
SERVICE EFFICIENCY OF THE UNWE VOLLEYBALL PLAYERS AT THE 15th EUROPEAN UNIVERSITY VOLLEYBALL CHAMPIONSHIP LODZ/ POLAND, 2019

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Abstract: In modern volleyball, the service efficiency is crucial. It is the starting element for each game, and its strength, precision and variability create conditions for tactical superiority. Teams that perform technically and tactically correct services have a great practical and psychological advantage. The technical efficiency in collective sports is assessed extremely highly and finds its equivalent in all statistical and software programs, used in the professional sport, both during competitions and trainings. The aim of this research is to analyze the individual and team service efficiency of the University of National and World Economy (UNWE) male team at the XV European University Volleyball Championship in Lodz - Poland/ 2019. The indicators record has been downloaded from the European University Sports Association (EUSA) website and the data classification is determined by expert opinion. Approved methods are applied at the data processing for the service efficiency coefficient (K_e), used by the Volleyball sector, within the National Sports Academy (NSA) - Sofia. The organization and methodology of the study was in video surveillance and recording of the game actions of the opponent services. Based on the data, the individual efficiency coefficient has been calculated for the three matches altogether from the championship group stage. The team service efficiency coefficient for each match individually, and on average for the three matches, was also determined. Data on the percentage distribution of efficiency metrics are displayed. The analysis of the research defines that the UNWE team service efficiency during its participation in the European Championship as low. Likewise, the defensive actions of the Bulgarian team were negatively influenced by the lack of an effective service. It imposes purposeful actions for improving this volleyball element in the training program of the male representative volleyball team. On one side, the calculated individual efficiency coefficient gives guidance on changing the choice of the service technique for some of the players. On the other, it focus on the importance of working towards greater variability in the service performance. However, for other players, corrections are necessary in the basic service technique. At the same time, the information gathered by the individual efficiency coefficient gives opportunities to the coach for more effective tactical service actions in the upcoming official matches. Conclusions have been made for the team presentation at the European Championship as a whole, which could be useful for the volleyball experts in the course of their professional work. Assessing the service efficiency optimizes the overall pedagogical process and helps to manage it.

Keywords: efficiency, players, service, students, volleyball

1. INTRODUCTION

In 1999, representatives of 25 national student federations founded the European University Sports Association (EUSA). In 2000, the General Assembly issued a decision to hold the European championships with the participation of university teams since 2001. Only national champions of the countries are allowed to participate in these championships. The first European University male and female volleyball championship was held in 2001 in Užice, Serbia and Montenegro. Twelve universities from nine countries participated. In 2019, the 15th European University Championship was held from 25th July to 2nd August in Lodz, Poland, with representatives from 27 universities from 16 different countries. The Championship is organized and administered by EUSA together with the hosts, in the face of the National Student Association (ASZ). As volleyball champions of Bulgaria for 2018, the team of the University of National and World Economy (UNWE) was granted the right to participate in this prestigious forum. So far, a student volleyball champion from Bulgaria has not participated in a competition of this rank. Only the basketball players of UNWE – Sofia, out of the Bulgarian collective sports, have participated in the European University Championship. A profound study of the conditions and its holding system is provided by Stavrev (Ставрев, 2012).

At the 15th European University Volleyball Championship, the Bulgarian team played three matches in the preliminary group D (Table 1), and semifinals and finals (Table 2) for the allocation of places from 9 to 16. At the final ranking UNWE finished on 10th place with two wins and three losses. Overall, the level of the teams that have taken rank places is extremely high. In the teams there are players playing professionally in the respective national championships. Most universities have full headquarters, including: senior coach, assistant coach, statistician, and professional medical representative (massage therapist), having at disposal modern methods and medicines for recovery.

Table 1. UNWE results from the preliminary group D

| Match | Results from Group D | Final Ranking Group D |
|-------|---|---|
| 1. | UNWE 2:3 Moldova State University (MOL) | 1. Moldova State University (MOL) |
| 2. | UNWE 3:2 The West University of Timișoara (ROU) | 2. University of Bochum (GER) |
| 3. | UNWE 1:3 University of Bochum (GER) | 3. UNWE (BUL) |
| | | 4. The West University of Timișoara (ROU) |

Table 2. UNWE results for places 9 to 16

| Match | Results from second stage | Semi-finals and finals for ranking from: |
|-------|--|--|
| 4. | UNWE (BUL) 3:2 University of Jyvaskyla (FIN) | 9 - 16 places |
| 5. | UNWE (BUL) 1:3 University of Minho (POR) | 9 - 10 places |

Analyzing the game of the best volleyball teams, experts and coaches report the progress of the technical skills, characterized by high efficiency. Today, in the conditions of intensification, intellectualization and severe competition, the total team (collective) technical skill is increasingly sought. Authoritative experts define it as a VHP factor (Чесноков, 2008), which is decisive for the ultimate success of the team. In modern volleyball, the efficiency of the service is crucial. Teams that perform technically and tactically correct services have greater practical and psychological advantage. According to Jordanov (Йорданов, 2017), the efficiency of service is closely related to the model characteristics of the main game posts. Bojilov (Божилов, 2002) reveals interesting relationships between the efficiency of the service and the tactical thinking. In another study, Bojilov and Jordanov (Божилов & Йорданов, 2018) determine that power service efficiency increases when a competitor monitors and outlines their future hit, and a floater is more effective when the competitor focuses on its quality performance, and less on the precision of its direction. Initial impact efficiency studies were conducted by Kotev (Котев, 2014), who analyzes the initial impact of beach volleyball elite teams using different performance techniques. A comparative analysis and evaluation of the service efficiency were subject of a study of the Bulgarian female national team by Antonova (Антонова, 2015) and CSKA-Sofia male team by Antonova and Kotev (Антонова & Котев, 2011). A research on the efficiency of the student volleyball team service, participating in a high-ranking competition has not yet been conducted. We are interested in the service efficiency of the UNWE team (individual and collective) in the group stage of the European Championship in Lodz-Poland.

2. AIM AND TASKS

The purpose of our study is to determine and analyze the service efficiency of the UNWE-Sofia male team in the group phase of the 15th European University Championship in Lodz-Poland, 2019. To achieve this goal, we have set ourselves the following tasks:

1. Determine the individual service efficiency coefficient;
2. Determine the team service efficiency coefficient for each match individually and on average over the three games;
3. Determine the percentage distribution of efficiency performance indicators in total for all the three matches;
4. Make an overall assessment of the team performance at the European Championship;
5. Make recommendations for future work, taking into consideration the obtained results.

3. ORGANIZATION AND METHODOLOGY

The organization and methodology of the study was in video surveillance and recording of the game actions of the competitors serving. The processing and recording of indicators are determined as per expert opinion and classified in accordance to quantitative and qualitative criterias. The data processing is based on the approbated methodology of the Volleyball sector within NSA, which applies the formula for the efficiency coefficient (Ke) for service performing:

$$Ke = \frac{A^4 \times 4 + A^3 \times 2 + A^2 + A^1}{A}$$

Ke - efficiency coefficient;

A4 - number of points directly scored (asses);

A3 - number of tough services;
A2 - number of mediocre services;
A1 - number of service errors;
A - total number of service performed.

4. RESULTS ANALYSIS

Table 3 shows the individual quantitative indicators and the efficiency coefficient of the players. During the three matches in Group D, the UNWE team played 14 games and performed a total of 286 services. The directly scored points (A4) are 20, with an average of 7 points per match. With 14 games played in three matches, it is a very small number and it is considered due to the tension generated by the rank of the tournament. The services that troubled the opponents (A3) were 71, with an average of 5 per game. The mediocre services (A2) are 167. Service errors (A1) are 28, with an average of 2 points per game. The average team efficiency coefficient of 1.45 is considered low.

Table 3. Individual quantities and efficiency coefficient

| Name | A4 | A3 | A2 | A1 | A | Ke |
|--------------|-----------|-----------|------------|-----------|------------|-------------|
| Dilyan | 6 | 11 | 25 | 5 | 47 | 1,62 |
| Borislav | 2 | 10 | 26 | 8 | 46 | 1,26 |
| Todor | 5 | 11 | 25 | 8 | 49 | 1,53 |
| Velizar | 1 | 9 | 18 | 0 | 28 | 1,43 |
| Danail | 0 | 7 | 25 | 4 | 36 | 1,19 |
| Tzvetko | 1 | 10 | 16 | 3 | 30 | 1,43 |
| Marian | 1 | 4 | 19 | 0 | 24 | 1,29 |
| Valentin | 1 | 5 | 9 | 0 | 15 | 1,53 |
| Kaloyan | 3 | 4 | 4 | 0 | 11 | 2,18 |
| Stoyan | 0 | 0 | 1 | 0 | 1 | 1 |
| Total | 20 | 71 | 167 | 28 | 286 | 1,45 |

Figure 1 presents the individual service efficiency coefficient. What makes impression is that three players have low scores. This result is expected taking into consideration their physics. At the same time, we should note the good service of the main distributor (Dilyan) with Ke - 1.62. This is due to the stable technique, which has also variability in performance. With efficiency coefficient of 2.18, stands out the second distributor in the team - Kaloyan. His high efficiency enables the coach to use him as tactical change of service. The player Stoyan with coefficient 1 is not included in the statistics due to the short playing time and only one service performed. The rest of the players are about the average efficiency coefficient and do not carry essential information.

Fig.1. Individual service efficiency coefficient

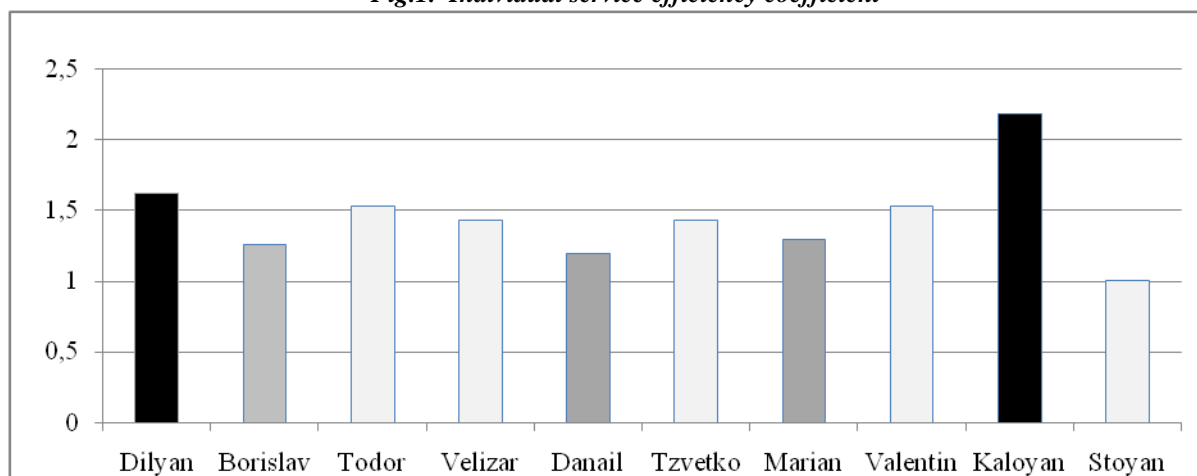
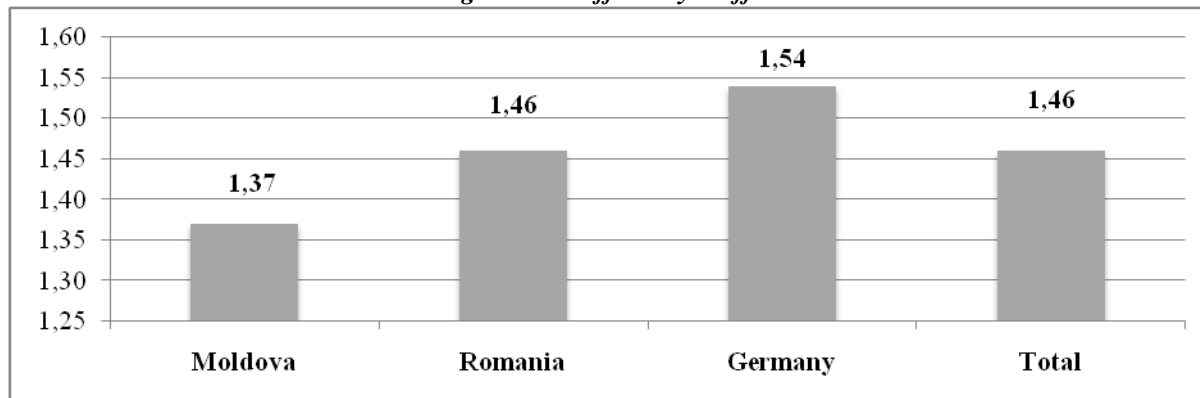


Figure 2 determines the team efficiency coefficient of the performed services for each match individually and on average of the three matches. In its first game with Moldova, lost by 2:3, the UNWE team recorded its lowest

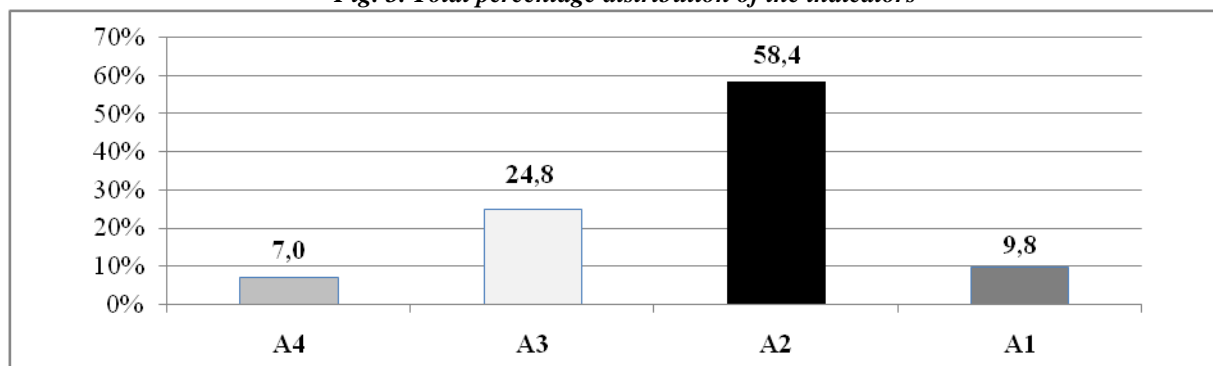
service efficiency coefficient (1.37). In their second match, the Bulgarian team scored 3:2 win, where the match efficiency coefficient is being equal to the average one of all the three matches (1.46). In its third group stage match, the UNWE team achieved its highest service efficiency (1.54), despite the lost with 1:3 from Germany. Based on the result analysis, we could report the positives of the service element, but they were insufficient for winning the match.

Fig. 2. Team efficiency coefficient



The data analysis in Figure 3 shows a very low percentage (7%) of directly scored points (asses) and a low service errors percentage (9.8%). Services that made it difficult to the competitor to dig were with a relatively low percentage (24.8%). The highest percentage performed (58.4%) was for the mediocre services. We could summarize that the high percentage of mediocre services gave the opportunity to the opponent teams to carry out various attacks. Moreover, the lack of an effective service had a negative impact on the defensive actions of the Bulgarian team.

Fig. 3. Total percentage distribution of the indicators



5. CONCLUSIONS AND RECOMMENDATIONS

1. Participation in such a high-ranking forum, in addition to prestige, it provides the necessary valuable competitive experience for the students to build on their future success;
2. Work towards greater variability in the service performance;
3. The results of the study give us guidance on corrections to the content of the training program, namely the need for more specialized exercises to improve the service;
4. Work on improvement the physical performance - upper limb strength and lower limb blast strength;
5. Assessing the service efficiency optimizes the overall pedagogical process and helps to manage it.

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