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Fans' brain responses to social responsibility of famous athletes

Alireza Elahi[1*], Maryam Taheri Kia[2], Amir Homayoun Javadi[3], Hosein Akbari Yazdi[4]

1. Associate Professor of Sport Management, Department of Sport Management and Motor Behavior, Faculty of Physical Education and Sport Sciences, Kharazmi University, Tehran, Iran
2. PhD Student of Sport Management, Department of Sport Management and Motor Behavior, Faculty of Physical Education and Sport Sciences, Kharazmi University, Tehran, Iran
3. Assistant Professor of Cognitive Neuroscience, School of Psychology, University of Kent, Kent, United Kingdom
4. Assistant Professor of Sport Management, Department of Sport Management and Motor Behavior, Faculty of Physical Education and Sport Sciences, Kharazmi University, Tehran, Iran

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Corresponding author
Alireza Elahi, Associate Professor of Sport Management, Department of Sport Management and Motor Behavior, Faculty of Physical Education and Sport Sciences, Kharazmi University, Tehran, Iran

Email: Alirezaelahi@Yahoo.Com

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Abstract

Introduction: The present study aimed to evaluate fans' brain responses to elite athletes' social responsibility activities and reflect on their socially supportive behaviors.

Methods: The fans' brain responses to the social responsibility activities by an elite athlete were explored utilizing the neuromarketing approach and a quasi-experimental research design.

Results: The electroencephalographic (EEG) findings from a total number of 29 participants in the study revealed that the social responsibility of the elite athlete compared with an infamous counterpart could induce different brain responses in the fans. In addition, elite athlete's social responsibility activities could increase tendency for socially supportive behaviors by the participants (P=0.001). The same hypothesis in terms of dividing the participants into male and female groups was also significant only in the females (P=0.001).

Conclusion: The present results study can have implications for organizations and marketers seeking to use athletes in their social marketing and business advertising. Moreover, the findings related to gender differences demand serious attention from sports managers and marketers.

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Extended Abstract

Introduction

Activities related to social responsibility can affect decision-making by sports consumers (i.e., fans), who may respond to such activities through increased pro-social behaviors. Athlete social responsibility activities can be further linked to a marketing goal (e.g., branding) or their psychological and personal connections. By complementing social science and consumer psychology research approaches, neuroimaging can thus provide marketers with

information otherwise unobtainable via traditional marketing research methods (e.g., questionnaires, interviews, and focus groups). The primary purpose of this paper was to determine neural mechanism using electroencephalogram (EEG) underlying sport consumers' responses to athlete social responsibility activities and examine the impacts on their pro-social behaviors. This study would thus help gain a novel approach and better understand psychological processes that underlie the aspects of sports consumer behaviors and contribute to the better revealing of factors that may influence variables such as consumer behaviors.

Methods

Social and control messages from famous and fictitious athletes were accordingly presented to a total number of 29 student participants while their EGG data were recorded. The study consisted of a presentation of 120 trials. The order of the trials was randomized. Sixty of the trials began with an image of one of the two individuals (Famous/Fictitious), and the rest began with a cue indicating the message type (Social/Control). EEG of the participants was recorded during the task. Participants' task was to carefully look at the stimuli and listen to the messages. To ensure that participants paid attention to the stimuli, after every 12 trials, they were given a sentence to judge whether it was one of the presented messages or not. To further encourage the participants to pay attention to the stimuli, they were rewarded monetarily based on their performance on these questions.

The EEG data were then analyzed using the SPM v12 software. The analysis was conducted in two stages, (1) absolute brain activity, and (2) correlation of brain activity with pro-social behaviors in fans, as measured by the pro-social questionnaire.

Results

The results revealed the higher activity of the inferior frontal gyrus (IFG). The left-IFG was also more active than whenever the message was related to the famous athlete. In addition, bilateral-IFG was more active in response to the presentation of the social messages. These were also indications that the participants processed the messages by the famous person and social messages stronger than that of the fictitious athlete or control ones. Therefore, it could be argued that the participants treated the athletes and the messages differently and, in particular, paid much attention to the famous athlete and social messages.

Similar to IFG, while SMG is part of the primary somatosensory cortex, it is also involved in language processing. SMG and IFG are also engaged in emotion and language networks. Bilateral-SMG was thus strongly activated in response to the messages by the famous athlete. This was another indication that the participants processed the messages associated with the famous athlete stronger than that of the fictitious one. The higher activation of both IFG and SMG in the socially relevant message was also an indication of the in-depth processing of the social messages. Considering that the participants were unaware of the purpose of the study, this higher activation was the evidence of intrinsic attention to socially relevant messages. Therefore, important messages could be framed in social contexts to have more effectiveness.

Notably, the study results demonstrated a strong correlation between the activation of the posterior cingulate cortex (PCC) and the consumers' pro-social behaviors towards the famous athlete ($r=0.697$, $P<0.001$). Furthermore, the findings provided evidence that such impacts were just pronounced for female participants than males ($P=0.001$). Besides, the neuroscience findings suggested that athlete social responsibility activities engage emotional and language processing brain networks stronger, provide an effective strategy to influence consumers' pro-social behaviors, and forward practical implications for athletes and social scientists. Overall, these findings

demonstrated that the promotion of athletes involved in socially responsible initiatives could produce generous benefits for society, alongside personal branding profits for athletes themselves.

Conclusion

Consumer neuroscience and neuromarketing research have started to study the effectiveness of marketing stimuli in influencing consumer responses towards brands. Such research has long been investigated through traditional market research methods. The current paper has shown that marketers, social scientists, and managers can directly investigate and measure consumers' underlying intentions via neuromarketing methods. To authors' knowledge, the current study provides an extension to the literature of neuroscience study in the domain of sports social responsibility and in testing the relationship between sports consumers' brain activity and their behavioral responses. The current research findings outline that athletes engaging in social responsibility activities can affect sport fans' behavioral intentions, such as pro-social behaviors. Athletes are increasingly being managed as brands, and their actions have an impact on fans' attitudes and behavioral intentions. Therefore, based on current neural results, athletes can use social responsibility activities as a solid variable to manage their brands and how consumers perceive their brand image. Further, the present study demonstrated how these initiatives positively influence consumer behavior with respect to their pro-social behaviors. Collectively the current study has a practical, theoretical, and methodological contribution to marketing literature, social science, and sports marketing literature.

To the knowledge of the managers and marketers, the present study findings suggest that social responsibility activities are a valuable strategy for athletes to increase sports consumers' behavioral intentions such as pro-social behaviors. More importantly, this study's findings suggest that female consumers perceive athlete social responsibility activities more favorably. Therefore, athletes should implement social responsibility activities plans that could effectively link cause activities with sports consumers' pro-social behaviors. For instance, long-term partnerships with local businesses for sourcing and more comprehensive society development through locally developed school-based health programs. This may be particularly effective in contexts where either the athlete is female or where a league or a team has a predominantly female consumer base.

Limitations bound this research that future research should aim to address. The current study identified involved brain areas using 3D source reconstruction of the EEG data. While 32 EEG electrodes can provide reasonably accurate data for this procedure, it would be informative to run similar studies using fMRI to provide a better spatial resolution and investigate deeper brain areas in further detail. Furthermore, future studies should seek to test the impact of more variables on moderating the impact of athlete social responsibility on sports consumer responses. This study was limited to assessing the impacts of gender as a binary approach. Future investigations along these lines will broaden our knowledge to identify more demographical variables like income, socioeconomic status, years of education, and age.

Ethical Considerations

Compliance with ethical guidelines

The conditions of this study were designed in such a way that there was no physical or mental harm to the participants and by observing ethical principles such as obtaining informed written consent, respecting the principle of confidentiality of participants, providing sufficient information about how to research and their freedom to quit from the research process was performed. Also, the code of ethics for this research was received from the National

Committee for Ethics in Biomedical Research (IR.IUMS.REC.1397.181).

Authors' contributions

This paper has been written equally by all authors with the same contribution.

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Conflict of interest

The authors declared no conflict of interest.