FACTORIAL ANALYSIS OF KICKING LEG, KICKING TYPE, AND KICKING AREA ON SOCCER PLAYERS' ACURRACY DURING DIRECT FREE KICKS.

Jean Carlos Rivera Pabón
Universidad del Turabo
P.0. Box 3030 Gurabo, P.R. 00778-3030
jcrivera.pabon@gmail.com

José A. Santiváñez Guarniz
Universidad del Turabo
P.0. Box 3030 Gurabo, P.R. 00778-3030
santivanezj@suagm.edu

Nitza M. García Berrios
Universidad del Turabo
P.0. Box 3030 Gurabo, P.R. 00778-3030
nitza_marie@yahoo.com

Jorge Soto Matos
Universidad del Turabo
P.0. Box 3030 Gurabo, P.R. 00778-3030
george-soto_28@hotmail.com

ABSTRACT

In the history of soccer, free kicks have been a fundamental opportunity to determine the result of many matches. Commonly, most teams have one or two free kick takers, designated depending on the relative position and distance from the goal to the free kick area. There are different techniques to perform a free kick such as push kick or inside-of-the-foot kick, instep kick, and outside kick. The first two are usually used by amateur and professional soccer players and the last ones are most likely to be used and mastered by elite free kick takers such as Roberto Carlos or Juan Román Riquelme. Normally most teams have at least one free kick per match, and in some cases; it is the only opportunity to score a goal. Therefore, before an official game, the team coach needs to know kick technique, leg, and player that should be selected to do a free kick according to the side and the distance from the goal. The purpose of this experiment design is to determine the most viable player, kicking leg, and kicking technique to score a goal when a direct free kick occurs during a match. Research has been performed with the Univesidad del Turabo's soccer team and its four free kick takers (two right-handed and two left-handed players) selected by the coach. To perform this experiment, four critical free kick areas were selected, where the players had to use the following: two kicking legs (dominant and non-dominant legs), two kicking types (push and instep kick). The project team performed a Randomized Complete Block Design model to achieve its purpose. The experimental results showed that the kicking leg and the kicking type had a significant effect on the accuracy of the kickers, and that players are more accurate using their dominant leg and the inside-of-foot kick. Tukey tests with 95% of confidence interval showed that the dominant leg and non-dominant leg as well as the push kick and instep kick are significantly different. Finally, the research team provided the coach with a recommendation of the most viable player to carry out the free kick according to its location. According to the coach, these results and recommendations where favorable to his decision making process of selecting the player and kick technique to execute free kicks during the matches of the next college soccer season during the Liga Atlética Interuniversitaria (LAI) of Puerto Rico 2012-2013.

KEYWORDS. Free kicks. Dominant and non-dominant legs. Push and instep kick.