

UDC 330.3

DOI: 10.53068/25792997-2025.1.14-181

## NEUROMARKETING IN SPORTS: UNDERSTANDING FAN BEHAVIOR

*Hovhannes (Ruben) Yeritsyan*

Armenian State Institute of Physical Culture  
and Sport, Yerevan, Armenia

**Keywords:** Neuromarketing, fan behavior, sport marketing, EEG in sports, sports fan psychology.

### Introduction

**Research relevance:** The relevance of this research lies in the growing significance of neuromarketing as a strategic tool in understanding and influencing fan behavior in the sports industry. As sports organizations and brands increasingly recognize the emotional and psychological connection fans have with their teams and events, leveraging insights from neuromarketing provides a powerful mechanism to enhance fan engagement, loyalty, and overall experience.

• **Fan-Centric Approach:** Sports organizations are increasingly shifting towards fan-centric marketing strategies. Neuromarketing, which combines neuroscience and marketing, offers unique insights into fan preferences, emotional responses, and unconscious decision-making processes.

• **Competitive Advantage in a Saturated Market:** Neuromarketing techniques, such as **biometric analysis**,

**fMRI**, and **eye-tracking**, enable sports marketers to refine their strategies, ensuring they can capture and retain fan attention in an increasingly competitive and saturated marketplace.

• **Enhanced Fan Experience:** The fan experience is a critical driver of revenue in the sports industry. Research into **neuromarketing** offers an in-depth understanding of what triggers emotional responses in fans - be it through **sensory marketing** (sights, sounds, and smells), the emotional appeal of advertisements, or the design of immersive experiences, such as **virtual reality**. This research is pivotal for improving **stadium experiences**, tailoring digital content, and enhancing overall fan satisfaction.

• **Impact on Sports Sponsorship and Brand Partnerships:** Neuromarketing helps to uncover the subconscious impact of sponsorships and partnerships between brands and sports organizations. By measuring fan emotional engagement with sponsor-related content, brands can better align themselves with fan values and

preferences, thereby maximizing their marketing spend and strengthening partnerships.

• **Contributions to Sports Science and Psychology:** The research also contributes to the broader fields of **sports psychology** and **consumer neuroscience**, offering valuable insights into how sporting experiences influence fan psychology. This knowledge has implications not only for marketing but also for the **well-being of fans** and the **psychological impact of sports** as entertainment.

• **Future of Sports Marketing:** As technology continues to evolve, the role of neuromarketing in sports is expected to grow. This research is timely and relevant, as it helps sports marketers adapt to new trends, such as **immersive technologies** (VR, AR), **real-time data analytics**, and **personalized fan experiences**, which are reshaping the sports landscape.

In the fast-paced world of sports, where fan loyalty is a critical determinant of financial and reputational success for teams and organizations, understanding the intricate psyche of the audience is paramount. Neuromarketing, an innovative interdisciplinary approach that merges neuroscience and marketing, provides a window into the subconscious

behaviors and preferences of sports enthusiasts. By leveraging advanced brain science, sports marketers can design data-driven strategies that not only resonate deeply with their audience but also create emotionally compelling connections, fostering both engagement and long-term loyalty.

**Research aim and objectives:**The primary goal of this research is to explore how neuromarketing can be used to better understand and influence fan behavior in the sports industry and by examining the relationship between neurological responses and fan interactions.

The specific objectives of the research are to:

1. To examine the role of emotional engagement in sports marketing and Investigate how emotional responses, such as excitement, nostalgia, and joy, influence fan behavior and engagement with sports content.

2. To analyze the impact of neuro-marketing tools on fan experience and assess the effectiveness of various neuromarketing techniques, such as biometric analysis, eye tracking, EEG, and fMRI, in understanding fan preferences and emotional responses.

3. To identify key psychological triggers for fan loyalty and investigate the psychological factors that drive fan loyalty,

including emotional attachment to teams, personal identity, and social connections within fan communities.

4. To explore the impact of sensory marketing on fan behavior and examine the role of sensory elements (visuals, sounds, scents) in enhancing fan experiences and emotional engagement with sports brands and events.

5. To evaluate the effectiveness of virtual reality (VR) and immersive technologies in fan engagement and study how VR, augmented reality (AR), and other immersive technologies impact fan interactions with sports content and events.

6. To investigate the influence of sports sponsorships and brand partnerships on fan behavior and examine how fan reactions to sponsorships and brand activations are influenced by neuromarketing insights.

**Research methods and organization:** To achieve the objectives of this research, a mixed-methods approach are utilized, combining both qualitative and quantitative research techniques. This approach allows for a comprehensive understanding of how neuromarketing techniques influence fan behavior in the sports industry. By using a combination of these research methods, the study aims to provide a comprehensive understanding

of how neuromarketing influences fan behavior and how sports organizations can apply these insights to improve fan engagement and loyalty.

### **Research results and analysis:**

#### **The Science Behind Neuromarketing**

Neuromarketing uses cutting-edge tools such as EEG (electroencephalography), eye-tracking, and fMRI (functional magnetic resonance imaging) to study how consumers react to various marketing stimuli. These advanced tools enable researchers to probe deeper into the psychological and neurological responses of fans, uncovering insights that traditional methods often overlook. EEG captures electrical activity in the brain, allowing marketers to identify moments of heightened engagement or stress during an event or advertisement. Eye-tracking pinpoints exactly where a fan's gaze is directed, offering clues about visual elements that command attention or generate confusion. Meanwhile, fMRI measures changes in blood flow within the brain, providing a precise map of neural activity associated with emotional reactions and decision-making processes [2].

These sophisticated methods go far beyond surface-level insights, enabling researchers to identify subconscious responses to advertisements, sponsorship

activations, and game-day experiences. For example, neuromarketing can reveal whether a particular sponsorship logo elicits a positive emotional connection or if the layout of a stadium advertisement distracts from the main action on the field. By capturing minute details such as brain activity patterns, visual attention, and emotional reactions, neuromarketing provides a granular understanding of how marketing efforts influence fans on a subconscious level. Unlike traditional surveys or focus groups, which rely on self-reported data that may be influenced by biases or incomplete recollections, neuromarketing delves into the non-verbalized and often instinctive emotions and preferences of fans. This approach offers sports marketers a more precise and actionable understanding of their audience, empowering them to design strategies that resonate authentically and foster deeper connections.

### **Enhancing Fan Experience**

One of the primary applications of neuromarketing in sports is enhancing the fan experience by providing tailored and immersive interactions. For instance, analyzing eye-tracking data during a live broadcast can reveal which elements of the game, such as specific player movements, scoreboard details, or crowd reactions, capture the most attention.

Teams and broadcasters can use this information to optimize camera angles, refine on-screen graphics, and enhance replay sequences to maintain fan engagement at every moment.

Beyond broadcasts, neuromarketing can significantly influence the design and layout of stadiums. By studying sensory preferences—such as lighting, acoustics, and even the scent of the venue—marketers and designers can create environments that evoke strong emotional responses. For example, strategically placed visuals, such as team logos or dynamic displays, can amplify excitement, while carefully designed seating arrangements and social spaces can foster a sense of community. These insights help develop stadiums that not only provide comfort but also create a memorable and engaging atmosphere that motivates fans to attend games in person, even in an era dominated by the convenience of digital streaming.

Furthermore, neuromarketing can be applied to enhance fan interactions with digital platforms during games. Features like augmented reality overlays, live polls, or personalized content delivered through mobile applications can be tailored based on real-time feedback derived from neuromarketing insights, ensuring a

deeper and more rewarding fan experience [1].

### **Optimizing Sponsorship and Advertising**

Sponsorship deals are a cornerstone of sports marketing, and neuromarketing offers a revolutionary way to optimize their effectiveness. By utilizing tools such as EEG to measure neural responses, eye-tracking to assess visual engagement, and fMRI to evaluate emotional reactions, marketers can determine how sponsor logos, slogans, and commercials resonate on a subconscious level. These insights can reveal not only which elements evoke positive emotions but also how well they enhance brand recall and association.

For instance, neuromarketing can identify whether fans feel an emotional connection to a sponsor through the placement of logos on players' jerseys, stadium advertisements, or digital content. Marketers can then refine the design, color, or positioning of these elements to maximize engagement. Additionally, understanding how fans emotionally connect with a particular athlete can guide the creation of campaigns that feature them prominently in relatable scenarios. By tapping into these emotional bonds, brands can amplify their appeal and authenticity, ensuring a mutually

beneficial outcome for both the sponsor and the sports organization [6].

### **Building Emotional Connections**

Emotion drives fan loyalty. Neuro-marketing helps identify the specific psychological and emotional triggers that strengthen fans' connection to their teams. These triggers can range from the nostalgia evoked by historic victories or iconic moments to the pride fans feel in their community's representation through their favorite team. By decoding these emotional anchors, marketers can design campaigns that go beyond generic messaging, instead fostering a sense of identity and belonging that resonates deeply with fans.

Moreover, personalized content powered by neuromarketing insights can significantly elevate engagement levels. Advanced data analytics and neuro-feedback can help platforms deliver hyper-tailored content such as curated game highlights, emotionally charged player interviews, or exclusive behind-the-scenes footage. This content can be optimized in real-time for maximum emotional impact, ensuring that each interaction feels personal and meaningful. By tapping into these deep-seated connections, sports organizations can not only boost immediate fan engagement but

also build lasting loyalty that transcends seasons [9].

### **Challenges and Ethical Considerations**

Despite its potential neuromarketing in sports raises significant ethical questions that must be addressed carefully. Critics argue that tapping into subconscious behaviors may lead to manipulative practices, influencing consumers to make decisions they might not consciously choose. This concern is especially pronounced in the context of vulnerable audiences, such as younger fans or those with limited understanding of the underlying marketing techniques. To mitigate these risks, sports marketers must adhere to ethical guidelines that prioritize transparency, consent, and respect for fan autonomy. Clearly communicating how data is collected and used, as well as allowing fans the option to opt out, is crucial in maintaining trust and integrity [12].

Another challenge lies in the cost and accessibility of neuromarketing technologies. Advanced tools such as EEG and fMRI require significant financial investment and technical expertise, making them out of reach for smaller sports organizations and grassroots initiatives. This disparity raises concerns about an uneven playing field where only larger

entities can afford to leverage these insights. As the field progresses, efforts to democratize access to neuromarketing tools—through technological innovation, cost reductions, or open-source platforms—will be critical. Encouraging partnerships between academia and smaller organizations could also help bridge this gap, ensuring that the benefits of neuromarketing are shared equitably across the industry.

### **The Future of Neuromarketing in Sports**

As technology advances, the role of neuromarketing in sports will only expand, offering new and innovative ways to understand and enhance fan interactions. Virtual reality (VR) and augmented reality (AR) experiences, when paired with neuromarketing insights, could redefine how fans engage with their favorite teams and players. For example, VR could immerse fans in simulated locker-room experiences or live-action replays from the perspective of their favorite athlete, providing unparalleled emotional and sensory engagement. AR, on the other hand, could enhance live games by overlaying real-time statistics, player profiles, or interactive sponsor messages onto fans' view of the field, creating a multi-dimensional viewing experience.

Furthermore, predictive analytics powered by artificial intelligence (AI) may transform the way sports marketers craft their strategies. By analyzing neuromarketing data, AI can predict fan behaviors and preferences with remarkable accuracy, enabling marketers to tailor content and offers in real time. For instance, during a live match, AI could identify moments of peak excitement and prompt personalized messages or promotions that align with fans' emotional states, fostering deeper connections and driving immediate actions [10].

In conclusion, neuromarketing offers an unprecedented opportunity to decode and cater to the multifaceted emotions of sports fans. By blending rigorous scientific methods with creative marketing strategies, sports organizations can craft experiences that captivate audiences, enhance loyalty, and drive sustained engagement. As the industry increasingly adopts these insights, the bond between fans and their cherished sports will only grow stronger, solidifying neuromarketing as an essential tool in the modern sports marketer's arsenal.

Neuromarketing in sports leverages neuroscience to understand fan behavior, enabling organizations to tailor experiences and products effectively. Here are

some key statistics highlighting the impact of neuromarketing on fan behavior:

**Fan Engagement and Spending:** A survey by Talker Research for SquadLocker revealed that American sports fans watch an average of 120 games per year and are heavily invested both emotionally and financially. Raging fans spend an average of \$879.40 annually on sports-related expenses, while big and moderate fans spend \$593.80 and \$376.10, respectively.

**Social Media Usage:** A Deloitte survey found that 58% of sports fans attending live professional events desire access to the same statistics, analysis, and replays available when watching at home. This desire is particularly strong among Gen Z and Millennials.

**Environmental Concerns:** Analytics IQ reports that golf fans are 36% more likely to purchase green or energy-efficient products for their homes, and both golf and basketball fans are 36% more likely to drive a purely electric car.

**Technology Adoption:** The same report indicates that soccer fans are 51% more likely to be early adopters of technology advances, and basketball fans are 44% more likely to use AirBnB.

**Fan Behavior in Online Communities:** Research on NBA fan communities shows that strong team performance is

associated with fans of low loyalty, likely due to "bandwagon fans." Fans of the bottom teams tend to discuss their team's future, such as young talents in the roster, which may help them stay optimistic during adversity.

In practice, there are some good examples and cases, that reflect the use of neuromarketing in sport [4].

#### 1. NFL and Emotional Branding with Super Bowl Commercials

**Case Overview:** During the Super Bowl, brands recognize the emotional investment fans have in the event. The NFL uses neuromarketing strategies to help advertisers create emotional connections with viewers through impactful commercials that tap into the cultural and emotional significance of the game.

##### Neuromarketing Techniques:

- **Biometric Sensors:** Used to track physiological responses (e.g., heart rate and skin conductance) during commercials to assess emotional arousal.

- **Facial Coding:** Analyzes expressions of happiness, surprise, and even sadness to understand how a commercial impacts viewers emotionally.

- **EEG Brainwave Analysis:** Measures the brain's response to different stimuli, such as excitement or nostalgia, to optimize the emotional appeal of ads.

**Example:** The "Like a Girl" campaign by Always was run during the Super Bowl, which focused on empowering women and challenging stereotypes. Neuromarketing tools helped understand how the ad evoked emotions tied to empowerment, with a significant impact on brand loyalty, particularly among younger audiences.

**Outcome:** Advertisers tailored their messaging to evoke a strong emotional response that resonated with fans, resulting in a memorable ad campaign that had a lasting impact on viewers. Advertisers saw higher levels of engagement and increased consumer loyalty.

#### 2. Real Madrid and Emotional Content Engagement

**Case Overview: Real Madrid,** one of the world's most successful and beloved football clubs, tapped into neuromarketing by analyzing how fans emotionally react to different types of content. The club used biometric tools to assess fan reactions to different forms of media, such as highlights, player interviews, and historic match recaps.

##### Neuromarketing Techniques:

- **Eye Tracking:** Monitors where fans focus their attention during videos, such as key moments in a goal-scoring sequence or fan celebrations.



• **Facial Expression Analysis:**

Helps measure the emotional intensity of fans' reactions to different team moments, such as victories or emotional losses.

• **Neuro-imagery:**

Used to understand which elements of a video evoke the strongest emotional responses (e.g., scenes of past victories, team traditions).

**Outcome:**

Real Madrid discovered that fans responded most positively to content featuring emotional moments, such as major victories and fan celebrations. As a result, the club tailored its marketing strategy by creating more of this emotional, fan-driven content across social media channels, which helped to deepen fan loyalty and increase online engagement.

**Outcome:**

Real Madrid experienced increased social media interactions and a stronger emotional connection between the team and its global fan base.

### 3. NBA and Personalized Fan Experiences

**Case Overview:**

The NBA has leveraged neuromarketing to create highly personalized fan experiences that enhance engagement. By combining data analytics and neuromarketing insights, the NBA has been able to create personalized content and experiences that resonate with fans'

psychological triggers, thus building stronger connections with their audiences.

**Neuromarketing Techniques:**

• **fMRI Scanning:**

Used to measure brain activity when fans are exposed to different aspects of the game (e.g., action shots, team rivalries, fan interactions) to identify emotional triggers.

• **Biometric Feedback:**

Monitors physiological signals like heart rate and skin conductance while fans watch games to determine their emotional response to key moments (e.g., buzzer-beater shots, dramatic rivalries).

• **Eye-Tracking:**

Used to analyze where fans focus their attention during a game (e.g., star players, the ball in key moments) to understand their emotional connection to these moments.

**Example:**

Through these tools, the NBA found that fans had a stronger emotional reaction when watching personalized content, such as video highlights featuring their favorite players or teams. By using fan data to tailor content recommendations (e.g., exclusive behind-the-scenes footage, personalized highlight reels), the NBA significantly boosted fan engagement, particularly on its streaming platform.

**Outcome:**

Personalized experiences led to increased fan loyalty, higher

engagement on digital platforms, and greater satisfaction with NBA streaming services [5].

#### 4. Adidas' Sensory Marketing in Formula 1

**Case Overview:** Adidas collaborated with **Formula 1** in an innovative marketing campaign for their new line of sports shoes. The campaign aimed to evoke excitement, speed, and adrenaline—emotions closely tied to the fast-paced world of Formula 1 racing.

##### Neuromarketing Techniques:

- **Sensory Triggers:** Adidas used sound and visuals to capture the essence of speed. The sound of a revving F1 car engine and the quick flash of a car speeding by were key sensory triggers.

- **Biometric Response:** The brand used biometric sensors to understand the emotional responses of fans when exposed to the sensory elements in advertisements. Heart rate and galvanic skin response were analyzed to gauge emotional intensity.

- **EEG Analysis:** To determine which visuals had the greatest impact on viewers, EEG was used to measure how the brain responded to high-speed visuals and intense sounds.

**Outcome:** The combination of high-intensity visuals and sound created a strong emotional connection with the

audience. The targeted sensory experience increased fan engagement, leading to a spike in product sales during the campaign period.

**Outcome:** Adidas saw an increase in sales of their new line, and their partnership with Formula 1 was viewed as a success in tapping into the emotional core of the sport's fanbase.

#### 5. Tennis Australia and Virtual Reality (VR) Fan Engagement

**Case Overview:** Tennis Australia sought to enhance fan experiences at the **Australian Open** using **virtual reality (VR)**. With the help of neuromarketing insights, they created immersive VR experiences that allowed fans to feel like they were part of the action, whether they were watching from home or inside the stadium.

##### Neuromarketing Techniques:

- **Virtual Reality (VR):** The Australian Open used VR to immerse fans in a player's perspective during key moments of matches. Fans could virtually "sit" in the stands or walk around the court as if they were actually there.

- **Biometric Feedback:** The responses of VR users were monitored through biometric sensors to understand emotional engagement during virtual experiences.

• **Neuro-imagery:** Analyzed how fans' brain activity shifted as they experienced the matches in a virtual format, helping refine future VR experiences for maximum engagement.

**Outcome:** The immersive VR experience drew more fans into the event, even remotely, and increased digital engagement during the tournament. Fans felt more connected to the action, and the event saw higher engagement rates, particularly among younger audiences who were more likely to embrace VR technology.

**Outcome:** Tennis Australia successfully expanded its reach by offering a cutting-edge fan experience that combined neuromarketing with innovative VR technology.

6. Chicago Cubs and Sensory Stadium Experience

**Case Overview:** The **Chicago Cubs** used neuromarketing strategies to enhance the sensory experience within **Wrigley Field**, their historic stadium. Through the use of lighting, sound, and even scent, they aimed to create an atmosphere that would elicit strong emotional reactions from fans.

**Neuromarketing Techniques:**

• **Environmental Sensory Marketing:** Wrigley Field was outfitted with scents, sounds, and lighting that evoked

nostalgia for long-time Cubs fans. This included using crowd sounds, light effects, and scents like freshly cut grass to trigger positive memories.

• **Biometric Sensors:** Fans wore biometric sensors that helped to measure emotional responses to the sensory changes within the stadium. This data was analyzed to determine how different environmental factors influenced fan enjoyment.

• **Facial Recognition:** Used to measure facial expressions to understand how fans reacted to different in-stadium experiences, such as a victory or key moments in the game.

**Outcome:** The sensory-driven environment led to higher fan satisfaction and increased in-stadium merchandise sales. The Cubs were able to create an unforgettable atmosphere, strengthening fan loyalty and engagement.

These cases showcase how sports organizations and brands use neuromarketing techniques to tap into the emotions and behaviors of fans. Whether through personalized content, emotional branding, sensory experiences, or immersive technologies like VR, neuromarketing is helping shape more connected and engaged fan bases, ultimately leading to increased loyalty, enhanced fan

experiences, and higher revenue streams [2].

The following graphs illustrate key insights derived from the use of neuromarketing tools and strategies in understanding fan behavior in sports. These visual representations highlight the relationship between various marketing techniques and their impact on fan engagement, emotional responses, loyalty, and overall marketing effectiveness.

**1. Fan Engagement by Neuro-marketing Tools:** This graph shows how different neuromarketing tools, such as fMRI and biometric data, influence fan engagement levels, shedding light on the effectiveness of advanced technologies in sports marketing.

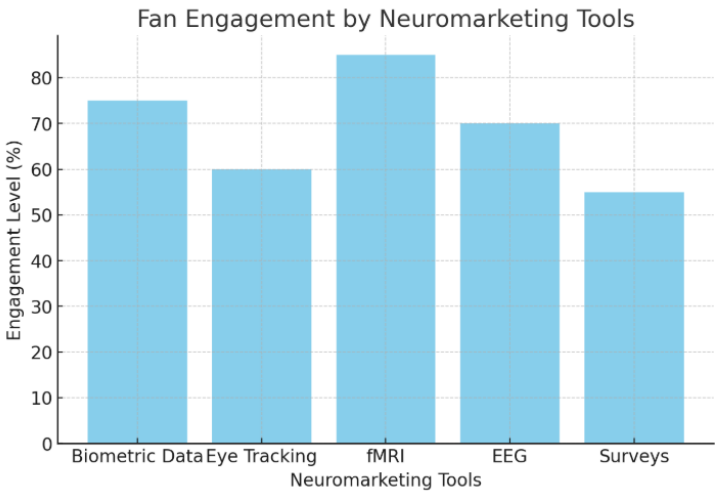
**2. Emotional Responses to Sports Ads:** By analyzing fans' emotional reactions to sports advertisements, this

graph identifies which emotions are most commonly evoked, helping marketers design more compelling campaigns.

**3. Fan Loyalty by Age Group:** This graph explores the variation in fan loyalty across different age demographics, providing insights into targeting and retaining various audience segments.

**4. Effectiveness of Marketing Strategies:** A comparative analysis of traditional and modern marketing strategies highlights the superiority of personalized and immersive approaches in driving engagement and fan loyalty.

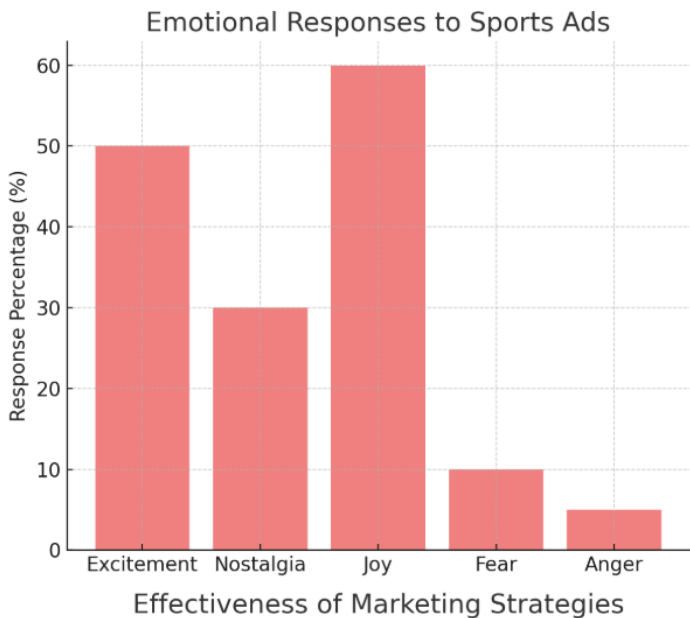
These graphs collectively offer a comprehensive view of the role neuromarketing plays in enhancing the connection between sports organizations and their fans, providing actionable insights for strategic decision-making.



Graph 1. Fan Engagement by Neuromarketing Tools

**Observation:** The engagement levels are highest for **fMRI** (85%), followed by **Biometric Data** (75%) and **EEG** (70%). **Eye Tracking** (60%) and **Surveys** (55%) have comparatively lower engagement levels.

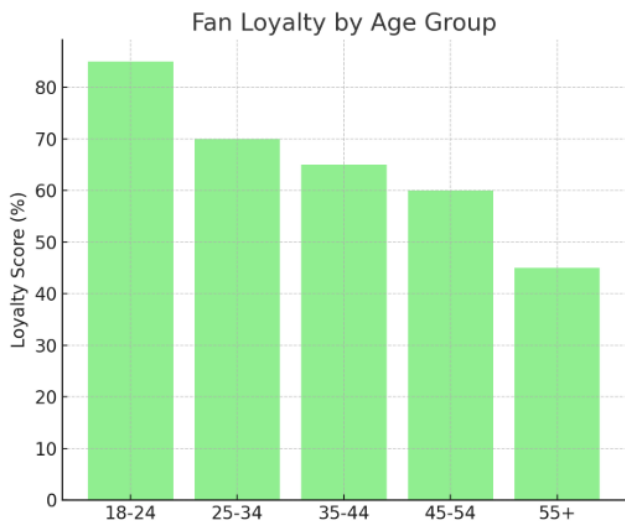
**Implication:** Tools like fMRI, which provide in-depth insights into neurological activity, are more effective at understanding and influencing fan behavior. Traditional tools like surveys lag due to their reliance on subjective responses, underscoring the need for more precise, neuroscience-based methodologies [3].



**Graph 2. Emotional Responses to Sports Ads**

**Observation:** Emotions like **Joy** (60%) and **Excitement** (50%) dominate fan responses to sports ads, while negative emotions like **Fear** (10%) and **Anger** (5%) are minimal. **Nostalgia** (30%) also plays a significant role.

**Implication:** Positive emotions, particularly joy and excitement, are key drivers of fan engagement. Ads that evoke these emotions are likely to be more impactful. Nostalgia also stands out as an effective tool for connecting with fans on a deeper emotional level [7].



Graph 3. Fan Loyalty by Age Group

**Observation:** Loyalty scores are highest among younger fans, particularly in the **18-24 age group** (85%), and decline steadily with age, dropping to 45% in the **55+ age group**.

**Implication:** Younger fans are more

emotionally invested and loyal, likely due to their higher levels of engagement with digital and social media content. This highlights the importance of targeting younger demographics with innovative and interactive marketing strategies [11].



Graph 4. Effectiveness of Marketing Strategies

**Observation:** **Personalized Ads** (90%) and **Sensory Marketing** (80%) show the highest effectiveness, followed by **Immersive Technologies** (75%). **Traditional Ads** (60%) are the least effective.

**Implication:** The data emphasizes the superiority of personalized and immersive marketing strategies in capturing fan attention and fostering emotional connections. Traditional methods, while still relevant, require integration with modern, neuromarketing-driven approaches to maximize their impact [8].

**Conclusion:** Neuromarketing represents a transformative approach in the sports industry, offering profound insights into fan behaviors and preferences by tapping into the subconscious mind. By leveraging cutting-edge technologies like EEG, fMRI, and eye-tracking, sports marketers can design strategies that evoke strong emotional responses, enhance fan experiences, and optimize sponsorship and advertising efforts. This fusion of neuroscience and marketing enables a deeper connection between fans and the sports they love, fostering loyalty and engagement that extends beyond traditional methods.

However, the potential of neuromarketing must be balanced with ethical considerations, ensuring transparency, respect for consumer autonomy, and

equitable access to these tools across organizations of varying sizes. As technology continues to advance, integrating innovations such as VR, AR, and AI will further revolutionize the way fans interact with sports, making experiences more personalized and immersive.

Ultimately, neuromarketing in sports is more than a marketing tool; it is a bridge to understanding the emotional and psychological connections that define fan loyalty. By responsibly embracing its potential, the sports industry can create memorable and meaningful interactions that strengthen its bond with audiences, ensuring sustained growth and fan satisfaction.

Neuromarketing has emerged as a transformative approach in sports marketing, enabling organizations to delve deeper into the psychological and emotional aspects of fan behavior. By leveraging advanced tools such as fMRI, EEG, biometric data, and eye-tracking, marketers can gather invaluable insights into how fans perceive, engage with, and react to sports events and marketing campaigns.

The findings indicate that:

• **Emotional resonance is critical:**

Positive emotions like joy and excitement play a significant role in shaping fan loyalty and engagement. Strategies that evoke

these emotions, along with nostalgia, are particularly effective.

• **Young fans are more loyal:** Younger demographics exhibit higher levels of loyalty, emphasizing the need for innovative, tech-savvy approaches to capture their attention and maintain their allegiance.

• **Personalized and immersive marketing dominates:** Modern techniques, including personalized ads and immersive technologies, outperform traditional

methods by creating tailored, engaging experiences for fans.

Overall, neuromarketing provides a data-driven pathway to enhance fan experiences, improve marketing efficiency, and foster deeper emotional connections between fans and sports organizations. As technology continues to advance, the integration of neuromarketing into sports will likely expand, offering even more precise and impactful ways to understand and influence fan behavior.

## REFERENCES

1. Calling for the Study of the Neuroscience of the Sports Fan Consumer, [https://www.researchgate.net/publication/349930542\\_Calling\\_for\\_the\\_Study\\_of\\_the\\_Neuroscience\\_of\\_the\\_Sports\\_Fan\\_Consumer](https://www.researchgate.net/publication/349930542_Calling_for_the_Study_of_the_Neuroscience_of_the_Sports_Fan_Consumer) [accessed by 15.11.2024]
2. Communicating the Value of Fan Identity in the Sport Industry, [https://journals.humankinetics.com/view/journals/ijsc/15/4/article-p293.xml?utm\\_source=chatgpt.com](https://journals.humankinetics.com/view/journals/ijsc/15/4/article-p293.xml?utm_source=chatgpt.com) [accessed by 15.11.2024]
3. Fans' Brain Responses to Social Responsibility of Famous Athletes, [https://icssjournal.ir/browse.php?a\\_id=1300&ftxt=0&sid=1&slc\\_lang=en&utm\\_source=chatgpt.com](https://icssjournal.ir/browse.php?a_id=1300&ftxt=0&sid=1&slc_lang=en&utm_source=chatgpt.com) [accessed by 15.11.2024]
4. Neural Correlates of Fanhood: The Role of Fan Identity and Team Brand, [https://pmc.ncbi.nlm.nih.gov/articles/PMC10800878/?utm\\_source=chatgpt.com](https://pmc.ncbi.nlm.nih.gov/articles/PMC10800878/?utm_source=chatgpt.com) [accessed by 01.12.2024]
5. Neuroscientists Use Brain Scans of Soccer Fans to Study Fanaticism, [https://www.sci.news/othersciences/neuroscience/soccer-fan-brain-12473.html?utm\\_source=chatgpt.com](https://www.sci.news/othersciences/neuroscience/soccer-fan-brain-12473.html?utm_source=chatgpt.com) [accessed by 10.11.2024]
6. Optimizing Sponsorship and Advertising, [https://muse.jhu.edu/pub/560/article/929608/pdf?utm\\_source=chatgpt.com](https://muse.jhu.edu/pub/560/article/929608/pdf?utm_source=chatgpt.com) [accessed by 15.11.2024]



7. The Effect of Sport Events Environments on Audience Attention to Advertising Using Neuromarketing Techniques, [https://aassjournal.com/article-1-815-en.pdf?utm\\_source=chatgpt.com](https://aassjournal.com/article-1-815-en.pdf?utm_source=chatgpt.com) [accessed by 17.11.2024]
8. The Effect of Sport Events Environments on Audience Attention to Advertising Using Brain Activity, [https://aassjournal.com/article-1-815-fa.html?utm\\_source=chatgpt.com](https://aassjournal.com/article-1-815-fa.html?utm_source=chatgpt.com) [accessed by 12.12.2024]
9. The Effects of Neuromarketing in Sports Businesses, [https://www.researchgate.net/publication/348444439\\_The\\_Effects\\_of\\_Neuromarketing\\_in\\_Sports\\_Businesses](https://www.researchgate.net/publication/348444439_The_Effects_of_Neuromarketing_in_Sports_Businesses) [accessed by 22.12.2024]
10. The Future of Neuromarketing in Sports, [https://www.popneuro.com/neuromarketing-blog/tag/sports?utm\\_source=chatgpt.com](https://www.popneuro.com/neuromarketing-blog/tag/sports?utm_source=chatgpt.com) [accessed by 02.12.2024]
11. The Neural Bases of Sport Fan Reactions to Teams: Evidence from a Functional Magnetic Resonance Imaging Study, [https://onlinelibrary.wiley.com/doi/10.1002/cb.2247?utm\\_source=chatgpt.com](https://onlinelibrary.wiley.com/doi/10.1002/cb.2247?utm_source=chatgpt.com) [accessed by 20.12.2024]
12. The Unique Neurology of the Sports Fan's Brain, [https://nautil.us/the-unique-neurology-of-the-sports-fans-brain-236053/?utm\\_source=chatgpt.com](https://nautil.us/the-unique-neurology-of-the-sports-fans-brain-236053/?utm_source=chatgpt.com) [accessed by 21.12.2024]

## ՆՇՅՐՈՄԱՐԿԵՏԻՆԳԸ ՍՊՈՐՏՈՒՄ. ԵՐԿՐՊԱԳՈՒՆԵՐԻ ՎԱՐՔԱԳԾԻ ԸՄՔՈՆՈՒՄԸ

Հ. Ռ. Երիցյան

Հայաստանի ֆիզիկական կուլտուրայի և սպորտի  
պետական ինստիտուտ, Երևան, Հայաստան

**Առանցքային բառեր:** Նեյրոմարկետինգ, երկրպագուների վարքագիծ, սպորտային մարկետինգ, EEG սպորտում, սպորտի երկրպագուների հոգեբանություն:

**Հետազոտության արդիականություն:** Նեյրոմարկետինգը ներկայումս դարձել է նորարարական միջոց՝ սպորտային ոլորտում երկրպագուների վարքագիծը հասկանալու և նրանց հետ ուժեղ կապ ստեղծելու համար: Ժամանակակից տեխնոլոգիաների արագ զարգացումը, ինչպես նաև սպորտի ոլորտում ավելի հստակ ռազմավարությունների պահանջարկը կարևորվում են, որպեսզի հասկանան սպառողների ենթագիտակցական արձագանքները: Այս մեթոդները ոչ միայն ապահովում են տվյալների վրա հիմնված արդյունքներ, այլև նպաստում են երկրպագուների լոյալության խորացմանը:

www.sportedu.am

**Հետազոտության նպատակն** է՝ ուսումնասիրել, թե ինչպես կարելի է նեյրոմարկետինգն օգտագործել սպորտային արդյունաբերության մեջ երկրպագուների վարքագիծն ավելի լավ հասկանալու և ազդելու համար, ինչպես նաև ուսումնասիրել նյարդաբանական արձագանքների և երկրպագուների ներգրավվածության միջև կապը:

**Հետազոտության մեթոդներ և կազմակերպում:** Հետազոտության ընթացքում կիրառվել են քանակական և որակական վերլուծության մեթոդներ, որոնք հնարավորություն են տվել հավաքագրելու երկրպագուների ենթագիտակցական արձագանքները տարբեր մարկետինգային ազդակների հանդեպ:

**Հետազոտության արդյունքների վերլուծությունը** ցույց է տալիս, որ նեյրոմարկետինգի գործիքները կարող են բացահայտել երկրպագուների հուզական և հոգեբանական արձագանքները՝ բարձրացնելով հովանավորչության և գովազդի արդյունավետությունը: Մասնավորապես, ուսումնասիրությունները փաստում են, որ ճիշտ ընտրված գունային լուծումները, լրգոների դիրքը և հաղորդագրության բովանդակությունը կարող են զգալիորեն ուժեղացնել երկրպագուների զգայական կապը:

Նեյրոմարկետինգի ուսումնասիրությունները սպորտի ոլորտում բացահայտում են երկրպագուների վարքագծի հիմնական գործոնները՝ օգտագործելով նորարարական գործիքներ և մեթոդներ: Հիմնական եզրակացությունները հետևյալն են.

1. **Էմոցիոնալ կապի կարևորությունը.** երկրպագուներն առավել շատ արձագանքում են դրական հույզերին, ինչպիսիք են՝ **ուրախությունը** և **հուզմունքը**:

2. **Նեյրոմարկետինգային գործիքների արդյունավետությունը.** առավել արդյունավետ են ճանաչվում ժամանակակից գործիքները, ինչպիսիք՝ են **fMRI**, **բիոմետրիկ տվյալները**, և **EEG**:

3. **Երկրպագուների հավատարմությունը՝ ըստ տարիքային խմբերի.** երիտասարդ երկրպագուները (18-24 տարեկան) ցուցաբերում են առավել բարձր հավատարմություն, որը տարիքին զուգահեռ նվազում է՝ ընդգծելով երիտասարդ սերունդների համար նորարարական ռազմավարությունների անհրաժեշտությունը:

4. **Մարկետինգային ռազմավարությունների արդյունավետությունը.** անհատականացված և սենսորային մարկետինգի ռազմավարությունները գերազանցում են ավանդական մոտեցումներին: Նորարարական տեխնոլոգիաների կիրառումը, օրինակ՝ **վիրտուալ իրականությունը**, նպաստում է երկրպագուների ներգրավվածության բարձրացմանը:

**Համառոտ եզրակացություն:** Նեյրոմարկետինգը դարձել է կարևոր գործիք սպորտային մարկետինգում՝ հնարավորություն տալով հասկանալու երկրպագուների ենթագիտակցական վարքագիծը և ստեղծելու ավելի խորացված ու անհատականացված երկրպագուական փորձառություններ: Ապագայում այս մեթոդների շարունակական զարգացումն ու կիրառումը կօգնեն սպորտային կազմակերպություններին առավել արդյունավետ կապ հաստատել իրենց երկրպագուների հետ՝ ապահովելով տևական ներգրավվածություն և լոյալություն:

## НЕЙРОМАРКЕТИНГ В СПОРТЕ: ПОНИМАНИЕ ПОВЕДЕНИЯ БОЛЕЛЬЩИКОВ

*Օ.Ք. Երիցյան*

Государственный институт физической культуры  
и спорта Армении, Ереван, Армения

### АННОТАЦИЯ

**Ключевые слова:** нейромаркетинг, поведение болельщиков, спортивный маркетинг, ЭЭГ в спорте, психология спортивных болельщиков.

**Актуальность исследования:** Нейромаркетинг в настоящее время стал инновационным способом понимания болельщиков в спортивной индустрии и установления связи с ними. Быстрое развитие современных технологий, а также потребность в более четких стратегиях в области спорта важны для понимания подсознательных реакций потребителей. Эти методы не только дают результаты, основанные на данных, но и способствуют повышению лояльности фанатов.

**Целью исследования** является изучение того, как можно использовать нейромаркетинг, чтобы лучше понять и повлиять на поведение болельщиков в спортивной индустрии, а также изучить взаимосвязь между неврологическими реакциями и вовлеченностью болельщиков.

**Методы и организация исследования:** В ходе исследования были использованы методы количественного и качественного анализа, которые позволили собрать подсознательные реакции болельщиков на различные маркетинговые стимулы.

**Анализ результатов исследования** показывает, что инструменты нейромаркетинга позволяют выявлять эмоциональные и психологические реакции болельщиков, повышая эффективность спонсорства и рекламы. В частности,

исследования показывают, что правильно выбранные цветовые решения, положение логотипов и содержание сообщения могут существенно усилить эмоциональную связь поклонников.

Нейромаркетинговые исследования в области спорта выявляют ключевые факторы поведения болельщиков с помощью инновационных инструментов и методов. Основные выводы заключаются в следующем:

1. Важность эмоциональной связи. фанаты больше реагируют на положительные эмоции, такие как радость и волнение.

2. Эффективность инструментов нейромаркетинга: современные инструменты, такие как фМРТ, биометрические данные и ЭЭГ, признаны наиболее эффективными.

3. Лояльность болельщиков по возрастным группам: наибольшую лояльность проявляют молодые болельщики (18-24 года). Лояльность снижается с возрастом, что подчеркивает необходимость инновационных стратегий для молодого поколения.

4. Эффективность маркетинговых стратегий: Персонализированные и сенсорные маркетинговые стратегии превосходят традиционные подходы. Использование инновационных технологий, таких как виртуальная реальность, помогает повысить вовлеченность болельщиков.

**Краткие выводы:** Нейромаркетинг стал важным инструментом спортивного маркетинга, позволяющим нам понять подсознательное поведение болельщиков и создавать более захватывающий и персонализированный опыт для болельщиков. В будущем дальнейшее развитие и применение этих методов поможет спортивным организациям более эффективно взаимодействовать со своими болельщиками, обеспечивая прочное взаимодействие и лояльность.

### ***Տեղեկություններ հեղինակի մասին***

Հովհաննես Ռուբենի Երիցյան՝ տ.գ.թ, դոցենտ, Սպորտի կառավարման և մարզական լրագրության ամբիոնի դասախոս, Երևան, Հայաստան, E.mail:[hovhannes.yeritsyan@sportedu.am](mailto:hovhannes.yeritsyan@sportedu.am) ORCID ID՝ 0009-0009-7529-3059

***Information about the author***

Hovhannes Ruben Yeritsyan, PhD in Econimcs, Associate Professor, Lecturer at the Chair of Sports Management and Sports Journalism,  
[hovhannes.yeritsyan@sportedu.am](mailto:hovhannes.yeritsyan@sportedu.am) ORCID ID: 0009-0009-7529-3059

Հոդվածն ընդունվել է 17.01.2025–ին:

Ուղարկվել է գրախոսման՝ 18.02.2025–ին:

Գրախոս՝ Կ.Գ.Թ., դոցենտ Տ. Պետրոսյան