

Abstract

Title: The relationship of the toss to the success of the first service in tennis

Objectives: The main aim of this work is to determine how the toss impacts the success rate of first tennis serve for both amateur and professional players.

Methods: The initial data set was obtained by method of indirect observation using video recording of 8 professional and 2 amateur players. Each of them did 40 direct serves which were recorded and processed using Dartfish 10 software. Followingly the serves were sorted into categories - successful, into net, out - long ball and out - on the side. Acquired data was processed using statistical (ANOVA) and effect size (Cohen's d) significance.

Results: Based on substantive significance it can be said that for the y-axis the players only reached values of low effect with their serves. Larger effect of substantive significance, namely $d=0.94$, was reached by average values among serves which were played into the net or were out on the side. Balls, which were hit by professional at highest average height of 273.7 cm ended up as long ball out. On the contrary, tosses hit at average distance of 63.7 cm from the baseline ended up in the net. A good serve was achieved at average distance of 61.6 cm from the baseline and at average height of 272.9 cm.

Keywords: tennis, kinematics, hit, player, observation