

7. ABSTRACT

ANALYSIS OF GAME INDICATORS DETERMINING PERFORMANCE AT THE WORLD-CLASS LEVEL IN BASKETBALL

The aim of the study was to analyze game **indicators** which determine the performance of men's national basketball teams during the FIBA (fr. Fédération Internationale de Basketball) Basketball World Cup 2019 held in China. The analysis was based on audiovisual recordings of sixty-three World Cup matches between teams classified in the top 8 of the championship. Firstly, two independent observers analyzed each game in accordance with the observation sheet. Secondly, the three groups of **variables** were calculated using original *Wilczewski, Marszałek* software: (a) basic **variables**, (b) time **variables** – related to the time and pace of the actions played, and (c) sequences of actions **variables** – based on effective and ineffective sequences of team actions. In total 110 **variables** were calculated. Thirdly, extracted data were reduced to 20 variables using Spearman correlation and analyzed with statistical methods including the qualification matrix, linear ordering, cluster analysis and the ROC curve. The results show that there is a significant correlation between championships ranking and each of the following variables: free throws from the foul limit, a sequence of six successful plays, the number of successful attacks in the 21-24 seconds interval, sequence of two runs without scoring, sequence of seven runs without scoring and the effectiveness of rebounds. Moreover, it is possible to create a model of qualification correctness based on analyzed variables in relation to ranking in the championship of total correctness 82,61% for places 1-4 and 84,78% for places 5-8. It was shown that the actual and theoretical rankings were strongly and positively correlated ($R = 0.88$, $p = 0.0039$). Based on extracted variables, two taxonomically homogeneous groups with a similar distribution of variables can be constructed. The first group consists of Spain, France, Australia, Serbia, and Argentina national teams, while the second group includes Czech, Poland and USA. At last, using logistics regression, two variables that best predict the probability of victory were extracted, such as an increase in the number of successful actions in the time range of 21-24 seconds and an increase in the number of points scored. Three best predictors of defeat were: decrease in the number of sequence of two actions without a point, the number of sequence of eight actions without points and the number of unsuccessful attacks in the time range of 17-20 seconds. The results of the present study may help coaches to design better training programs, and to improve individual and cooperation skills in the teams at different level of competition.