. 1–11. <https://doi.org/10.3390/sports4040054>
- Fernandez-Navarro, J., Fradua, L., Zubillaga, A., Ford, P. R., McRobert, A. P., Fradua, L., ... Fernandez-Navarro, J. (2016). Attacking and defensive styles of play in soccer : analysis of Spanish and English elite teams elite teams. *Journal of Sports Sciences*, 34(24), 2195–2204. <https://doi.org/10.1080/02640414.2016.1169309>
- Fernandez-Navarro, J., Fradua, L., Zubillaga, A., & McRobert, A. P. (2018). Influence of contextual variables on styles of play in soccer. *International Journal of Performance Analysis in Sport*, 18(3), 423–436. <https://doi.org/10.1080/24748668.2018.1479925>
- Gollan, S., Ferrar, K., & Norton, K. (2018). Characterising game styles in the English Premier League using the “moments of play” framework. *International Journal of Performance Analysis in Sport*, 18(6), 998–1009. <https://doi.org/10.1080/24748668.2018.1539383>
- Gonzalez-Rodenas, J., Lopez-Bondia, I., Moreno, F. C., & Malavés, R. A. (2015). Tactical indicators associated with the creation of scoring opportunities in professional soccer in Professional Soccer. *Ccd*, 10, 215–225.
- Gyarmati, L., Kwak, H., & Rodriguez, P. (2014). Searching for a Unique Style in Soccer. *ArXiv Preprint ArXiv:1409.0308*, 5–8.
- Hewitt, A., Greenham, G., & Norton, K. (2016). Game style in soccer: What is it and can we quantify it? *International Journal of Performance Analysis in Sport*, 16(1), 355–372.

<https://doi.org/10.1080/24748668.2016.11868892>

- Lago-Peñas, C., Gómez-Ruano, M., & Yang, G. (2017). Styles of play in professional soccer: an approach of the Chinese Soccer Super League. *International Journal of Performance Analysis in Sport*, 17(6), 1073–1084. <https://doi.org/10.1080/24748668.2018.1431857>
- Los Arcos, A., Mendez-Villanueva, A., & Martínez-Santos, R. (2017). In-season training periodization of professional soccer players. *Biology of Sport*, 34(2), 149–155. <https://doi.org/10.5114/biolsport.2017.64588>
- Machado, J., Barreira, D., & Garganta, J. (2013). Eficácia ofensiva e variabilidade de padrões de jogo em futebol (Attacking efficacy and game pattern variability in soccer). *Revista Brasileira de Educação Física e Esporte*, 27(4), 667–677. <https://doi.org/10.1590/s1807-55092013000400014>
- Maimone, V. M., & Yasseri, T. (2021). Football is becoming more predictable; network analysis of 88 thousand matches in 11 major leagues. *Royal Society Open Science*, 8(12). <https://doi.org/10.1098/rsos.210617>
- Maneiro, R., Casal, C. A., Álvarez, I., Moral, J. E., López, S., Ardá, A., & Losada, J. L. (2019). Offensive transitions in high-performance football: Differences between UEFA Euro 2008 and UEFA Euro 2016. *Frontiers in Psychology*, 10(JUN). <https://doi.org/10.3389/fpsyg.2019.01230>
- McClean, S., Salmon, P. M., Gorman, A. D., Naughton, M., McClean, S., Salmon, P. M., ... Naughton, M. (2017). Theoretical Issues in Ergonomics Science Do inter-continental playing styles exist? Using social network analysis to compare goals from the 2016 EURO and COPA football tournaments knock-out stages. *Theoretical Issues in Ergonomics Science*, 18(4), 370–383. <https://doi.org/10.1080/1463922X.2017.1290158>
- Memmert, D., Lemmink, K. A. P. M., & Sampaio, J. (2017). Current Approaches to Tactical Performance Analyses in Soccer Using Position Data. *Sports Medicine*, 47(1), 1–10. <https://doi.org/10.1007/s40279-016-0562-5>
- Moura, F. A., Eduardo, L., Martins, B., & Cunha, S. A. (2014). *Analysis of football game-related statistics using multivariate techniques*. (April). <https://doi.org/10.1080/02640414.2013.853130>
- Oliva Lozano, J. M., Rago, V., Fortes, V., & Muyor, J. M. (2022). Impact of match-related contextual variables on weekly training load in a professional soccer team: A full season study. *Biology of Sport*, 39(1), 125–134. <https://doi.org/10.5114/BIOLSPORT.2021.102927>
- Sgrò, F., Aiello, F., Casella, A., & Lipoma, M. (2017). *The effects of match-playing aspects and situational variables on achieving score-box possessions in Euro 2012 Football Championship*. Retrieved from <http://rua.ua.es/dspace/handle/10045/66809>
- Taylor, J., Mellalieu, S., James, N., & Shearer, D. A. (2008). The influence of match location, quality of opposition, and match status on technical performance in professional association football. *Journal of Sports Sciences*, (August). <https://doi.org/10.1080/02640410701836887>
- Teixeira, J. E., Forte, P., Ferraz, R., Leal, M., Ribeiro, J., Silva, A. J., ... Monteiro, A. M. (2021). Monitoring accumulated training and match load in football: A systematic review. *International Journal of Environmental Research and Public Health*, 18(8), 1–47. <https://doi.org/10.3390/ijerph18083906>
- Tenga, A., Ronglan, L. T., & Bahr, R. (2010). Measuring the effectiveness of offensive match-play in professional soccer. *European Journal of Sport Science*, 10(4), 269–277. <https://doi.org/10.1080/17461390903515170>
- Winter, C., & Pfeiffer, M. (2016). Tactical metrics that discriminate winning, drawing and losing teams in UEFA Euro 2012. *Journal of Sports Sciences*, 34(6), 486–492. <https://doi.org/10.1080/02640414.2015.1099714>