

User satisfaction through improvements of the sports information system in the Autonomous Province of Vojvodina

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Abstract

This study examines user satisfaction with the upgraded eSavezi sports information system of the Provincial Secretariat for Sports and Youth, Autonomous Province of Vojvodina (APV). The 2024–2025 upgrade introduced advanced search, multi-format data export, faster processing, expanded cloud storage, a universal cost management module, standardized financial planning, program consolidation, and centralized document upload. A cross-sectional survey was conducted from May 5–20, 2025, with 257 provincial sports association administrators (~12% coverage). Data were collected via an online five-point Likert scale questionnaire and analyzed using IBM SPSS Statistics. Results indicate high satisfaction with all features, particularly data export, storage capacity, and administrator support. All eight hypotheses were confirmed, demonstrating the system’s contribution to operational efficiency, transparency, and digital transformation in sports administration.

Keywords: sports information systems · user experience evaluation · digital transformation in sports · AP Vojvodina · e-governance · sports administration efficiency

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Introduction

The eSavezi sports information system, developed by the Provincial Secretariat for Sports and Youth of the Autonomous Province of Vojvodina (APV), has been continuously improved for over fifteen years to enhance the efficiency, transparency, and digitalization of sports administration. Designed to support provincial branch sports associations, the system enables electronic submission of programs, automated budget planning, and the generation of official reports, thereby reducing administrative workload and improving oversight.

An information system in sports can be defined as a structured set of elements – data, entities, and their interrelations – that enables the collection, processing, storage, and distribution of information necessary for decision-making (Krnetić, 2020; Strajnić, 2005; Bala & Krnetić, 2013). Entities in sports include associations, clubs, athletes, facilities, results, and related resources (Link & Lames, 2009). Effective information systems centralize data entry, facilitate access to relevant information from any location, and integrate tools for analysis and decision support, ultimately improving user satisfaction.

By 2025, eSavezi encompassed 58 provincial branch associations, 2,079 member clubs, over 6,800 competition calendars, 2,323 sports experts, and 1,499 categorized athletes, as well as extensive datasets on sports results and program indicators. In late 2024 and early 2025, the system underwent a major upgrade: migration to a new server, advanced search, multi-format data export, faster application performance, increased storage capacity, a universal cost tracking module, a revised financial plan structure, consolidation of annual and special programs into a single exportable document, and a unified document upload system.

Given the system's scope and the crucial role of administrators in its daily operation, this study assesses user satisfaction with the upgraded eSavezi system, focusing on the perceived value of new functionalities and their contribution to operational effectiveness.

Method

The central research problem was to evaluate user satisfaction with the upgraded eSavezi sports information system. The system's primary users—administrators from provincial branch sports associations—play a key role in its daily operation. In late 2024 and early 2025, eSavezi underwent major improvements, including advanced search functionality, multi-format data export, increased application speed, expanded storage capacity, a

universal cost tracking system, a revised financial plan structure, consolidation of annual and special programs into a single document, and a unified document upload process.

The specific aim of the study was to determine user satisfaction with these new functionalities, propose potential improvements, and provide recommendations for further development. The following hypotheses were tested:

H0: Users of the upgraded eSavezi system are satisfied.

H1: Users are satisfied with the advanced search functionality.

H2: Users are satisfied with the ability to export data into various file formats.

H3: Users are satisfied with the new server.

H3.1: Users are satisfied with application speed.

H3.2: Users are satisfied with the increased storage capacity.

H4: Users are satisfied with the universal cost sheet in the financial plan.

H5: Users are satisfied with the new financial plan structure.

H6: Users are satisfied with the consolidation of programs into a single exportable document.

H7: Users are satisfied with the unified document upload system.

H8: Users are satisfied with the system administrator's work.

Sample and Procedure

The study included 257 representatives of provincial branch sports associations, representing approximately 12% of the 2,079 member clubs in AP Vojvodina. These associations oversee member clubs, competitions, training camps, seminars, and administrative operations.

Data Collection and Analysis

Data were collected through a custom-designed online questionnaire (Google Form) consisting of 15 questions—five general and ten related to satisfaction with the upgraded system. Responses were measured on a five-point Likert scale (1 = very dissatisfied, 5 = very satisfied). The research was conducted in Novi Sad, Autonomous Province of Vojvodina, from May 5 to May 20, 2025. Data were processed using IBM SPSS Statistics, applying frequency analysis to evaluate satisfaction levels.

Results

The research results are presented below in both tabular form, making them suitable for interpretation and further discussion. The complete research results, as well as the results of the control study, are provided in the appendix. Descriptive statistics is presented in Table 1.

Table 1. Descriptive statistics

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation
Gender	257	1.00	1.00	2.00	350.00	1.3619	.48148
Level of education	257	3.00	1.00	4.00	602.00	2.3424	1.11780
Advanced table search	257	3.00	2.00	5.00	1183.00	4.6031	.70577
Data Export	257	2.00	3.00	5.00	1240.00	4.8249	.46402
Application speed	257	2.00	3.00	5.00	1216.00	4.7315	.51718
Increased storage space	257	2.00	3.00	5.00	1240.00	4.8249	.46402
Universal cost sheet	257	2.00	3.00	5.00	1243.00	4.8366	.48063
New budget structure	257	3.00	2.00	5.00	1234.00	4.8016	.54801
Packing and export	257	2.00	3.00	5.00	1231.00	4.7899	.55429
Upload system	257	3.00	2.00	5.00	1231.00	4.7899	.55429
Administrator's work	257	2.00	3.00	5.00	1252.00	4.8716	.42740
Valid N (listwise)	257						

Research results on the advanced table search function within the eSavezi system are presented in Table 2.

Table 2. Advanced table search

	Rating 2	Rating 3	Rating 4	Rating 5
n	3	24	45	185
%	1.17	9.34	17.51	71.98

Reviewing Table 2, it is evident that the most common rating for the advanced search function is 5. It appears 185 times or 71.98%, which is significantly higher than rating 4 (45 times or 17.51%), rating 3 (24 times or 9.34%), and rating 2 (3 times or 1.17). Research results for the data export function to various file formats (PDF, Excel, HTML, etc.) and data exchange are shown in Table 3.

Table 3. Data export to various file formats

	Rating 3	Rating 4	Rating 5
n	9	27	221
%	3.50	10.51	85.99

As seen in Table 3, the most common rating for the data export function is 5. It occurs 221 times or 85.99%, which is significantly higher than rating 4 (27 times or 10.51%), and rating 3 (9 times or 3.50). The results of the study on application speed on the new server are shown in Table 4.

Table 4. Application speed on the new server

	Rating 3	Rating 4	Rating 5
n	9	51	197
%	3.50	19.84	76.65

An analysis of Table 4 reveals that the most common rating for application speed is 5, appearing 197 times or 76.65%, which is significantly higher than rating 4 (51 times or 19.84%), and rating 3 (9 times or 3.50%). The research results of the

increased storage space on the new server are shown in Table 5.

Table 5. Increased storage space on the new server

	Rating 3	Rating 4	Rating 5
n	9	27	221
%	3.50	10.51	85.99

Reviewing Table 5, it is evident that the most frequent rating for data export is 5, appearing 221 times, which accounts for 85.99%. This is significantly higher than rating 4 (27 times or 10.51%), and rating 3 (9 times or 3.50%). The research results for the universal cost sheet system are shown in Table 6.

Table 6. Universal cost sheet in the financial plan of the sports association programs

	Rating 3	Rating 4	Rating 5
n	12	18	227
%	4.67	7.00	88.33

Table 6 shows that the most common rating in the universal cost sheet is 5, recorded 227 times or 88.33%, which is significantly higher than rating 4 (18 times or 7.00%), and rating 3 (12 times or 4.67%). The research results regarding the new budget structure and predefined financial plans are presented in Table 7.

Table 7. New budget structure and predefined financial plans

	Rating 2	Rating 3	Rating 4	Rating 5
n	3	9	24	221
%	1.17	3.50	9.34	85.99

Table 7 shows that the most common response regarding the new budget structure feature is rating 5, which appears 221 times or 85.99%. This is significantly higher than rating 4 (24 times or 9.34%), rating 3 (9 times or 3.50%), and rating 2 (3 times or 1.17%). The research results regarding the consolidation of annual and special programs into a

single document and the export of the consolidated file into specific file formats are presented in Table 8.

Table 8. Consolidation of annual and special programs into a single document and export into specific file formats

	Rating 3	Rating 4	Rating 5
n	18	18	221
%	7.00	7.00	85.99

As shown in Table 8, the most frequent rating for this function is 5. It appears 221 times or 85.99%, which is notably higher than rating 4 (18 times or 7.00%) and rating 3 (18 times or 7.00%). The research results on the unification of the document upload system are shown in Table 9.

Table 9. Unification of the document upload system

	Rating 2	Rating 3	Rating 4	Rating 5
n	3	9	27	218
%	1.17	3.50	10.51	84.82

Reviewing Table 9, it is evident that for the unified document upload function, the highest rating is 5, which appears 218 times or 84.82%. This is significantly higher than rating 4 (27 times or 10.51%), rating 3 (9 times or 3.50%), and rating 2 (3 times or 1.17%). Results of user satisfaction with the system administrator's work are presented in Table 10.

Table 10. User satisfaction with the system administrator's work

	Rating 3	Rating 4	Rating 5
n	9	15	233
%	3.50	5.84	90.66

Reviewing Table 10, it is evident that the most common rating for the administrator's work is 5. It appears 233 times, which accounts for 90.66%. This is significantly higher than rating 4 (15 times or 5.84%) and rating 3 (9 times or 3.50%).

Discussion

The findings of this study demonstrate a high level of satisfaction among eSavezi system administrators following the 2024–2025 upgrades. All hypotheses (H0–H8) were supported, indicating that the implemented improvements met user expectations across all evaluated functionalities.

The highest satisfaction scores were observed for advanced search, multi-format data export, and server performance (speed and storage), confirming the importance of efficient data retrieval, sharing, and technical capacity for system usability. These findings align with prior research showing that system efficiency and ease of access are central

factors influencing user adoption of digital platforms (Krnetić, 2020; Link & Lames, 2009).

Financial management enhancements—such as the universal cost sheet and revised financial plan structure—also received strong positive feedback. Similar benefits of digital tools for improving administrative and budgeting processes have been noted in studies exploring technology integration frameworks (Caena & Redecker, 2019; Redecker & Punie, 2017).

The consolidation of programs and the unified document upload process reduced administrative workload, aligning with broader trends in digital transformation in education and sports management. Research on digital competence frameworks highlights that well-structured, user-centered tools significantly increase adoption rates and user satisfaction (Kuş & Mert, 2024; Cabero-Almenara et al., 2020; Alarcón et al., 2020).

Furthermore, studies analyzing and comparing international digital competence frameworks (Matar et al., 2022) and exploring artificial intelligence competence models for educators (Mikeladze et al., 2024) underscore the importance of aligning system functionalities with evolving user needs and 21st-century digital skills.

Practical implications include the need for continuous technical updates, regular training for administrators, and integration with other specialized systems to further enhance operational efficiency. Limitations of this study include its regional scope (AP Vojvodina) and reliance on self-reported measures. Future research should explore longitudinal impacts of upgrades, cross-regional comparisons, and potential links between user satisfaction and broader digital competence development.

Conclusion

This study evaluated user satisfaction with the upgraded eSavezi sports information system in the Autonomous Province of Vojvodina, focusing on specific new functionalities introduced in 2024–2025. The results indicated consistently high satisfaction levels across all evaluated features, confirming the main hypothesis (H0) and supporting all specific hypotheses (H1–H8).

These findings highlight the system's effectiveness in enhancing administrative efficiency, transparency, and user experience in provincial sports administration. The improvements—particularly in search capability, data export, server performance, and financial management tools—were identified as key contributors to this positive evaluation.

The practical implication of this research is that targeted technological upgrades, combined with ongoing technical support, can significantly increase the adoption and effective use of information systems in the sports sector.

Future research should expand the scope beyond the basic eSavezi platform to examine specialized information systems used by provincial branch associations and explore opportunities for their integration into a unified digital environment.

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