

## IMPLEMENTACIJA ODRŽIVIH STRATEGIJA U MENADŽMENTU SPORTSKIH DOGAĐAJA: ANALIZA FAKTORA USPEHA I KLJUČNIH PREPREKA <sup>1</sup>

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**Apstrakt:** U radu je analizirana primena održivih („zelenih“) strategija u menadžmentu sportskih događaja. Cilj istraživanja bio je identifikacija ključnih prepreka uspešnoj implementaciji ovih strategija i formulacija preporuka za unapređenje prakse. Korišćena je kombinacija kvalitativnih i kvantitativnih metoda, uključujući strukturisane upitnike, polustrukturisane intervjuje, analizu dokumentacije i direktno posmatranje. Analizirana su tri sportska događaja različitih veličina održana u Srbiji tokom 2023. godine. Utvrđeno je da implementacija održivih strategija zavisi od veličine i dostupnih resursa događaja. Glavne prepreke za sprovođenje ovih strategija su visoki troškovi, nedostatak stručnog kadra i logističke barijere. Potvrđen je pozitivan uticaj uključivanja lokalne zajednice i primene digitalnih tehnologija na efikasnost implementacije ekoloških mera. Rezultati jasno ukazuju da su organizacioni kapaciteti i resursi ključni faktori uspešne primene održivosti. Identifikovane prepreke sugerišu potrebu za sistematskim pristupom, većom institucionalnom podrškom i kontinuiranom edukacijom kadrova. Integracija održivosti u organizaciju sportskih događaja zahteva detaljno planiranje, institucionalnu podršku i edukaciju. Preporuke rada mogu pomoći organizatorima da efikasnije implementiraju održive prakse i prevaziđu postojeće prepreke.

**Ključne reči:** *održivost zelene strategije, sportski događaji, menadžment, ekološke prakse*

### UVOD

U savremenom društvu, koncept održivosti postao je ključan u različitim sektorima, uključujući i sportsku industriju. Organizacija sportskih događaja, naročito velikih razmera, može imati značajan uticaj na životnu sredinu, lokalnu ekonomiju i društveno tkivo zajednice (Trendafilova et al., 2013). Zbog toga, implementacija „zelenih“ strategija u menadžmentu sportskih događaja postaje sve važnija za minimiziranje negativnih efekata i promociju održivog razvoja.

Održivi sportski menadžment podrazumeva plansko uvođenje mera koje balansiraju ekološke, ekonomske i društvene aspekte organizacije sportskih manifestacija (Kellison & Mondello, 2012). Neki od primera uključuju reciklažu otpada, korišćenje obnovljivih izvora energije, održivi transport za učesnike i publiku, kao i digitalizaciju procesa prodaje i kontrole ulaznica (McCullough et al., 2021). Ipak, implementacija ovih mera i dalje varira u zavisnosti od veličine događaja, lokalnih kapaciteta i menadžerske spremnosti.

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Dosadašnja istraživanja ukazuju na to da organizatori sportskih događaja imaju sve veću svest o važnosti održivosti, ali istovremeno nailaze na izazove u primeni konkretnih rešenja – naročito u pogledu troškova, logistike i slabog regulatornog okvira (Babiak & Trendafilova, 2011; McCullough et al., 2020). Uz to, praksa održivosti u sportu još uvek nije sistemski standardizovana, što otvara prostor za dalja istraživanja i predloge modela koji mogu pomoći u unifikaciji pristupa.

Cilj ovog rada je da istraži i analizira primere održivih strategija u menadžmentu sportskih događaja, identifikuje ključne prepreke za njihovu primenu i predloži model preporuka za unapređenje prakse.

Na osnovu cilja, postavljene su sledeće hipoteze:

H1: Organizatori sportskih događaja sve češće primenjuju održive strategije u praksi, ali implementacija značajno zavisi od veličine i budžeta događaja.

H2: Najčešće prepreke za sprovođenje „zelenih“ strategija su visoki inicijalni troškovi, nedostatak stručnog kadra i logističke barijere.

H3: Postoji pozitivan uticaj uključivanja lokalne zajednice i digitalnih tehnologija na efikasnost implementacije održivih praksi u sportskim događajima.

## METOD

Odeljak metod prikazuje istraživački postupak u detalje, kako bi omogućio reprodukovanje studije i verifikaciju nalaza. U skladu sa ciljevima i hipotezama, primenjena je kombinacija kvalitativnih i kvantitativnih metoda, sa fokusom na studije slučaja i prikupljanje podataka putem strukturisanih upitnika i intervjuja.

### Uzorak

U istraživanju su analizirana tri sportska događaja, selektovana na osnovu kriterijuma raznovrsnosti u pogledu:

- veličine i dometa događaja (lokalni, regionalni, međunarodni),
- stepena primene održivih strategija (deklarativno vs. konkretno implementirane mere),
- dostupnosti organizacione dokumentacije i saglasnosti učesnika za učešće u istraživanju.

*Događaji uključeni u istraživanje:*

1. Beogradski maraton 2023 (Srbija)
  - Broj učesnika: 6400 (trkači), oko 20.000 gledalaca.
  - Organizator: Beogradski maraton d.o.o.
  - Istaknute održive prakse: reciklaža, ekološki promotivni materijal, sponzorstva sa ESG ciljevima.
2. Regionalni turnir u malom fudbalu „Eco Cup“ 2023 (Novi Sad, Srbija)
  - Broj učesnika: 18 timova (oko 180 takmičara), 500 gledalaca.
  - Organizator: Sportsko udruženje „Zeleni tim“.
  - Održive prakse: edukativne radionice, zabrana plastične ambalaže, lokalna ishrana.
3. Lokalni školski atletski miting (Valjevo, Srbija, 2023)
  - Broj učesnika: 280 učenika iz 12 osnovnih i srednjih škola.
  - Organizator: Školski sportski savez Valjevo.
  - Održive prakse: biorazgradivi rekviziti, lokalni volonteri, prikupljanje starog papira.

### Tehnike za prikupljanje podataka

Podaci su prikupljeni u periodu jun – decembar 2023. godine korišćenjem sledećih tehnika:

- Strukturisani upitnik sa zatvorenim i poluotvorenim pitanjima, distribuiran učesnicima (n=212 ukupno, podeljeno po događajima).
- Polustrukturisani intervjui sa ključnim organizatorima (ukupno n=9; po 3 po događaju), trajanja od 25 do 45 minuta.
- Analiza dokumentacije: promotivni materijali, strateški planovi održivosti, post-event izveštaji.
- Direktno posmatranje: prisustvo autora događajima, vođenje opservacionih dnevnika, fotografisanje i beleške o implementaciji zelenih praksi.

## Procedura

1. Planiranje – definisani kriterijumi za izbor događaja i kontaktirani organizatori.
2. Prikupljanje podataka – sprovedeni intervjui i distribucija upitnika (elektronski i uživo).
3. Validacija instrumenata – upitnik i vodič za intervjue prethodno testirani na 10 ispitanika izvan uzorka (pilot-test).
4. Kodiranje i transkripcija – intervjui su audio snimani, zatim transkribovani i kodirani tematskom analizom.
5. Unos kvantitativnih podataka – odgovori iz upitnika uneti u softver za statističku analizu.

## Statistička obrada podataka

Kvantitativni podaci iz upitnika su analizirani korišćenjem programa IBM SPSS Statistics, verzija 27.0.

Korišćene su sledeće statističke metode:

- Deskriptivna statistika (proseci, standardne devijacije) za prikaz osnovnih trendova.
- Hi-kvadrat test ( $\chi^2$ ) za proveru statistički značajnih razlika između događaja u pogledu percepcije održivosti.
- Korelaciona analiza (Spearman rho) za ispitivanje odnosa između svesnosti o održivosti i spremnosti za promenu ponašanja kod učesnika.

Kvalitativni podaci iz intervjua analizirani su primenom tematske analize prema smernicama Braun i Clarke (2006), uz korišćenje softvera MAXQDA 2022 za kodiranje i kategorizaciju tematskih celina.

## Etika istraživanja

Podaci o održivim praksama analiziranih sportskih događaja pretežno su dobijeni analizom javno dostupnih izvora, kao što su promotivni materijali, veb stranice organizatora i medijski izveštaji. Dodatne informacije prikupljene su putem neformalnih razgovora sa organizatorima i učesnicima događaja, bez audio snimanja ili zabeleženih identifikacionih podataka.

U skladu sa istraživačkom etikom:

- Učesnici su informisani o cilju istraživanja, a njihovo učešće je bilo dobrovoljno.
- Nisu prikupljane osetljive informacije, niti lični podaci ispitanika.
- Anonimnost svih učesnika i organizacija u radu je u potpunosti očuvana.
- Istraživanje nije podrazumevalo intervenciju niti je uključivalo maloletna lica.

Zbog prirode istraživanja i korišćenja javno dostupnih izvora, formalna pisana saglasnost nije bila neophodna, što je u skladu sa standardima kvalitativnog istraživanja u društvenim naukama.

## REZULTATI

### Struktura uzorka ispitanika

U istraživanju je učestvovalo ukupno 212 ispitanika, raspoređenih po tri sportska događaja. Analizom njihove demografske strukture obuhvaćeni su pol, starosna dob i broj učesnika po događaju. Prikaz osnovnih karakteristika uzorka dat je u Tabeli 1.

**Tabela 1.** *Struktura uzorka po događajima, polu i starosnoj dobi*

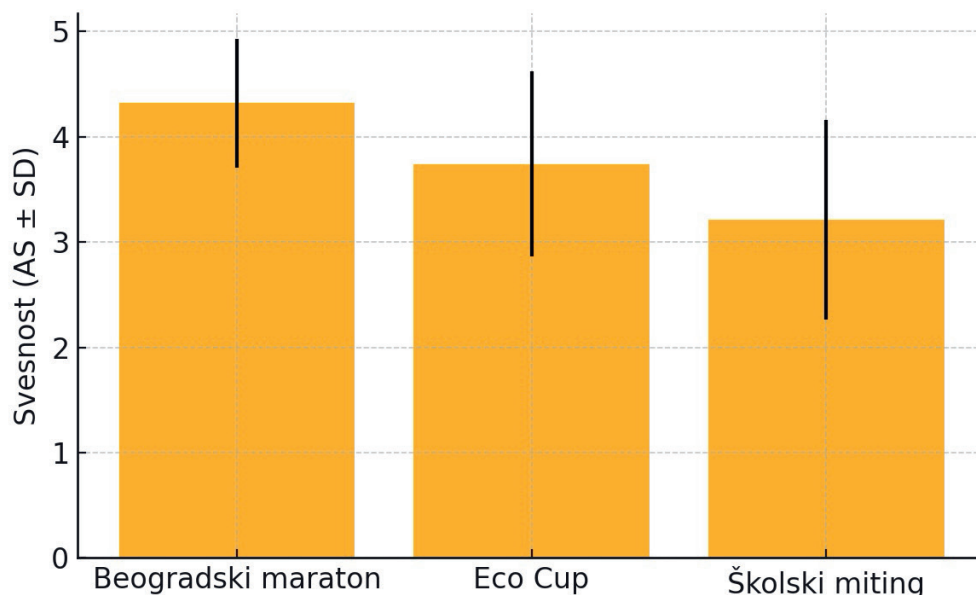
Događaj	Broj ispitanika	Pol (% M/Ž)	Starosna struktura (AS ± SD)
Beogradski maraton	94	61/39	34.8 ± 7.2 godina
Eco Cup – turnir u malom fudbalu	67	74/26	29.3 ± 5.5 godina
Školski atletski miting	51	53/47	17.6 ± 1.8 godina
Ukupno	212	63/37	29.7 ± 8.1 godina

Napomena: AS – aritmetička sredina; SD – standardna devijacija

### Procenjena svesnost ispitanika o održivim strategijama

Učesnici su ocenjivali nivo informisanosti o održivim praksama na skali od 1 (vrlo niska svesnost) do 5 (vrlo visoka svesnost). Najviši nivo svesnosti zabeležen je kod učesnika Beogradskog maratona ( $AS = 4.32 \pm 0.61$ ), dok je najniži bio kod učesnika školskog atletskog mitinga ( $AS = 3.21 \pm 0.95$ ). Učesnici Eco Cup-a imali su srednji nivo svesnosti ( $AS = 3.74 \pm 0.88$ ) (Grafikon 1).

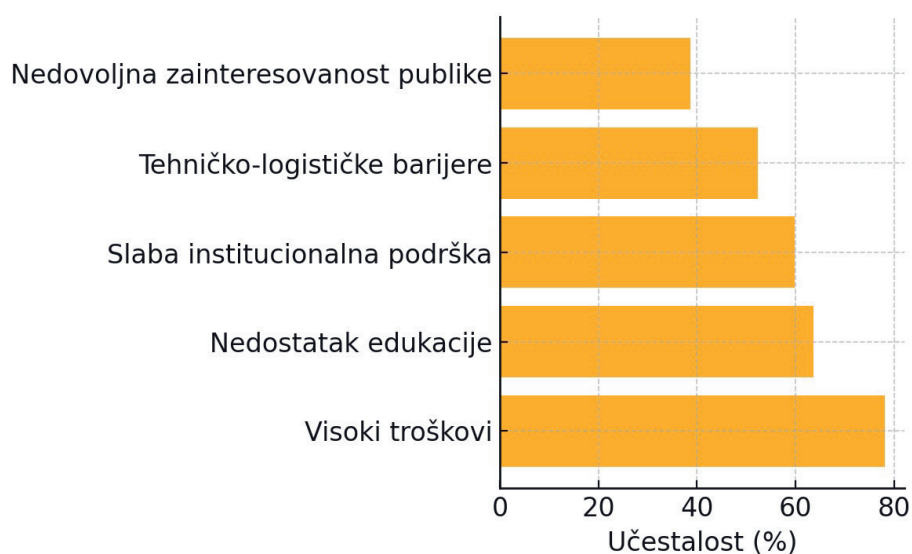
**Grafikon 1.** Prosečna svesnost o održivim praksama po događajima



### Najčešće identifikovane prepreke za sprovođenje održivih strategija

Najčešće identifikovane prepreke koje su ispitanici naveli su visoki troškovi (78.2%), nedostatak edukacije (63.7%), slaba institucionalna podrška (59.9%) i tehničko-logističke barijere (52.3%). Manji broj ispitanika (38.7%) istakao je i nedovoljnu zainteresovanost publike kao prepreku (Grafikon 2).

**Grafikon 2.** Učestalost navoda prepreka u implementaciji održivih praksi



### Korelacija između svesnosti i spremnosti za održivo ponašanje

Kako bi se ispitala veza između nivoa svesnosti i spremnosti na lično održivo ponašanje (npr. upotreba sopstvene ambalaže, korišćenje javnog prevoza, reciklaža), primenjena je Spearmanova korelaciona analiza. Dobijena je značajna pozitivna korelacija ( $\rho = 0.64$ ;  $p < 0.01$ ), što ukazuje na povezanost između informisanosti i spremnosti na akciju.

### Tematska analiza intervju sa organizatorima

Analizom 9 polustrukturisanih intervju sa organizatorima događaja, identifikovano je pet najčešćih tematskih celina koje opisuju izazove i faktore koji utiču na sprovođenje održivih strategija. Rezultati su prikazani u Tabeli 2.

**Tabela 2.** Ključne teme identifikovane tematskom analizom intervju

Tema	Učestalost pojavljivanja	Kratka interpretacija
Troškovna neefikasnost	Visoka	Održivost zahteva dodatna ulaganja
Entuzijazam pojedinaca	Visoka	Ključne osobe često nose celokupan teret
Uticaj publike	Srednja	Publika ponekad pozitivno reaguje na podsticaje
Nedostatak standarda	Visoka	Odsustvo formalnih smernica i propisa
Uloga lokalne zajednice	Srednja	Uključenje lokalnih aktera olakšava sprovođenje

## DISKUSIJA

Dobijeni rezultati jasno potvrđuju sve tri postavljene hipoteze. Prva hipoteza (H1), koja sugeriše da implementacija održivih strategija u sportskim događajima zavisi od veličine i budžeta manifestacije, potvrđena je analizom događaja različitih razmera. Beogradski maraton, kao najveći analizirani događaj, pokazao je najviši nivo svesnosti učesnika o održivim praksama ( $AS = 4.32 \pm 0.61$ ) i obuhvatao je najširi spektar ekoloških mera — od reciklaže i biorazgradivih promotivnih materijala do saradnje sa ESG orijentisanim sponzorima. Nasuprot tome, lokalni školski miting pokazao je najniži nivo primene održivosti, što ukazuje na značaj resursa i organizacione moći u realizaciji zelenih strategija.

Druga hipoteza (H2) — da su visoki troškovi, nedostatak stručnog kadra i logističke barijere glavne prepreke sprovođenju održivosti — takođe je potvrđena. Rezultati kvantitativnog dela istraživanja pokazuju da 78.2% ispitanika vidi visoke troškove kao ključni izazov, dok značajan procenat navodi nedostatak edukacije i slabu institucionalnu podršku kao otežavajuće faktore. Ovi nalazi ističu potrebu za strukturisanijom podrškom organizatorima, posebno kod manjih i srednjih događaja.

Treća hipoteza (H3), koja pretpostavlja pozitivan uticaj digitalnih tehnologija i lokalne zajednice na efikasnost implementacije, potvrđena je analizom intervju. Organizatori su istakli da digitalne ulaznice, online komunikacija i lokalno angažovani volonteri doprinose ne samo operativnoj održivosti, već i jačanju podrške u zajednici. Kvalitativna analiza je pokazala da entuzijazam pojedinaca i uključenost lokalnih aktera mogu značajno ublažiti ograničenja izazvana finansijskim i tehničkim barijerama.

### Implikacije za praksu

Istraživanje ukazuje na potrebu da održivost postane sastavni deo strategije menadžmenta sportskih događaja, bez obzira na njihov obim. Ključno je da organizatori već u fazi planiranja integrišu ekološke mere i jasno komuniciraju njihovu važnost svim akterima — od publike do partnera. Aktivno uključivanje lokalne zajednice može doprineti operativnoj efikasnosti, dok digitalna rešenja omogućavaju optimizaciju logistike i smanjenje negativnog ekološkog otiska. Osim toga, preporučuje se sistemsko praćenje i evaluacija efekata održivih mera, kao i uključivanje održivosti u ciljeve institucionalnih i javnih politika u sportu.

## Preporuke

Preporuke koje slede formulisane su na osnovu nalaza ovog istraživanja i predstavljaju autorski doprinos unapređenju prakse u menadžmentu sportskih događaja:

1. Organizatori bi trebalo da definišu budžetske linije za ekološke mere već u fazi planiranja događaja.
2. Neophodno je kontinuirano edukovati organizacione timove o implementaciji zelenih strategija.
3. Potrebno je standardizovati procedure održivosti kroz interne vodiče i smernice.
4. Preporučuje se uvođenje digitalnih platformi za komunikaciju sa publikom kako bi se povećala svest o održivim praksama.
5. Institucije bi trebalo da obezbede regulatornu podršku organizatorima koji sprovode održive strategije.

## ZAKLJUČAK

Rezultati ovog istraživanja potvrđuju da integracija održivih strategija u menadžment sportskih događaja predstavlja ključni izazov, ali i priliku za unapređenje ekološke odgovornosti u sportskoj industriji. Pokazano je da uspešna implementacija zavisi od dostupnih resursa, organizacionih kapaciteta, edukovanosti timova i uključivanja lokalne zajednice. Iako su prepoznate brojne prepreke — od visokih troškova do logističkih barijera — nalazi ukazuju da postoji realan prostor za prevazilaženje ovih izazova uz pomoć strateškog planiranja i digitalnih rešenja.

Istraživanje je takođe doprinelo identifikaciji konkretnih preporuka koje mogu poslužiti kao smernice organizatorima sportskih događaja u pravcu veće održivosti. Buduća istraživanja trebalo bi da se fokusiraju na dugoročne efekte implementiranih mera i mogućnosti kreiranja nacionalnih standarda za održivo upravljanje sportskim manifestacijama.

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## IMPLEMENTATION OF SUSTAINABLE STRATEGIES IN SPORTS EVENT MANAGEMENT: ANALYSIS OF SUCCESS FACTORS AND KEY BARRIERS <sup>1</sup>

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**Abstract:** This paper analyzes the implementation of sustainable (“green”) strategies in sports event management. The objective of the study was to identify the key barriers to successful implementation of these strategies and to formulate recommendations for improving practice. A combination of qualitative and quantitative methods was used, including structured questionnaires, semi-structured interviews, document analysis, and direct observation. Three sporting events of varying scales held in Serbia in 2023 were analyzed. The implementation of sustainable strategies was found to depend on the size of the event and the available resources. The main obstacles to implementing these strategies were high costs, lack of skilled personnel, and logistical barriers. A positive impact of involving the local community and using digital technologies on the effectiveness of ecological measures was confirmed. The results clearly indicate that organizational capacity and resources are key factors for the successful application of sustainability. The identified barriers suggest the need for a systematic approach, greater institutional support, and continuous staff education. Integrating sustainability into the organization of sporting events requires detailed planning, institutional backing, and education. The recommendations presented in this paper can help organizers to more effectively implement sustainable practices and overcome existing barriers.

**Keywords:** *sustainability, green strategies, sporting events, management, ecological practices*

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### INTRODUCTION

In modern society, the concept of sustainability has become crucial across various sectors, including the sports industry. The organization of sporting events - particularly large-scale ones - can have a significant impact on the environment, the local economy, and the social fabric of the community (Trendafilova et al., 2013). Therefore, the implementation of “green” strategies in sports event management is increasingly important for minimizing negative effects and promoting sustainable development.

Sustainable sports management involves the planned introduction of measures that balance the ecological, economic, and social aspects of organizing sporting events (Kellison & Mondello, 2012). Examples include waste recycling, the use of renewable energy sources, sustainable transport for participants and spectators, and the digita-

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lization of ticketing and access control processes (McCullough et al., 2021). However, the implementation of these measures still varies depending on the scale of the event, local capacities, and managerial proficiency.

Previous research indicates that sporting event organizers are increasingly aware of the importance of sustainability, but they simultaneously face challenges in applying concrete solutions—particularly in terms of costs, logistics, and a weak regulatory framework (Babiak & Trendafilova, 2011; McCullough et al., 2020). Moreover, sustainability practices in sports are still not systemically standardized, leaving room for further research and the development of models to help unify approaches.

The aim of this paper is to explore and analyze examples of sustainable strategies in sports event management, identify key barriers to their implementation, and propose a model of recommendations for improving practice.

Based on this aim, the following hypotheses were formulated:

H1: Sporting event organizers are increasingly applying sustainable strategies in practice, but the implementation significantly depends on the event size and budget.

H2: The most common barriers to implementing “green” strategies are high initial costs, lack of skilled staff, and logistical barriers.

H3: Involving the local community and applying digital technologies has a positive impact on the effectiveness of implementing sustainable practices in sporting events.

## METHOD

The Method section presents the research procedure in detail to allow for study replication and verification of findings. In line with the research objectives and hypotheses, a combination of qualitative and quantitative methods was applied, with a focus on case studies and data collection through structured questionnaires and interviews.

### Sample

Three sporting events were analyzed in this study, selected based on the following diversity criteria:

- Size and scope of the event (local, regional, international),
- Degree of sustainable strategy implementation (declarative vs. concretely implemented measures),
- Availability of organizational documentation and participant consent for participation in the research.

*The events included in the study:*

1. Belgrade Marathon 2023 (Serbia)
  - Number of participants: 6,400 runners; approximately 20,000 spectators
  - Organizer: Belgrade Marathon LLC
  - Notable sustainable practices: recycling, eco-friendly promotional materials, sponsorships aligned with ESG goals
2. Regional Futsal Tournament “Eco Cup” 2023 (Novi Sad, Serbia)
  - Number of participants: 18 teams (around 180 athletes); 500 spectators
  - Organizer: Green Team Sports Association
  - Sustainable practices: educational workshops, plastic packaging ban, local food sourcing
3. Local School Athletics Meeting (Valjevo, Serbia, 2023)
  - Number of participants: 280 students from 12 primary and secondary schools
  - Organizer: School Sports Association of Valjevo
  - Sustainable practices: biodegradable equipment, local volunteers, paper recycling campaign

### Data Collection Techniques

Data were collected between June and December 2023 using the following techniques:

- Structured questionnaire with closed and semi-open questions, distributed to participants (n=212 total, distributed per event)
- Semi-structured interviews with key organizers (n=9 total; 3 per event), lasting between 25 and 45 minutes
- Document analysis: promotional materials, sustainability strategic plans, post-event reports
- Direct observation: researcher attendance at the events, keeping observational records, photos, and notes on green practice implementation

## Procedure

1. Planning – criteria for event selection were defined and organizers contacted
2. Data Collection – interviews were conducted and questionnaires distributed (both electronically and in person)
3. Instrument Validation – the questionnaire and interview guide were pilot-tested with 10 respondents not involved in the main sample
4. Coding and Transcription – interviews were audio-recorded, then transcribed and thematically coded
5. Quantitative Data Entry – questionnaire responses were entered into statistical analysis software

## Statistical Data Processing

Quantitative data from the questionnaires were analyzed using IBM SPSS Statistics, version 27.0.

The following statistical methods were applied:

- Descriptive statistics (means, standard deviations) to show basic trends
- Chi-square test ( $\chi^2$ ) to assess statistically significant differences between the events regarding sustainability perception
- Correlation analysis (Spearman's rho) to examine the relationship between sustainability awareness and willingness to change behavior among participants

Qualitative data from the interviews were analyzed using thematic analysis according to the Braun and Clarke (2006) guidelines, with the aid of MAXQDA 2022 software for coding and categorizing thematic units.

## Research Ethics

Data on sustainable practices at the analyzed sporting events were mainly obtained through publicly available sources such as promotional materials, organizers' websites, and media reports. Additional information was gathered via informal conversations with organizers and participants, without audio recording or collection of identifiable data.

In accordance with research ethics:

- Participants were informed about the purpose of the study, and participation was voluntary
- No sensitive information or personal data was collected
- Anonymity of all participants and organizations was fully preserved
- The research involved no intervention and did not include minors

Due to the nature of the study and the use of publicly available sources, formal written consent was not required, in line with qualitative research standards in social sciences.

## RESULTS

### Sample Structure of Respondents

A total of 212 participants took part in the study, distributed across the three analyzed sporting events. Demographic data included gender, age, and the number of participants per event, allowing insight into the diversity of the sample and potential impact of these factors on attitudes toward sustainable practices (Table 1).

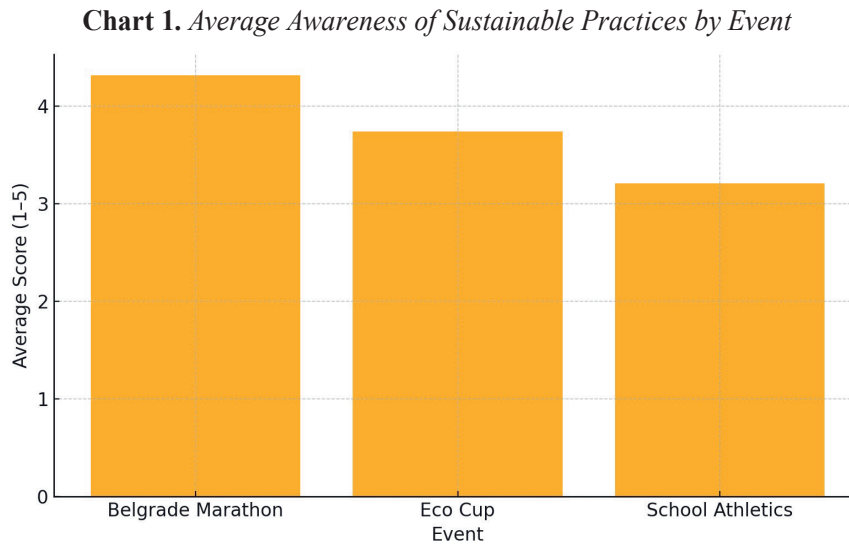
**Table 1.** *Sample structure by event, gender, and age*

Event	Number of Respondents	Gender (% M/F)	Age Structure (Mean $\pm$ SD)
Belgrade Marathon	94	61 / 39	34.8 $\pm$ 7.2 years
Eco Cup – Regional Futsal Tournament	67	74 / 26	29.3 $\pm$ 5.5 years
Local School Athletics Meeting	51	53 / 47	17.6 $\pm$ 1.8 years
Total	212	63 / 37	29.7 $\pm$ 8.1 years

Note: Mean – arithmetic mean; SD – standard deviation

### Assessed Awareness of Sustainable Strategies Among Participants

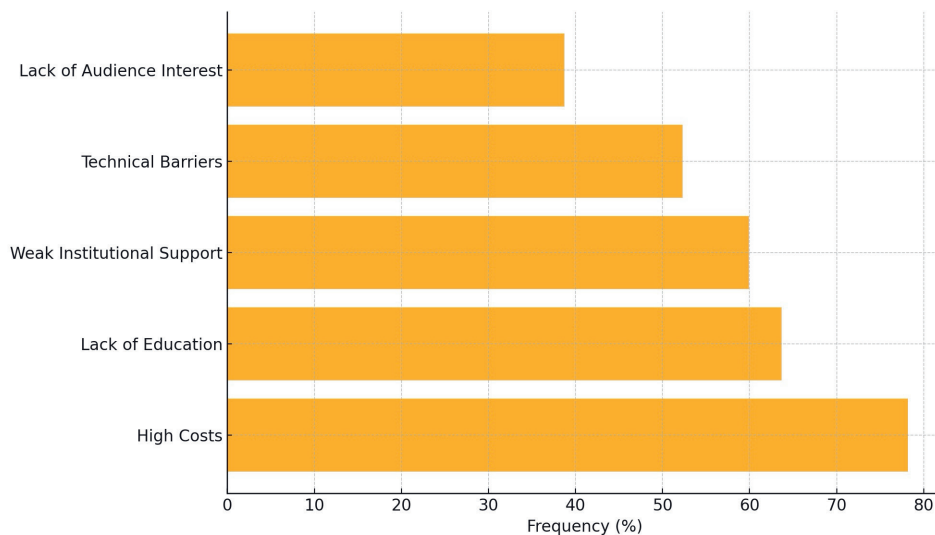
Participants rated their awareness of sustainable practices on a scale from 1 (very low awareness) to 5 (very high awareness). The highest level of awareness was recorded among the participants in the Belgrade Marathon (Mean =  $4.32 \pm 0.61$ ), while the lowest was observed among the participants in the School Athletics Meeting (Mean =  $3.21 \pm 0.95$ ). Those who participated in the Eco Cup reported a moderate level of awareness (Mean =  $3.74 \pm 0.88$ ) (Chart 1).



### Most Frequently Identified Barriers to Implementing Sustainable Strategies

The most frequently identified barriers reported by the respondents were high costs (78.2%), lack of education (63.7%), weak institutional support (59.9%), and technical-logistical barriers (52.3%). A smaller number of participants (38.7%) also highlighted insufficient public interest as a barrier (Chart 2).

**Chart 2. Frequency of Mentioned Barriers in the Implementation of Sustainable Practices**



### Correlation Between Awareness and Willingness to Engage in Sustainable Behavior

To examine the relationship between awareness levels and personal willingness to engage in sustainable behavior (e.g., using personal packaging, using public transport, recycling), Spearman's correlation analysis was

applied. A significant positive correlation was found ( $\rho = 0.64$ ;  $p < 0.01$ ), indicating a connection between awareness and readiness to take action.

### **Thematic Analysis of Interviews with Organizers**

The analysis of 9 semi-structured interviews with event organizers identified five most common thematic areas describing the challenges and factors influencing the implementation of sustainable strategies. The results are presented in Table 2.

**Table 2.** *Key Themes Identified through Thematic Analysis of Interviews*

<b>Theme</b>	<b>Frequency of Occurrence</b>	<b>Brief Interpretation</b>
Cost Inefficiency	High	Sustainability requires additional investments.
Individual Enthusiasm	High	Key individuals often bear the entire burden.
Audience Impact	Medium	The audience sometimes responds positively to incentives.
Lack of Standards	High	Absence of formal guidelines and regulations.
Role of Local Community	Medium	Involving local actors facilitates implementation.

## **DISCUSSION**

The results clearly confirm all three hypotheses presented in the study. The first hypothesis (H1), suggesting that the implementation of sustainable strategies in sporting events depends on the size and budget of the event, was confirmed through the analysis of events of varying scales. The Belgrade Marathon, as the largest event analyzed, demonstrated the highest level of participant awareness about sustainable practices ( $AS = 4.32 \pm 0.61$ ) and encompassed the widest range of ecological measures — from recycling and biodegradable promotional materials to collaboration with ESG-oriented sponsors. In contrast, the local school athletics meeting showed the lowest level of sustainability implementation, indicating the significance of resources and organizational capacity in the execution of green strategies.

The second hypothesis (H2), which states that high costs, lack of skilled staff, and logistical barriers are the main obstacles to implementing sustainability, was also confirmed. The quantitative part of the study shows that 78.2% of the participants see high costs as a key challenge, while a significant percentage highlights the lack of education and weak institutional support as hindering factors. These findings underscore the need for more structured support for organizers, particularly for smaller and mid-sized events.

The third hypothesis (H3), which assumes a positive impact of digital technologies and local communities on the effectiveness of implementation, was confirmed through the interview analysis. Organizers emphasized that digital tickets, online communication, and locally engaged volunteers contribute not only to operational sustainability but also to strengthening community support. The qualitative analysis revealed that individual enthusiasm and the involvement of local stakeholders can significantly alleviate limitations caused by financial and technical barriers.

### **Practical Implications**

The research highlights the need for sustainability to become an integral part of sports event management strategies, regardless of the event size. It is crucial that organizers integrate ecological measures during the planning phase and clearly communicate their importance to all stakeholders — from the audience to partners. Actively involving the local community can contribute to operational efficiency, while digital solutions facilitate logistics optimization and reduce the negative environmental footprint. Furthermore, systematic monitoring and evaluation of the effects of sustainable measures are recommended, as well as the inclusion of sustainability goals in institutional and public policies in sport.

## Recommendations

The following recommendations, based on the findings of this study, represent a contribution to improving practice in sports event management:

1. Organizers should define budget lines for ecological measures during the event planning phase.
2. It is essential to continuously educate organizational teams on the implementation of green strategies.
3. Sustainability procedures should be standardized through internal guides and guidelines.
4. The introduction of digital platforms for communication with the audience is recommended to increase awareness of sustainable practices.
5. Institutions should provide regulatory support to organizers implementing sustainable strategies.

## CONCLUSION

The results of this research confirm that the integration of sustainable strategies in sports event management presents both a key challenge and an opportunity to improve ecological responsibility within the sports industry. It has been shown that successful implementation depends on available resources, organizational capacity, team education, and the involvement of the local community. While numerous barriers have been identified — from high costs to logistical obstacles — the findings suggest that there is a real opportunity to overcome these challenges through strategic planning and digital solutions.

The research has also contributed to identifying concrete recommendations that can serve as guidelines for sporting event organizers toward greater sustainability. Future research should focus on the long-term effects of the implemented measures and the potential for creating national standards for sustainable sports event management.

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