

THE IMPORTANCE OF VIDEO ANALYSIS IN HUNGARIAN FOOTBALL

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ABSTRACT. In results-oriented football, teams use innovative technologies to increase efficiency. One of these technologies is video analytics, and we explore its importance in Hungarian football. Our research hypotheses are based on assumptions, based on which we interviewed video analysts of NB1 teams who were given a questionnaire with different questions to answer and based on their answers we evaluated their opinion on video analytics, what advantages and disadvantages could be derived from the use of video analytics. Also, how many video analysts per team are employed by an NB1 team and to what extent video analysts cooperate with scouts to help them identify talent? In our research, 20 NB1 video analysts have completed the questionnaire so far. Statistical calculations were calculated using a one-sample Wilcoxon test and a binomial test. The video analysts' answers showed that video analysis is actively used to analyze the opponent's game. Furthermore, video analysis is also used to analyze player performance, to develop training plans and to select new players. All in all, it can be clearly concluded that the use of video analysis has more advantages than disadvantages and that video analysis plays a positive role in Hungarian NB1 football.

Keywords: *football, video analysis, questionnaire.*

INTRODUCTION

Professional football is a huge business today, a \$30 billion (Cotta, 2016) business globally every year, so football teams want to get the best possible results. This focus on results means that teams are using newer and newer

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technologies to increase efficiency, not only in the preparation process, but also in in-match and post-match analysis. The introduction of new technological developments is supported and adopted not only by teams, but also by the International Football Federation (FIFA) (Peña & Touchette, 2012). My work mainly aims to both assess and research the importance of video analytics in Hungarian football. The aim of my research is to examine the importance of the role of video analysis in Hungarian football and to point out the advantages and disadvantages of video analysis. According to Csáki and Takács (2020), the role of video analysis varies from age group to age group as the objectives are different for each target group. The role of video analytics in youth football is different from that in adult football. While in the early school age video is used playfully, in the adolescent age team video takes over the role, and in the youth age video analysis refers to the tactical requirements of adult football and motivational videos appear. According to Peña and Touchette (2012), starting with the UEFA European Championship in 2008, FIFA has made video analysis a more detailed data analysis tool from 2010 onwards, thus opening up the use of modern techniques in football. According to Cotta (2016), football accounts for 43% of the global sports market, a quantified annual business of \$30 billion and growing. Analysis by Hughes and Franks (2008) shows that the development of video analytics technology has changed the way movements are evaluated and analyzed, which has also influenced training methods. The availability of technological tools now allows coaches to collect information relevant to themselves and their athletes and to examine it continuously to help their athletes develop.

The article by Hughes, Bartlett and Carter (2011) pays particular attention to the advantages and disadvantages of using video analysis and shows how this technique can be usefully applied in football. The authors review the history and current practice of the use of video analysis in professional football and examine how it affects decision-making and performance. Finally, the authors make recommendations for further development and application of video analytics in professional football.

Tenga and Böhm (2010) investigate the use of video analytics in football training. The authors review previous research and publications on the use of video analysis in football and present its benefits and impact on training processes and player performance. They also examine how video analysis can be used most effectively in training to maximize player development. In Franklin and Williams (2010) the influence of video feedback on team tactical behavior in soccer, the authors examine the impact of video analysis on team tactical behavior in soccer. The paper shows how video analysis can be used to improve team tactics and how video analysis-based feedback affects team play. Results show that video analysis improves team tactical awareness and improves team performance on the field.

Lindström, B. (2008) Traces Swedish top-flight football and shows how video analysis has been used in this sport. The paper examines the experience of using video analytics in Swedish top-flight football and looks at how it has helped to improve and achieve success. Carling, Williams and Summerbell (2008) study the impact of video analysis in football on the tactical behavior of under-14 footballers. The authors conducted research with the aim of understanding the impact of video analysis on the tactical behavior of young players and how this behavior can be improved. Based on the results of the research, the authors found that video analysis greatly improved young players' tactical behavior, including situational awareness, decision-making and coordination. Bailey, R., & Drakes, J. (2007) this paper examines the effects of video analysis on the performance and tactical behavior of under-19 football players. They investigate how video analysis affects player performance and how it affects players' tactical attitude. The researchers' results show that video analysis improved players' performance and tactical behavior and increased players' sensitivity to tactical conduct. Hassink and De Meester (2008) the authors present a review of the current literature on the use of video analysis in sports coaching. The review shows how video analysis can best be used in sports training and also describes the potential advantages and disadvantages of using video analysis.

HYPOTHESES

In the course of our work, we formulated three hypotheses:

1. We hypothesized that more than 3 video analysts work for an NB1 team.
2. Furthermore, we assumed that more than 50% of the video analysts work together with the scouts.
3. We assume that video analysis has more advantages than disadvantages.

METHOD

During our work we visited Hungarian NB-1 teams who actively use video analytics in their work. We consulted the experts responsible for this field and used their information to prepare a questionnaire. In the questionnaire we asked 5 questions. A total of 20 NB1 video analysts completed the questionnaire. The analysts were contacted partly in person and partly online. In our questionnaire we asked the following research questions: Does video analysis have more advantages than disadvantages? On average, how many matches are watched

to analyse the opponent's game? What do you think are the advantages of video analysis? What do you think are the disadvantages of video analysis? What competencies and personality traits are required for a video analyst? The statistical calculations are calculated using a one-sample Wilcoxon test and a binomial test.

RESULTS

The following questions were included in the questionnaire, and the results were the following answers to the questions asked:

On average, how many matches do you watch to analyze the opponent's game?

Based on the responses received, as shown in our pie chart, on average analysts watch 3-5 matches to examine the opponent's game. In my questionnaire, the video analysts stressed that the number of matches they watch and analyze depends on the age group.

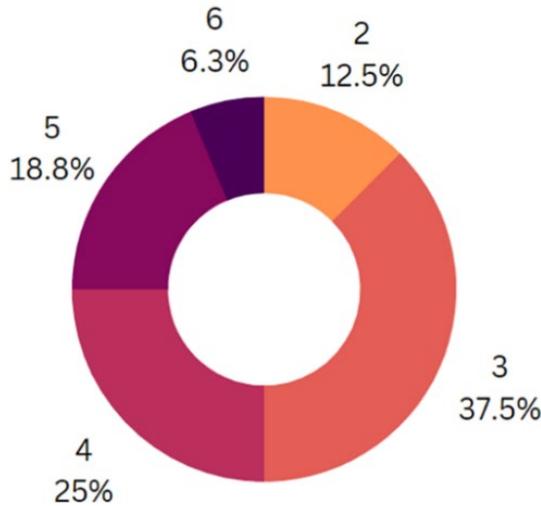


Figure 1. On average, how many matches do analysts watch to analyze the opponent's game?

What do you think are the benefits of video analytics?

In our research, analysts listed many more advantages than disadvantages. The most common answers are:

Detecting and correcting errors for staff.

To assist the Director of Sport in decision-making.

Objective feedback to both staff and players in the development of individual and team tactical elements.

From a distance, with a cold head, performance can be assessed through recordings.

Especially for younger age groups, it is now almost indispensable to use visualization to show areas for improvement and to point out mistakes.

Saving time: video analytics can help save time, as players' performance can be analyzed faster and more efficiently than before using manual methods.

Replay: video analysis allows football professionals to replay games, which can help them to better understand the evolution of games and the performance of players.

Advanced statistics: video analytics can help you generate advanced statistics to better assess player performance.

Video analysis can help football coaches to develop appropriate training plans based on the analysis of players' performance.

Video analysis helps football teams to recruit new players - players' performance can be assessed more accurately.

What do you think are the disadvantages of video analysis?

True, analysts cited far fewer disadvantages than advantages, but there are also disadvantages.

The most common answers are:

Still a less accepted and recognized profession in the football community.

It requires extreme concentration and tolerance of monotony.

Technology is costly: Advanced video analytics systems and tools require significant investment, which can be a problem for smaller clubs.

Does not take psychological factors into account. Video analysis cannot take into account the psychological state, motivation and self-confidence of players, which are important factors in football.

Video analysis is only a tool in football and does not guarantee success. Results may depend on the skills of the players, tactics and other factors.

What competences and personality traits are required for a video analyst?

The competencies and expected personality traits mentioned by the analysts are, in my opinion, essential for a video analyst.

Most common answers: basic IT skills, knowledge of digital tools, sports skills, tolerance of monotony, punctuality, ability to work cooperatively, ability to concentrate, communication skills.

How many video analysts work at the club?

Hypothesis 1: Confirmed (I assume there are more than 3 video analysts working for an NB1 team).

Based on the responses received, an NB1 team will employ a minimum of 3 and a maximum of 7 video analysts. Our statistical calculations were calculated using the one-sample Wilcoxon test in the JASP program with a value of $p < 0.001$.

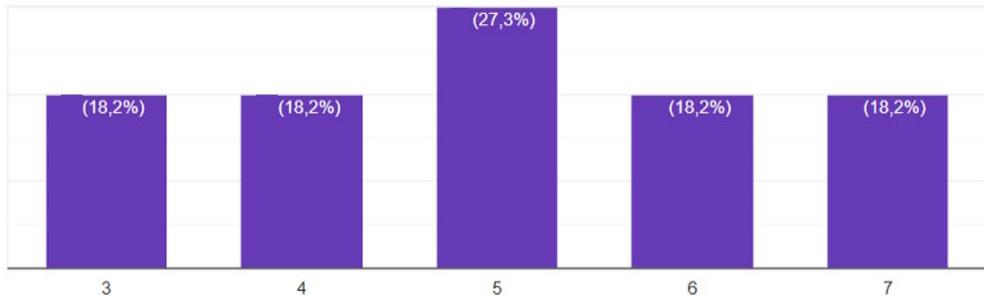


Figure 2. How many video analysts are hired by an NB1 team?

In what process, for example: talent scouting, does the team's video analyst work with Scout?

Second hypothesis: proven (It was assumed that more than 50% of video analysts work with scouts).

Based on the responses received, 75% of analysts cooperate with scouts and 25% do not cooperate. Video analysts assist in scouting talent, collecting data, and accompanying scouts to games (Hughes & Franks, 2008). We calculated our statistics using a binomial test $p = 0.021$ in the JASP program.

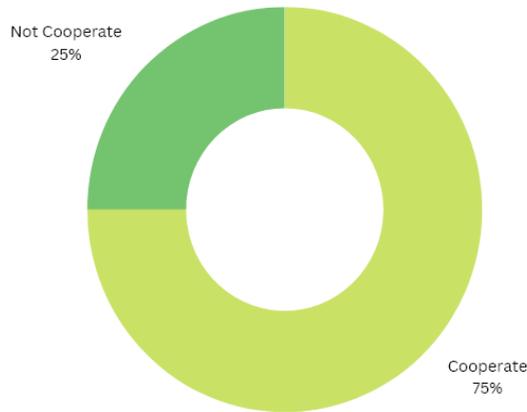


Figure 3. What percentage of videographers work with scouts

CONCLUSIONS

The hypotheses of the survey were confirmed, that there were more than 3 video analysts working for an NB1 team, the responses received indicated that there were up to 7 video analysts per club, but more than 3 for each club. Also confirmed was the fact that more than 50% of the scouts work with video analysts, based on the questionnaires received, which in our case is 75%. The third hypothesis was also confirmed, that video analysis has more positive than negative effects. The questions answered in the questionnaire describe the importance of video analytics and show the extent to which clubs use the information provided by analysts. It is on the basis of this data that decisions are made by top management, coaches, scouts and other members of staff.

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