Razbornik, I., Todosijević, S. (2024) Artificial intelligence as a grant writing assistant: a game-changer for funding amateur sport in the EU In: Dašić, D. (ed) Sporticopedia SMB2024, Vol 2, No 1, 233-244

Review
Received: 26.10.2024
Accepted: 15.11.2024

DOI: https://doi.org/10.58984/smbic240201233r

Coresponding author: igor.razbornik@gmail.com

ARTIFICIAL INTELLIGENCE AS A GRANT WRITING ASSISTANT: A GAME-CHANGER FOR FUNDING AMATEUR SPORT IN THE EU

Igor Razbornik [1], Sanja Todosijević [2]

Abstract: Amateur sports organisations in the EU often struggle to secure funding due to limited resources and expertise in grant writing. This paper explores how Artificial Intelligence (AI) can address this challenge by streamlining and enhancing the grant proposal development process. A pilot project conducted in Slovenia demonstrates AI's capacity to empower non-professional grant writers, resulting in increased success rates in securing EU funding. The study also reveals the need for structured methodologies and ongoing support to maximise the benefits of AI in grant writing. This research highlights AI's transformative potential in democratising access to funding and fostering a more vibrant and inclusive amateur sports landscape in the EU.ing access to funding and fostering a more vibrant and inclusive amateur sports landscape in the EU.

Keywords: Artificial intelligence (AI), Grant writing, Sports organisations, Funding

[1] MBA, Smart Institute, Šalovci 187, Slovenia, E-mail: igor.razbornik@gmail.com, ORCID ID 0009-0007-1538-1271

[2] MBA, High School of Tourism, Otona Župančiča 4, Beograd, Serbia, E-mail: sanja1todosijevic@gmail.com, ORCID ID 0009-0002-8044-5941

Introduction

The increasing complexity and competitiveness of grant funding landscapes pose significant challenges for sports organisations, particularly those with limited resources and expertise. Artificial Intelligence (AI) has emerged as a promising tool to address these challenges, offering potential solutions to streamline and enhance the grant writing process. This article investigates sports organisations' difficulties securing funding and examines how AI technologies can be strategically leveraged to overcome them.

Research Question: How can Artificial Intelligence tools be effectively integrated into the grant writing process to improve the success rate of funding applications for amateur sports organisations in the European Union?

Hypothesis: Integrating AI-powered tools in the grant writing process will significantly enhance the quality of funding proposals and increase the success rate of securing grants for amateur sports organisations in the EU, particularly for those with limited resources and expertise.

Aims:

1. To identify the specific challenges amateur sports organisations face in grant writing.
2. To explore how AI can enhance the grant proposal development process.
3. To evaluate the effectiveness of AI-assisted grant writing through a case study.

This research aims to contribute to the growing knowledge of AI applications in non-profit sectors and provide practical insights for sports organisations seeking to leverage technology in their fundraising efforts. By examining both the potential benefits and considerations of AI integration in grant writing, this study offers a balanced perspective on this emerging trend and its implications for sports funding in the EU.

Results and discussion

The Problem: Funding Barriers for Amateur Sports Organizations

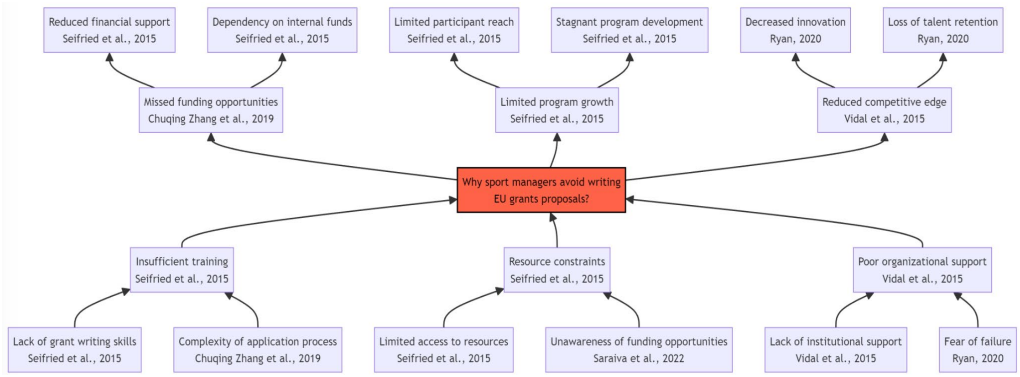
Amateur sports organisations, especially those operating at the grassroots level, often encounter significant challenges in securing crucial funding. This is primarily due to a lack of specialised knowledge and experience in grant writing, a critical skill in navigating the complex and competitive landscape of EU grant opportunities (Seifried et al., 2015). The absence of these skills leads to missed funding opportunities, hindering the growth and development of these organisations.

A deeper dive into the literature reveals a multifaceted problem.

- A lack of grant writing skills impedes insufficient training opportunities and limited awareness of best practices in proposal development (Seifried et al., 2015). The complexity of the EU grant application process, with its intricate requirements and extensive documentation, further exacerbates this challenge (Chuqing Zhang et al., 2019).
- Resource constraints also pose a substantial hurdle. Amateur sports organisations often operate with limited budgets and personnel, making it challenging to dedicate time and effort to grant writing. Furthermore, a lack of awareness regarding available funding opportunities can lead to missed chances, even when organisations can apply (Saraiva et al., 2022).
- Organisational factors also play a role. Inadequate institutional support, characterised by a lack of encouragement or mentorship from within the organisation, can discourage sports managers from pursuing grant applications (Vidal et al., 2015). Additionally, the fear of failure, stemming from perceived high stakes and a lack of confidence in their abilities, can deter individuals from engaging in the process (Ryan, 2020).

The combined impact of these barriers results in a significant loss of potential funding for amateur sports organisations. Missed funding opportunities reduce financial support and limit program growth, participant reach, and innovation (Seifried et al., 2015). This, in turn, can lead to decreased competitiveness, talent loss, and an over-reliance on internal funding sources, threatening the long-term sustainability of these organisations. Addressing these barriers is essential for the continued growth and development of amateur sports in the EU.

Figure 1: *Root Cause Analysis of Funding Barriers and Their Impact on Amateur Sports Organizations*



Artificial Intelligence as a Potential Solution

Integrating AI tools into grant writing workflows presents an effective solution to these challenges. AI has the potential to automate time-consuming research tasks, identify relevant funding opportunities tailored to an organisation's specific needs, and generate well-structured, persuasive narratives that adhere to professional standards. Additionally, AI-powered language refinement tools can ensure that proposals are clear, concise, and error-free, significantly increasing the likelihood of successful applications.

Beyond Human Capability: AI as a Language Mastery Tool

One of AI's most powerful aspects in grant writing is its ability to transform language. While AI can automate research and identify funding opportunities (Huang et al., 2021), its prowess in language enhancement is where it truly shines as a game-changer. Grant writing often demands a delicate balance of technical precision and persuasive storytelling (Karsh & Fox, 2009). This can be a daunting challenge, especially for those with a writing or communications background.

AI-powered language tools act as virtual editors, constantly refining grammar, syntax, and style to ensure polished and professional proposals. But their capabilities extend far beyond simple proofreading (Hovy, 2021). AI can analyse text for clarity, conciseness, and coherence, suggesting improvements in sentence structure and word choice. It can even identify and correct inconsistencies in tone or voice, ensuring a consistent and persuasive narrative throughout the proposal (Dale, 2016).

This is where AI becomes a true ally for the idea-driven grant writer (Kitchin, 2014). Instead of writers getting bogged down in the nuances of language, grant writers can focus their energy on developing a clear project concept. They can articulate their vision without worrying whether their words are flowing smoothly or their message is clear (Gillespie, 2014). The AI takes on the heavy lifting, transforming disjointed thoughts and ideas into a structured, persuasive text that resonates with the reader.

This can be particularly empowering for non-native English speakers or those less experienced in writing. AI tools can bridge language barriers and level the playing field, ensuring that everyone can communicate their ideas effectively, regardless of their linguistic background. Ultimately, AI-powered language enhancement not only improves the quality of grant proposals but also liberates grant writers to focus on what truly matters: their innovative ideas and the impact they can have on their communities (Wang & Liu, 2023).

Additional Roles of AI in Grant Writing

Beyond language enhancement, AI tools offer a wide array of affordable support funtions throughout the grant writing process:

- Research Assistant: Thorough research is the foundation of any successful grant proposal. It involves identifying existing solutions, understanding current research, and demonstrating the need for the proposed project. By leveraging AI's ability to summarise vast amounts of data, grant writers can quickly grasp the context and identify key findings relevant to their proposals. AI can even present this information in alternative formats like mind maps (as in Figure 1 in this article), enhancing comprehension and facilitating idea generation.
- Knowledge Repository: AI is an invaluable mentor for novice or inexperienced grant writers. It serves as a centralised library of knowledge, offering access to best practices, funding requirements, and evaluation criteria with a single click. This readily available expertise helps bridge the knowledge gap, ensuring proposals adhere to professional standards and meet funder expectations.
- Project Structuring: AI can even contribute to the conceptualisation of a project. Using analysis of potential impacts and outcomes, AI can suggest a logical framework for the project, complete with specific objectives, measurable indicators, and realistic timelines. This allows grant writers to strategically structure their projects before diving into the writing process, increasing the coherence and impact of the final proposal.
- Project Evaluation: A largely untapped potential of artificial intelligence in grant writing lies in quality assurance and evaluation. Our research explored various AI-powered methodologies to assess grant proposals in a way similar to that of human evaluators. Our findings reveal that AI-supported evaluation is more precise and provides actionable steps for improvement, allowing for a comprehensive quality assurance cycle before submission. This iterative process of AI-assisted evaluation is particularly valuable for non-expert grant writers. By receiving detailed feedback and suggestions for improvement, they can refine their proposals multiple times, significantly enhancing the overall quality. This innovative approach empowers individuals and organisations to confidently submit high-calibre applications, even without extensive grant writing experience.

These diverse AI functionalities demonstrate the technology's potential to transform grant writing from a daunting task into a collaborative and efficient process. By leveraging AI's capabilities, amateur sports organisations can improve the quality of their

proposals and gain a deeper understanding of the grant landscape, ultimately increasing their chances of securing much-needed funding.

Essential Considerations for AI Integration

While AI offers significant potential, its use in grant writing requires careful consideration:

- Human Guidance: AI tools should be viewed as assistive technologies that augment, rather than replace, human expertise. Human oversight is crucial to ensure that AI-generated content is accurate, relevant, and aligned with the organisation's goals.
- Collaborative Approach: The most effective grant writing strategies combine AI's strengths with human creativity and domain knowledge. This collaborative approach fosters a balance between technical proficiency and compelling storytelling.

Case Study: Experimenting with AI in Sport Grant Writing

It's important to note that the initial stages of this research were not designed as a formal academic study. Rather, driven by the rapid advancements in artificial intelligence and a persistent desire to assist amateur sports organisations in securing funding, we embarked on an exploratory journey. This journey led us to discover the promising potential of AI applications in grant writing.

To test this potential, Igor Razbornik and Katja Koren, OLY, initiated a pilot project with the support of the Olympic Committee of Slovenia. The primary goal of this project was to assess whether AI could effectively empower amateur sports personnel to navigate the complex process of securing EU grants.

Training 1 (September 2022)

The project, focused on teaching athletes to write Erasmus+ grant proposals, spanned ten weeks and employed a blended learning approach. It began on September 15, 2022, with an introductory online session outlining the methodology and structure, attended by 55 participants. We used an AI tool called Jasper since it was before ChatGPT and similar tools. Following the online introduction, a three-day, in-person workshop was held at the Slovenian Olympic Committee (OKS) headquarters in Ljubljana. This workshop, attended by 21 participants, fostered a deeper understanding of the workshop's objectives and facilitated networking among participants.

The training's core was a six-week online training program led by an instructor and a team of eight mentors. This format allowed participants to learn and collaborate

remotely, offering flexibility and accessibility. Active participation granted continuous access to expert guidance.

By the end of the project, six grant proposals were submitted, three of which were granted in September 2023. Despite declining participant numbers throughout the program, the project successfully equipped the remaining participants with the knowledge needed to write a grant.

Training 2 (January 2024)

The training methodology was restructured in response to feedback from the first training session and considering the widespread adoption of affordable AI tools like ChatGPT, Gemini, and Claude in early 2024. The blended learning approach was replaced with a fully in-person format, leveraging AI tools at every stage of the project – planning, structuring, and writing. This allowed for a condensed four-day training program, yielding better results than the initial ten-week course.

The shift to in-person training was motivated by several factors. While the previous 10-week format had proven effective for teachers, it was less suitable for athletes who often struggle to commit to such a long-term engagement. Athletes are accustomed to working closely with coaches, and their physical presence is crucial for fostering commitment, maximising potential, and providing a sense of support. While digital collaboration tools offer similar benefits, the social aspect of in-person interaction outweighs the convenience of virtual meetings.

To accommodate these factors, the training was divided into two two-day sessions, with a week in between for participants to work on their projects independently. After the second session, participants could finalise their work under the guidance of a mentor.

This revised format proved successful, with 25 participants completing the course and submitting 10 project proposals. The results of these applications are expected in autumn 2024.

Key Lessons Learned: Insights from the Slovenian Pilot Project

The Slovenian pilot project yielded valuable insights into the integration of AI into grant writing for sports organisations:

Overcoming the AI Adoption Hurdle: Initial apprehension towards AI-powered grant writing, often stemming from prior negative or limited experiences, was a significant hurdle. However, structured training and hands-on experience with AI tools showcasing their benefits in streamlining research, refining language, and enhancing proposal quality gradually transformed scepticism into appreciation. This highlights

the importance of comprehensive training and guided experiences in fostering AI adoption, especially in fields where its application is novel.

1. **Demand for Continued Education and Support**: While participants recognised AI's value, they strongly desired ongoing training and resources to deepen their understanding of AI-powered grant writing methodologies. This underscores the need for sustained educational initiatives and support systems to empower users to maximise the potential of AI tools in their grant-writing endeavours.
2. **Structured Methodology for Success**: A clear, step-by-step methodology is crucial for guiding users through the entire grant writing process, from initial ideation to final submission. This structured approach provides a roadmap, especially for those new to grant writing, ensuring that no critical steps or requirements are overlooked, thereby increasing the chances of a successful application.
3. **Mentorship and Guidance as Catalysts**: Access to experienced grant writers for mentorship and ongoing support is invaluable. This enables participants to seek clarification, receive constructive feedback on their proposals, and learn from the expertise of seasoned professionals. Such guidance fosters a collaborative learning environment and accelerates the development of grant writing skills.
4. **Cultivating a Changed Mindset and Persistence**: The project revealed a significant shift in mindset among participants. They recognised that grant writing, even with AI assistance, is an iterative process that demands persistence and adaptability. The willingness to resubmit proposals, incorporate feedback, and refine the approach can significantly improve the odds of success. This adaptive mindset acknowledges that even the most promising ideas might not be immediately accepted and encourages a long-term commitment to securing funding.

From Generative to Transformative AI: A New Methodology

The insights from these key lessons, particularly the need for structured guidance and continuous refinement, led to a pivotal shift in our approach to AI-powered grant writing. While generative AI models like ChatGPT, Gemini, and Claude had become widely accessible and affordable by early 2024, we recognised their limitations in fully empowering inexperienced grant writers. While adept at generating text based on

prompts, these models often needed to do more to harness AI's full potential to guide users through the complexities of grant writing.

We developed a new methodology called Transformational AI (TRAI) to address this. Unlike generative AI, which primarily focuses on producing outputs, TRAI emphasises the multi-step transformation of data structures. This approach mirrors the natural thought process and writing flow, allowing an initial project idea to evolve into a comprehensive and compelling grant application through iterative refinement (Razbornik & Todosijevic, 2024).

Generative AI	Generative AI is artificial intelligence that creates new content, such as text, images, or music (Brown et al., 2020). It learns patterns from existing data and uses this knowledge to generate original outputs. Unlike traditional AI, which focuses on analysing or classifying information, generative AI focuses on creating new content similar in style and structure to its training data.
Transformational AI	Transformational Artificial Intelligence (TRAI) focuses on the multi-step transformation of data structures. It serves as the foundation for fundamentally changing workflows across diverse fields. TRAI systems enable new working methods by progressively manipulating data through operations, ultimately driving broad societal changes (Razbornik & Todosijevic, 2024).

With TRAI, grant writers can focus solely on their project idea, while the AI assists with ideation, examples of good practice, research, writing, evaluation, etc. The AI transforms the information at each stage, adding new findings, strategic decisions, and relevant details. This iterative process ensures that the final proposal is well-structured, persuasive, and deeply aligned with the grant's requirements and objectives.

Our research underscores a crucial finding: successful grant writing is not as simple as pushing an "AI button." It requires time, dedication, and a strategic approach. While generative AI models offer a starting point, our experience suggests that the Transformational AI (TRAI) methodology is more effective, particularly for those new to grant writing. By providing a structured framework and continuous support throughout the entire process, from ideation to submission, TRAI empowers individuals and organisations to navigate the complexities of grant applications with confidence. This comprehensive approach not only streamlines the writing process but also significantly enhances the quality of the final proposal, ultimately increasing the likelihood of securing funding.

Conclusion

Integrating AI into grant writing workflows represents a transformative opportunity for sports organisations, particularly those at the grassroots level. By harnessing AI's capabilities in research, text generation, and language refinement, these organisations can overcome resource constraints, enhance the quality of their proposals, and increase their chances of securing vital funding. Recent research, particularly the novel Transformational AI (TRAI) framework, proposes a structured methodology and ongoing support that can empower non-professional grant writers, ultimately contributing to the sustainability and growth of the sports sector.

The evolution of AI-powered grant writing tools, especially with the advent of TRAI, holds immense potential to democratise access to funding and foster a more vibrant and inclusive sporting landscape. As AI technology advances, sports organisations must embrace these innovations and adapt their grant-writing practices to leverage the full benefits of this transformative tool. The broader implications of TRAI extend beyond sports, promising to change grant writing across various sectors. By providing a structured, iterative approach that mirrors the natural thought process, TRAI can empower individuals and organisations in any field to navigate the complexities of grant applications with confidence and skill. This could significantly increase successful funding applications, fueling innovation and progress across a wide range of disciplines.

References

1. Brown, T. B., Mann, B., Ryder, N., Subbiah, M., Kaplan, J., Dhariwal, P., ... & Amodei, D. (2020). Language models are few-shot learners. Advances in Neural Information Processing Systems, 33, 1877-1901.
2. Chuqing Zhang, Y., Yan, W., & Yu, Z. (2019). A comparative study on grant application strategies for collaborative scientific research projects in the European Union and China. Science and Public Policy, 46(5), 632-645.
3. Dale, R. (2016). The return of the paragraph: Using Big Data to Study Writing. Research in Teaching English, 50(4), 380-406.
4. Gillespie, T. (2014). The relevance of algorithms. In Media Technologies (pp. 167-182). Routledge.
5. Hovy, E. H. (2021). Ten challenges in natural language processing. Computational Linguistics, 47(1), 1-16.
6. Huang, J., Rust, R. T., & Maksimovic, V. (2021). Artificial intelligence in service. Journal of Service Research, 24(1), 4-12.

7. Karsh, B., & Fox, C. R. (2009). The only grant-writing book you'll ever need. Carroll & Graf Publishers.
8. Kitchin, R. (2014). The data revolution: Big data, open data, data infrastructures and their consequences. Sage.
9. Razbornik, I., & Todosijevic, S. (2024). Transformational Artificial Intelligence (TRAI): Revolutionizing the Modern Business World. Economy and Market Communication Review, Vol XiV, pp. 265-275
10. Russell, S. J., & Norvig, P. (2020). Artificial intelligence: A modern approach (4th ed.). Pearson Education.
11. Ryan, J. (2020). Understanding the grant writing process: Perspectives of sport management academics in the United Kingdom. Managing Sport and Leisure, 25(1-2), 33-49.
12. Saraiva, P., & Myers, J. (2022). Funding Challenges and Strategies of Grassroots Sports Clubs in Portugal: A Qualitative Study. European Sport Management Quarterly, 22(4), 512-532.
13. Seifried, J., Wicker, P., & Pepin, Y. (2015). Sport Management Education in Europe: Results of a Mapping Study. European Journal for Sport and Society, 12(3), 239-260.
14. Vidal, S., Olea, A., & Puig, N. (2015). A Model for Understanding the Institutionalization of Sport for Development and Peace. Sport Management Review, 18(3), 265-276.
15. Wang, W., & Liu, N. (2023). A review of artificial intelligence in education from 2010 to 2020. Smart Learning Environments, 10(1), 1-26.
16. Zhang, Y., Gan, Z., & Caragea, C. (2019). Automated Essay Scoring with Discourse-Aware Neural Models. In Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics (pp. 4102-4111).

Razbornik, I., Todosijević, S. (2024) Artificial intelligence as a grant writing assistant: a game-changer for funding amateur sport in the EU In: Dašić, D. (ed) Sporticopedia SMB2024, Vol 2, No 1, 233-244