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Categorisation of the Play Style of Rugby Players by Principal Component Analysis and Cluster Analysis

(主成分分析とクラスター分析によるラグビー選手のプレースタイルの分類)

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Abstract

The aim of this study was to evaluate rugby player performance by using principal component analysis (PCA) and cluster analysis (CA). We categorised players based on their on-field actions regardless of position. We used the data of 80 games in the Japan Rugby Top League 2015-2016 season and analysed 231 players who played over 400 minutes in the season. We used 16 items and extracted from them four principal components: “Ball Carry”, “Defence and Competing for Possession”, “Handling and Passing the ball”, and “Turnover”. From the principal component scores, the role of each position seems to be roughly identified. In addition, the players quantified by the four component scores were categorised into six clusters using CA according to their play styles. The play style of the player was categorized from the frequency data of the on-field actions of the player. These play styles consist of “Chance maker”, “Penetrator”, “Tackler and Support player”, “Competitor”, “Play maker”, and “Spoiler”. Categorisation on play style by CA was realised regardless of position, and we can identify peculiar players in the position. Also, this method seems to show a difference between Japanese players and foreign players in the play style. This will be helpful for coaches and selectors to understand characteristics of players.