

28th ECSS Anniversary Congress, Paris/France, 4-7 July 2023

How winning teams kick for success in Rugby Union: A big data approach

Scott, G.A., Bezodis, N.E., Bennett, M., Church, S., Waldron, M., Kilduff, L.P., Brown, M.R.

Swansea University

INTRODUCTION:

Studies within Rugby Union have repeatedly identified kicking as a key indicator of success (1,2), yet no further analysis has been completed to quantify why. While it has been demonstrated that out-kicking your opposition is strategically important, a greater contextual understanding is required to allow deployment of actionable interventions to promote improved outcomes. Given this, the aims of this study were i) to profile the kicks taken during a season of the United Rugby Championship and ii) to quantify whether these kicks differed between winning and losing teams.

METHODS:

Coded video analysis files were downloaded from 144 matches within the 2021-22 season of the United Rugby Championship. Sequences containing kicks were isolated and the kicks in each sequence collected (n=6587). For each kick, the type was identified, and allocated to one of five zones across the field. The proportion of kick type and kicks taken in each zone was recorded across the full dataset and then divided into winning and losing team kicks, according to match outcome. The outcome of each sequence was obtained and defined a positive, negative, and neutral outcome. The proportion of positive outcomes were compared between winners and losers within each kick type and zone using Chi-Squared test of association. The rate per sequence of actions made within kicking sequences were calculated for winning and losing teams and compared using two sample Poisson test.

RESULTS:

Winning teams kicked more than losing teams in all zones of the field and all kick types. However, both teams had a similar distribution across the field and by kick type, proportional to their total number of kicks. Winning teams had significantly higher percentage of positive sequences outcomes when they kicked from their opposition 10-22m (38% vs. 31%) and their own 10-22m zones (43% vs. 32%). Winners also had significantly higher positive sequences outcomes when completing bomb (51% vs. 38%), territorial (38% vs. 33%) and low kicks (42% vs. 32%). Successful teams also recorded a higher rate of attacking qualities, alongside their use of different kick types and in different zones.

CONCLUSION:

Winning teams implement effective kicking strategies in both their own half and opposition half, suggesting that both attacking and defensive kicking styles are required for winning outcomes. Territorial kicks were identified as important to winning sides, alongside bomb and low kicks, suggesting that a combination of both longer, territorial kicks and shorter, contestable kicks can be utilised to promote positive outcomes. The rate at which teams perform attacking qualities, such as completing line breaks, was also important for winning, highlighting the importance of the actions of surrounding players prior, during and after the kicks to support positive sequence outcomes.

1) Bennett M et al., 2019, J Sci Med Sport.

2) Scott G et al., 2022, J Sci Med Sport.

Topic: Statistics and Analyses

Presentation Oral

European Database of Sport Science (EDSS)

Supported by SporTools GmbH



32642