

Research article

Contextual Factors Impact Styles of Play in the English Premier League

Stuart Gollan^{1,2}✉, Clint Bellenger² and Kevin Norton²

¹Adelaide United Football Club, Adelaide, South Australia, Australia; ²Alliance for Research in Exercise, Nutrition and Activity (ARENA) School of Health Sciences, University of South Australia, Adelaide, South Australia, Australia

Abstract

The aim of this study was to evaluate the influence of contextual factors on game styles in professional soccer. Interactions between styles and different playing venues, opposition quality, total match goals, and competing styles, were investigated using logistic regression and odds ratios. Game styles were characterised using the moments of play framework where three distinct styles have been identified: Style 1 – moderate strength in defence; Style 2 – dominance in transition, and Style 3 – strength in attacking phases of play. Results revealed that when playing at home against teams identified by Style 1, teams were more likely to play Style 2 ($p < 0.05$) or Style 3 ($p < 0.001$). Against top 10 opposition, teams were less likely to play Style 3 compared to either Style 1 ($p < 0.001$) or Style 2 ($p < 0.001$). Regardless of venue, teams were more likely to play Style 3 against bottom 10 sides compared to either Style 1 ($p < 0.001$) or Style 2 ($p < 0.001$), suggesting a hierarchical order between contextual factors. Competing game styles significantly impacted total match goals scored, whilst match results were also influenced by game style combinations. Overall, this study showed the significant effects of various contextual variables on game styles played by teams in the EPL.

Key words: Play patterns, match analysis; moments of play, game style, situational variables.

Introduction

Performance analysis in soccer is considered an important tool for evaluating team behaviours and improving team outcomes. In general terms, a common approach is to associate success with various game-related performance indicators to identify playing styles that increase and/or decrease the probability of team success. For example, ball possession rates (Bradley et al., 2014; da Mota et al., 2016), passing variables (Hughes and Franks, 2005; Wallace and Norton, 2014), shots on goal (Hughes and Franks, 2005; Lago-Penas et al., 2010), specific playing formations (Bradley et al., 2011; Carling, 2011), and defensive variables (Santos et al., 2017; Vogelbein et al., 2014) have all been associated with team success. These relationships and the overall performance of a team however, can also be influenced by external ‘contextual’ variables such as match location, opposition quality, and match status (i.e. winning or losing) (Lago and Martin, 2007; Taylor et al., 2008).

Additionally, game-related variables have been used to characterise styles of play in professional soccer leagues worldwide (Fernandez-Navarro et al., 2016; Gollan et al., 2018; Lago-Penas et al., 2017). A team’s

‘game style’ has been defined as a combination of identifiable strategies and tactical behaviours that are regularly repeated and rehearsed by a team during specific phases of a match and from game to game (Hewitt et al., 2016). The game style is based on quantifying elements involving average player and/or ball speed, duration and number of skilled actions, and location of possession and movements (Hewitt et al., 2016). Recently, including contextual variables in performance analysis has added resolution to our understanding of player interactions and team dynamics that can impact playing styles under a variety of conditions. These include, for example, strength of the opposition (Yang et al., 2018), current match score line (Sarmiento et al., 2018), playing venue (Gomez et al., 2018), or a combination of all three variables (Almeida et al., 2014; Bradley et al., 2014). The results of these studies have shown altering these conditions can impact the preferred playing patterns of a team, and highlight the importance of considering these contexts when preparing for games or characterising playing styles. Moreover, this type of research can shed light on potential mechanisms of why styles change in predictable patterns in specific contexts.

Over the past decade numerous playing styles have been described for soccer (Sarmiento et al., 2018). Many of these are based on analysing game events within specific ‘moments’, or periods of play, to indicate relative dominance in particular moments. These include play patterns such as ‘build up’ styles (extended periods of controlled possession (Collet, 2013; Kempe et al., 2014)), counter attacks (rapid progression of the ball to optimise player imbalance (Gonzalez-Rodenas et al., 2016; Tenga et al., 2010b; Turner and Sayers, 2017)), defensive transitions (the actions occurring immediately after a team loses ball possession and their efforts to regain possession or inhibit opposition offensive actions (Almeida et al., 2014; Santos et al., 2017; Vogelbein et al., 2014)), and set pieces (for example, corner kicks (Yiannakos and Armatas, 2006)). Efforts to characterise tactical team play have included player positional coordinates in line with offensive and defensive ‘principles of play’. For example, how effectively teams stretch or create space in offence, or compress and confine when defending (Folgado et al., 2014). Derivations of these metrics involve quantifying the central location of a team’s players or ‘centroid’ and analysing its position relative to other variables, for example, the opposition’s centroid, when goals are scored or during transitional play (Frencken et al., 2011). However, whilst dissecting a game into phases to analyse a team’s strengths, weaknesses and characteristic playing

style has been reported, it is only relatively recently that a definition of game style using the moments of play framework has been published (Hewitt et al., 2016). Furthermore, no studies have used the aforementioned framework in performance analysis to investigate how styles can be influenced by contextual elements in soccer. In fact, there are numerous ways researchers have characterised playing styles without reference to a consistent methodology (Fernandez-Navarro et al., 2016). Consequently, it has been problematic to compare styles across leagues, time, changes in coaching and playing personnel, in addition to analysing game styles as a function of contextual variations. This study will investigate the influence of contextual variables on soccer playing styles from the English Premier League (EPL) using the moments of play framework (Hewitt et al., 2016).

Methods

Moments of play

Playing styles within this research were defined using the moments of play framework described by Hewitt et al. (2016). The moments of play framework quantifies playing patterns by dissecting a game into five distinct periods, or moments. These moments can be used to analyse a team's relative performance during key periods of match play. Based on the degree of ball control for one team, the moments are identified as; set pieces (SP), established offence (EO), transition into offence (TO), transition into defence (TD), and established defence (ED).

Preliminary analysis

All 380 games from the 2015-16 EPL season were included for analysis. Across the season, each team plays the opposition once at home and once away, resulting in all 20 teams playing 38 League games. The dataset used in the current research was also used in a previous study conducted by Gollan et al. (2018), and a detailed methodology describing the use of game-related variables to quantify game style is described in this earlier study. Briefly, 96 game-related variables recorded from all matches were supplied from a commercial sports data provider (OptaPro). The reliability of the provider (OptaPro) collecting game-related variables has been established (ICC ranging from 0.88 – 1.00). These performance variables were z-score transformed and allocated to a relevant moment of play. The mean value of the multiple z-scores within each moment of play was determined, representing each team's performance relevant to all other teams. The authors identified three distinct clusters, each portraying three different playing styles; Cluster 1 characterised by moderate strength in ED and relatively poor performance in other moments; Cluster 2 characterised by dominance in both the TO and TD moments and moderately positive performance in the other moments; and Cluster 3 characterised by moderate to high performance in the EO and SP moments.

Contextual variables

There were four contextual variables measured within this

study: match venue, opposition quality, multiple goals scored within a game, and competing playing styles. With respect to match venue, all games were defined as either home or away. Regarding opposition quality, opponents were considered either top 10 or bottom 10 based on end of season ranking, similar to a previously reported method (Taylor et al., 2008). Multiple goals refers to the sum of goals scored by both teams within a game. Competing game styles examines the match outcome when the combination of each team's game style is considered.

Approval for research use of OptaPro's data was supplied by the company through written consent. Institutional Ethics approval was granted by the University of South Australia under section 5.1.22 of the NHMRC National Statement of Ethical Conduct in Humans.

Statistical analysis

The interactions between cluster membership (as the measure of game style played by each team) when contextual variables changed, were investigated. This involved determining the odds ratio for cluster membership for different match venues, opposition strengths, and a combination of both variables, using logistic regression analysis. Additionally, cluster membership and goals per game, and cluster membership and match result, were also investigated using the same statistical analysis. Significance was set at $p < 0.05$. All analyses were performed using the statistical package IBM SPSS Statistics v.20.0.

Results

The odds ratios describing the interactions between cluster membership and the contextual factors of match venue and opposition quality are displayed in Table 1.

Venue

Compared to teams playing a reference game Style 1, teams were more likely to play Style 2 ($p < 0.05$) or Style 3 ($p < 0.001$) when playing at home. When comparing to Style 2, teams were more likely to play Style 3 ($p < 0.05$) at home. When playing away, teams were less likely to play either Style 2 ($p < 0.05$) or Style 3 ($p < 0.001$) compared to Style 1. They were also less likely to play Style 3 ($p < 0.001$) compared to Style 2.

Opposition quality

In regard to playing against a top 10 side, teams were less likely to play Style 3 compared to Style 1 ($p < 0.001$) or Style 2 ($p < 0.001$). In contrast, against bottom 10 sides, teams were more likely to play Style 3 compared to either Style 1 ($p < 0.001$) or Style 2 ($p < 0.001$).

Venue and opposition quality

When considering both venue and opposition quality, there was an increased likelihood of teams playing Style 3 at home against bottom 10 opposition, in comparison to either Style 1 ($p < 0.001$) or Style 2 ($p < 0.001$). However, in comparison to Style 1 against top 10 opposition at home, teams were less likely to play Style 3 ($p < 0.001$) or Style

2 ($p < 0.001$). When playing away against bottom 10 opposition, there was an increased likelihood of playing Style 3 games compared to either Style 1 ($p < 0.001$) or Style 2 ($p < 0.001$). However, against top 10 opposition away, it was less likely teams would play Style 3 compared to both Style 1 ($p < 0.001$) and Style 2 ($p < 0.001$).

Multiple goals and game styles

Table 2 shows the likelihood of resultant game styles in reference to when two competing teams were both playing the same style (for example, Style 1 vs Style 1). When compared to the reference combination of Style 1 vs Style

1 games, there was an increased likelihood of two or more goals being scored with any other playing combination ($p < 0.05$).

Winning result and game styles

Compared to a reference combination where at least one team was playing Style 3, there was a reduced likelihood of a winning result if neither team were playing Style 3 ($p < 0.001$; Table 2). Conversely, compared to at least one team playing Style 1, a game was more likely to have a winning result if neither team were playing Style 1 ($p < 0.001$).

Table 1. Effects of match venue and opposition quality on game style odds ratios.

Variable	Reference game style	n	β	Style 2			n	β	Style 3	
				95% CI	P	95% CI			P	
Home	Style 1	511	1.509	1.117, 2.366	0.005	519	2.544	1.786, 3.624	<0.001	
	Style 2	-	-	-	-	490	1.529	1.068, 2.189	0.021	
Away	Style 1	511	0.601	0.423, 0.855	0.005	519	0.393	0.276, 0.560	<0.001	
	Style 2	-	-	-	-	490	0.654	0.457, 0.937	0.021	
Top 10	Style 1	511	0.794	0.559, 1.128	0.198	519	0.538	0.251, 0.511	<0.001	
	Style 2	-	-	-	-	490	0.654	0.457, 0.937	0.021	
Bottom 10	Style 1	511	1.260	0.886, 1.790	0.198	519	2.793	1.955, 3.990	<0.001	
	Style 2	-	-	-	-	490	2.218	1.542, 3.190	<0.001	
Home & Top 10	Style 1	227	0.995	0.586, 1.691	0.986	257	0.419	0.251, 0.697	0.001	
	Style 2	-	-	-	-	276	0.421	0.259, 0.684	0.001	
Home & Bottom 10	Style 1	227	1.005	0.591, 1.707	0.986	257	2.389	1.435, 3.977	0.001	
	Style 2	-	-	-	-	276	0.421	0.259, 0.684	0.001	
Away & Top 10	Style 1	284	0.644	0.399, 1.037	0.070	262	0.293	0.172, 0.498	<0.001	
	Style 2	-	-	-	-	214	0.455	0.259, 0.798	0.006	
Away & Bottom 10	Style 1	284	1.554	0.965, 2.503	0.070	262	3.418	2.007, 5.822	<0.001	
	Style 2	-	-	-	-	214	2.200	1.253, 3.862	0.006	

n number of games, style = cluster membership, β beta coefficient for Odds Ratio, CI Confidence Interval, $p < 0.05$.

Table 2. Effects of game styles played within a match and both number of goals scored and winning result odds ratios.

Variable	Reference game style	Multiple Goals Scored			
		n	β	95% CI	P
Match with any playing style combination (≥ 2 total goals)	Style 1 vs Style 1	70	1.700	1.017, 2.842	<0.050
Match with any playing style combination (< 2 total goals)	Style 2 vs Style 2	120	0.969	0.617, 1.522	0.891
Match with any playing style combination (< 2 total goals)	Style 3 vs Style 3	36	1.882	0.772, 4.591	0.165
Variable	Reference game style	Winning Result			
No team playing Style 1	At least one team playing Style 1	270	3.675	2.577, 5.240	<0.001
No team playing Style 2	At least one team playing Style 2	241	1.153	0.840, 1.582	0.378
No team playing Style 3	At least one team playing Style 3	249	0.347	0.253, 0.475	<0.001

n number of games, style = cluster membership, β beta coefficient for Odds Ratio, CI Confidence Interval, $p < 0.05$.

Discussion

The current study examined the impact of contextual factors on soccer game styles of teams competing in the 2015-16 English Premier League. Quantifying different playing styles using the moments of play framework provides an objective method for coaches and analysts to examine team performance throughout a season. The three distinct playing styles used in this study were previously described by Gollan et al. (2018). Games defined by Style 1 were characterised by a modest positive performance in established defence. Style 2 involved games dominated by strength in the transition moments, whilst Style 3 was characterised by positive performance in established attack and set pieces. The results of the present study showed patterns in playing

styles demonstrated by teams depending on the venue, opposition quality, total number of goals scored and competing game styles.

Building upon previous research that used a large dataset of game-related variables (Gollan et al., 2018), odds ratio analysis revealed that both playing venue and opposition quality impacted team playing styles. Our results showed home teams favoured established attack over transition or defensive playing styles. These findings are in line with previous research showing teams increase possession when playing at home (Fernandez-Navarro et al., 2018; Lago-Penas and Dellal, 2010; Lago and Martin, 2007; Tenga et al., 2010a). Specifically, Fernandez-Navarro and colleagues (Fernandez-Navarro et al., 2018) showed that home teams are more likely to play with longer

possession chains (what they term "build up" and "sustained threat"), and reduce the volume of direct play, a style similar to our description of transition play. Conversely, when playing away, teams were more likely to play in a defensive manner, supporting the evidence of a home advantage in soccer (Lago-Penas and Lago-Ballesteros, 2011). This phenomenon has been widely researched and is likely multi-faceted (Goumas, 2014; Pollard and Pollard, 2005). When considering the current findings and results of previous studies, it appears teams may consciously or subconsciously approach the game with a defensive mindset depending on game venue (Pollard and Pollard, 2005). Previous research has revealed that away teams are more likely to adopt a deeper defensive positioning, and demonstrate a reduced likelihood of quick ball repossession following a turnover (Almeida et al., 2014; Santos et al., 2017). These behaviours can potentially facilitate the home team's opportunities to show more attacking game styles, whilst for the away team, this may translate into numerous differences in tactics and movement patterns. Overall, the results show a game style based on relative strength in the transition moments (i.e. Style 2) is more likely to occur over an established offensive style when playing away. Successful transition involves rapid ball movement and typically relies on a small number of players exploiting open spaces created by player imbalance (Hewitt et al., 2016; Lago-Ballesteros et al., 2012; Tenga et al., 2010b). This playing style may be preferred over established offence, as it allows players not involved in the transition sequence to remain in the back third in a predominantly defensive position. Consequently, this reduces player density higher up the field, in turn creating space for teammates to undertake rapid attacking movements. It has been suggested that a game style based on strength in the transition moments may suit teams whose playing personnel have the physical attributes suited for this style of game (Gollan et al., 2018; Hewitt et al., 2016).

When teams were divided into top 10 or bottom 10 based on end of season finishing position, there was a significant change in playing style depending on opposition quality. In line with previous research, lower-ranked teams were more likely to play defensively against a higher-ranked team (Bradley et al., 2014; Lago, 2009), whilst stronger teams have been shown to use a possession-based strategy against weaker opposition (Fernandez-Navarro et al., 2018). Fernandez-Navarro and colleagues (2018) suggested weaker teams prefer to keep players closer to their own goal, resulting in a reduction of playing styles centred on ball possession. It is possible that higher-ranked teams impose their playing style on a less-skilled team, forcing them to compromise their own strategies and play in a manner reflective of Style 1. Additionally, higher-ranked teams have been shown to recover the ball quicker than poorer performing teams (Vogelbein et al., 2014), suggesting the focus for lower-ranked teams may be on restoring defensive balance rather than optimising attacking opportunities. In some instances, the aim of weaker teams may be to reduce the odds of losing rather than maximise the chances of winning. Lastly, it must be acknowledged that this study considers quality of opposition based on end of season

ranking, and does not account for in-season ladder position when teams compete against one another.

Results from the present study show that when playing venue and opposition quality were combined, the strength of the opposition has a greater influence on playing patterns than match location. Specifically, when teams were playing at home (which generally increases the likelihood of playing Style 3 in comparison to both Style 2 and Style 1) but against stronger opposition, they were more likely to play a defensive style (Style 1). These findings are similar to those reported by Lago (2009), who showed a reduction in team possession when playing away against stronger opposition. Interestingly, our results revealed that stronger teams were more likely to play Style 3 when playing away against bottom 10 opposition. This suggests there is a hierarchical order between contextual variables, to the extent that opposition quality has a greater influence on playing style than match location.

Concerning the interaction between game styles and the likelihood of a winning result, the findings from our research are somewhat intuitive. A common theme is that games characterised by neither team playing Style 1 were more likely to end with a winning result, whilst the opposite is true for games involving Style 3. Further evidence for the lack of success seen with Style 1 games is revealed in the analysis of goals scored within a game. Unsurprisingly, two or more goals in a match were more likely to occur in any combination of playing styles except Style 1 vs Style 1. It can be reasonably suggested that teams do not choose to play in a defensive manner, but rather their playing style is compromised by stronger opposition, resulting in one team imposing their playing style on the game. Whilst momentum may change within a game, it appears the stronger team will generally control the game style seen in a match.

It must be acknowledged that limitations occur within this research. This research does not consider managerial changes occurring within 2015-16 season, whereby conflicting coaching philosophies may impact how a team played. Weekly changes in playing personnel may also influence game styles, as technical and physical attributes of players may alter preferred playing patterns. Future research employing the moments of play methodology may wish to investigate the physical demands required of different game styles. In future, with the use of microtechnology such as Global Positioning Systems, movement demands of playing styles within different contexts may be assessed across games or seasons.

Conclusion

This study showed the effect of contextual variables on game styles played by teams in the EPL in 2015-16 season. Using the moments of play framework, teams were more likely to play an offensive style at home and more defensive when playing away. Opposition quality also showed similar patterns on game style played. The combination of both venue and opposition quality showed that opposition strength had a greater influence on playing style than venue location. Match-ups where teams played different game

styles were shown to impact both total match goals and result. The moments of play framework has been shown to be a useful tool to help interpret the effects of contextual factors on a team's game style.

Acknowledgements

The authors would like to thank OptaPro for supplying the raw data, and Dr Grant van der Ploeg for his support. The study complied with the laws of the country of the authors' affiliation. The authors have no conflict of interest to declare.

References

- Almeida, C.H., Ferreira, A.P. and Volossovitch, A. (2014) Effects of match location, match status and quality of opposition on regaining possession in UEFA Champions League. *Journal of Human Kinetics* **41**, 203-214.
- Bradley, P.S., Carling, C., Archer, D., Roberts, J., Dodds, A., Di Mascio, M., Paul, D., Gomez Diaz, A., Peart, D. and Krstrup, P. (2011) The effect of playing formation on high-intensity running and technical profiles in English FA Premier League soccer matches. *Journal of Sports Sciences* **29**, 821-830.
- Bradley, P.S., Lago-Penas, C., Rey, E. and Sampaio, J. (2014) The influence of situational variables on ball possession in the English Premier League. *Journal of Sports Sciences* **32**, 1867-1873.
- Carling, C. (2011) Influence of opposition team formation on physical and skill-related performance in a professional soccer team. *European Journal of Sport Science* **11**, 155-164.
- Collet, C. (2013) The possession game? A comparative analysis of ball retention and team success in European and international football, 2007–2010. *Journal of Sports Sciences* **31**, 123-136.
- da Mota, G., Thiengo, C., Gimenes, S. and Bradley, P. (2016) The effects of ball possession status on physical and technical indicators during the 2014 FIFA World Cup Finals. *Journal of Sports Sciences* **34**, 493-500.
- Fernandez-Navarro, J., Fradua, L., Zubillaga, A., Ford, P. and McRobert, A. (2016) Attacking and defensive styles of play in soccer: analysis of Spanish and English elite teams. *Journal of Sports Sciences* **34**, 2195-2204.
- Fernandez-Navarro, J., Fradua, L., Zubillaga, A. and McRobert, A. (2018) Influence of contextual variables on styles of play in soccer. *International Journal of Performance Analysis in Sport* **18**, 423-436.
- Folgado, H., Lemmink, K., Frencken, W.Sampaio, J. (2014) Length, width and centroid distance as measures of teams tactical performance in youth football. *European Journal of Sport Science* **14** (Supplementary 1), 487-492.
- Frencken, W., Lemmink, K., Delleman, N., Visscher, C. (2011) Oscillations of centroid position and surface area of soccer teams in small-sided games. *European Journal of Sport Science* **11**, 215-223.
- Gollan, S., Ferrar, K. and 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**, 998-1009.
- Gomez, M.-A., Mitrotasios, M., Armatas, V. and Lago-Penas, C. (2018) Analysis of playing styles according to team quality and match location in Greek professional soccer. *International Journal of Performance Analysis in Sport* 1-12.
- Gonzalez-Rodenas, J., Lopez-Bondia, I., Calabuig, F., Perez-Turpin, J.A. and Aranda, R. (2016) Association between playing tactics and creating scoring opportunities in counterattacks from United States Major League Soccer games. *International Journal of Performance Analysis in Sport* **16**, 737-752.
- Goumas, C. (2014) Home advantage and referee bias in European football. *European Journal of Sport Science* **14** (Supplementary 1), S243-249.
- Hewitt, A., Greenham, G. and Norton, K. (2016) Game style in soccer: what is it and can we quantify it? *International Journal of Performance Analysis in Sport* **16**, 355-372.
- Hughes, M. and Franks, I. (2005) Analysis of passing sequences, shots and goals in soccer. *Journal of Sports Sciences* **23**, 509-514.
- Kempe, M., Vogelbein, M., Memmert, D. and Nopp, S. (2014) Possession vs. direct play: evaluating tactical behavior in elite soccer. *International Journal of Sports Science* **4**, 35-41.
- Lago-Ballesteros, J., Lago-Penas, C. and Rey, E. (2012) The effect of playing tactics and situational variables on achieving score-box possessions in a professional soccer team. *Journal of Sports Sciences* **30**, 1455-1461.
- Lago-Penas, C. and Dellal, A. (2010) Ball possession strategies in elite soccer according to the evolution of the match-score: the influence of situational variables. *Journal of Human Kinetics* **25**, 93-100.
- Lago-Penas, C., Gomez-Ruano, M. and Yang, G. (2017) Styles of play in professional soccer: an approach of the Chinese Soccer Super League. *International Journal of Performance Analysis in Sport* 1-12.
- Lago-Penas, C. and Lago-Ballesteros, J. (2011) Game location and team quality effects on performance profiles in professional soccer. *Journal of Sports Science & Medicine* **10**, 465-471.
- Lago-Penas, C., Lago-Ballesteros, J., Dellal, A. and Gomez, M. (2010) Game-related statistics that discriminated winning, drawing and losing teams from the Spanish soccer league. *Journal of Sports Science and Medicine* **9**, 288-293.
- Lago, C. (2009) The influence of match location, quality of opposition, and match status on possession strategies in professional association football. *Journal of Sports Sciences* **27**, 1463-1469.
- Lago, C. and Martin, R. (2007) Determinants of possession of the ball in soccer. *Journal of Sports Sciences* **25**, 969-974.
- Liu H, Hopkins W, Gómez M, Molinuevo J. (2013) Inter-operator reliability of live football match statistics from OPTA Sportsdata. *International Journal of Performance Analysis in Sport* **13**(3), 803-821.
- Pollard, R. and Pollard, G. (2005) Home advantage in soccer: A review of its existence and causes. *International Journal of Soccer Science* **3**, 28-38.
- Santos, P., Lago-Penas, C. and Garcia-Garcia, O. (2017) The influence of situational variables on defensive positioning in professional soccer. *International Journal of Performance Analysis in Sport* **17**, 212-219.
- Sarmento, H., Figueiredo, A., Lago-Peñas, C., Milanovic, Z., Barbosa, A., Tadeu, P. and Bradley, P.S. (2018) Influence of Tactical and Situational Variables on Offensive Sequences During Elite Football Matches. *The Journal of Strength & Conditioning Research* **32**, 2331-2339.
- Taylor, J.B., Mellalieu, S.D., James, N. and 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* **26**, 885-895.
- Tenga, A., Holme, I., Ronglan, L. and Bahr, R. (2010a) Effects of match location on playing tactics for goal scoring in Norwegian professional soccer. *Journal of Sport Behavior* **33**, 89-108.
- Tenga, A., Ronglan, L. and Bahr, R. (2010b) Measuring the effectiveness of offensive match-play in professional soccer. *European Journal of Sport Science* **10**, 269-277.
- Turner, B.J. and Sayers, M.G.L. (2017) The influence of transition speed on event outcomes in a high performance football team. *International Journal of Performance Analysis in Sport* **10**, 207-220.
- Vogelbein, M., Nopp, S. and Hokelmann, A. (2014) Defensive transition in soccer—are prompt possession regains a measure of success? A quantitative analysis of German Fussball-Bundesliga 2010/2011. *Journal of Sports Sciences* **32**, 1076-1083.
- Wallace, J.L. and Norton, K.I. (2014) Evolution of World Cup soccer final games 1966-2010: game structure, speed and play patterns. *Journal of Science and Medicine in Sport* **17**, 223-228.
- Yang, G., Leicht, A., Lago, C. and Gomez, M. (2018) Key team physical and technical performance indicators indicative of team quality in the soccer Chinese super league. *Research in Sports Medicine* 1-10.
- Yiannakos, A. and Armatas, V. (2006) Evaluation of the goal scoring patterns in European Championship in Portugal 2004. *International Journal of Performance Analysis in Sport* **6**, 178-188.

Key points

- Game styles in soccer are influenced by contextual factors such as opposition quality, playing venue, total match goals scored and competing playing styles.
- There appears to be a hierarchical order between contextual factors, with opposition quality having a larger influence on game style than playing location.
- The moments of play framework provides a practical and cost effective tool for assessing games styles in soccer.

AUTHOR BIOGRAPHY

Stuart GOLLAN

Employment

A PhD candidate in the Alliance for Research in Exercise, Nutrition and Activity at the University of South Australia.

Degree

BHlthSc (Hons)

Research interests

Quantifying game styles in soccer

E-mail: stuart.gollan@mymail.unisa.edu.au

Clint BELLENGER

Employment

A Lecturer in Human Movement, Exercise and Sport Science at the University of South Australia.

Degree

PhD

Research interests

The effects of training-induced fatigue on autonomic heart rate regulation, training load monitoring in endurance sports and quantifying match demands in team sports.

E-mail: 11robertsholto@gmail.com

Kevin NORTON

Employment

Professor in Exercise Science at the University of South Australia.

Degree

PhD

Research interests

The evolution of sports performance, health screening, physical activity promotion, and the limits of human work capacity.

E-mail: kevin.norton@unisa.edu.au

✉ Stuart Gollan

Alliance for Research in Exercise, Nutrition and Activity (ARENA) School of Health Sciences, University of South Australia, Adelaide, South Australia, Australia