

IMPORTANCE OF KEY PASSES IN FOOTBALL BASED ON FINAL OUTCOME OF THE MATCH AND LEAGUE SYSTEM OF COMPETITION

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Abstract

Based on 88 matches in 2014/2015 first Croatian football league we established the importance of key passes as a situational efficacy indicator of final outcome of the match and the league competition system. Applying Mann-Whitney test showed that key passes bring a statistically significant difference for the defeated team ($p=0,02$). On the other hand, observing the correlation coefficient (0,33) we can see a very low positive correlation of key passes and final placement in league system of competition. Teams which create more situations for goal scoring in a longer time period probably have a higher degree of technical and tactical quality, but a key pass indicator does not mean much if the efficiency of this type of cooperation is not high as well – meaning if the key pass does not turn into assisting. According to this, we need to keep track of key passes as situational efficacy indicators in order to eventually see the differences between winner team and defeated team and connect it to final placement.

Key words: situational efficacy, notational analysis, football, key passes

Introduction

A football match is a confrontation of two teams. Team controlling the ball is in offense phase, while the other one is in defense phase. Offense team organizes strikes through players cooperating and communicating with each other and acting individually in order to create beneficial conditions for scoring a goal. On the other side, defense team is trying to stop the offense and claim the ball with no goals received, all according to the rules. Offense phase starts when one team's players gain control over the ball in any part of the field thanks to the opponent's mistake or their own players' activity in defense phase. During offense phase, players usually come to chances for goal scoring after cooperating with others. A quality cooperation of two or more players leads to goal-scoring opportunity. If the player finds himself in a situation which could lead to goal scoring thanks to his co-player's pass, this is called a key pass. Key pass is an event during offense phase when one player creates an opportunity for the other player to score a goal – leading to a goal kick from no more than third touch (if no blocking occurred) or a one-on-one situation with opponent goalie and (regardless of number of touches) scored a goal (Bašić et al., 2015). Key pass as a situational efficacy indicator can be relevant in football when related to match outcome and team placement in league system of competition.

Methods

Analysis material

Research was done on 88 matches from MAXTV first Croatian football league. We analyzed one half-season consisting of 90 matches. Due to technical difficulties one match was not filmed, and one ended in score 3:0 because of rule-breaking.

Sample

In this research, entities are teams. First Croatian football league has 10 clubs.

Variable sample

Matches were described using notated performance indicators (variables) of assistance (Bašić et al., 2015)

Data collection

The matches were filmed on HDD/DVD in form of a video. Using specialized computer tool – Courteye – matches were analyzed and prepared for data analysis. Five notators worked on this project.

Statistical analysis

To establish reliability of gathered data we used intra-observer variability for differences between data gathered by the same notator on two different occasions (Hughes et al., 2002, 2003, 2004). For assisting we have reliability of 100%. To establish differences between winning team and the defeated team, we used Mann-Whitney test and Pearson coefficient of correlation to determine the connection of performance indicators to final outcome of the match.

Results

Table 1. Arithmetic mean (AM) and standard deviation (SD) of key passes for the winning team (WIN) and defeated team (DEF) with z-value (z) to determine differences and error significance (p)

	AM	SD	z	p
WIN	2,91	3,25	2,32	0,02
DEF	1,81	2,01		

Table 2. Final distribution of teams after a half-season (TEAM), total number of matches played (NM), number of victories (NOV), draws (D) and losses (LOSS), as well as the number of points (PTS), number of points per match (PTS/M) and total number of key passes (N-KP), arithmetic mean of key passes (AM-KP) and coefficient of key passes correlation to final placement (r)

TEAM	NM	NOV	D	LOSS	PTS	PTS/M	N-KP	AM-KP
Dinamo	17	13	4	0	43	2,53	42	2,47
Rijeka	18	12	3	3	39	2,17	44	2,44
Hajduk	17	8	5	4	29	1,71	33	1,94
Lokomotiv	18	7	4	7	25	1,39	53	2,94
Zagreb	18	6	6	6	24	1,33	35	1,94
Slaven	17	5	5	7	20	1,18	35	2,06
Split	17	3	8	6	17	1,00	21	1,24
Istra 1961	18	3	7	8	16	0,89	16	0,89
Osijek	18	4	3	11	15	0,83	57	3,17
r=0,33								

Discussion and conclusion

Based on results (Table 1 and 2) of correlation coefficient ($r=0,33$) and difference between arithmetic mean of winner team ($AS=2,91$) and defeated team ($AS=1,81$), which is statistically significant ($p=0,02$), we can conclude that *key passes*, as situational efficacy indicator, lead to a statistically important difference between winner team and defeated team, but are also very weakly connected to final placement in league system of competition. Even though they have a low correlation coefficient and are less reliable (63%) because they are difficult to define (not all situations have the same possibilities for all players), we can still say that *key passes*, pose a good difference between winners and defeated, based on arithmetic mean differences. Key passes point to a high level of player's technical and tactical knowledge. In order for the player to perform a key pass, he must have good individual offense tactics, but so must the co-player who has the opportunity to score a goal. Key pass helps score a goal; meaning the player who receives the ball must read time and space relations on the field quite well in order to control them. Also, during analysis of certain players' game, one must take into consideration key passes, because a player can do little assisting and a lot of key passes so we could reach the wrong conclusion if we observe assisting only – he creates valuable situations for his co-players based on his qualities, but due to their lesser quality of realization of those opportunities he does not get to do much of

assisting. On a team level, a greater number of key passes can point to a greater ball possession (total time of ball possession), ability to win over field space and bring offense phase to its end, and a high level of combinatorics, empty space creation and run-in, and game transition (positive transition). In research connected to situational efficacy estimation (level of success in football) there is no such term as *key passes*. The reason for this is the fact that it requires a complex definition (even though it is a creative term which shows a real quality of the player). If the team shows a large number of mentioned parametre, we can conclude that the team solves game problems as a collective, which proves quality. If it's about observing only (analyzing a certain player only), parametres point to his individual qualities of functioning within the team. Based on results for the variable *key passes* we can conclude that it differentiates in a statistically significant way between winner team and defeated team, but does not have a high correlation with final placement in league system of competition. Teams with higher number of key passes show a more quality management of some parts of the match. Also, team with more offense time has a psychological advantage and spends less energy on the field.

Team that has the ball dictates game tempo and rhythm; if they have more key passes that means the players have more opportunities to score a goal, which shows a higher probability to score.

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VAŽNOST KLJUČNIH DODAVANJA U NOGOMETU TEMELJENO NA KRAJNJEM ISHODU UTAKMICE I SUSTAVU LIGE NATJECANJA

Sažetak

Na temelju 88 utakmica prve Hrvatske nogometne lige sezone 2014/2015 utvrđivana je važnost ključnih dodavanja kao pokazatelja situacijske efikasnosti na konačan ishod utakmice i ligaški sustav natjecanja. Primjenom Mann-Whitneyjevog testadobiveno je da ključna dodavanja statistički značajno razlikuju pobjedničke od poraženih ekipa ($p=0,02$). S druge strane, promatranjem koeficijenta korelacije (0,33) vidljiva je vrlo niska pozitivna povezanost ključnih dodavanja s krajnjim plasmanom u ligaškom sustavu natjecanja. Ekipe koje u određenim vremenskim periodima tijekom utakmice stvore više izglednih situacija za postizanje pogodaka, naravno da vrlo vjerojatno pokazuju i viši stupanj tehničko – taktičke kvalitete, ali isto tako pokazatelj ključnih dodavanja kroz duži vremenski period ne znači puno ukoliko i efikasnost takvih vidova suradnje nije visoka, odnosno ako ključno dodavanje ne postane asistencija. Sukladno navedenom, potrebno je pratiti ključna dodavanja kao pokazatelj situacijske efikasnosti kako bi se moglo eventualno uvidjeti razlike između pobjednički i poraženih ekipa i dovesti u određenu povezanost s krajnjim plasmanom.

Ključne riječi: situacijska efikasnost, notacijska analiza, nogomet, ključna dodavanja

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