

Realization of environmentally friendly behaviours in sports from the point of view of managers and organizers

Realización de comportamientos respetuosos con el medio ambiente en el deporte desde el punto de vista de directivos y organizadores

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Abstract

Introduction: The purpose of this study was to realize environmentally friendly behaviors in sports from the point of view of managers and organizers of sports events. **Methodology:** In order to collect data, a 4-part researcher-made questionnaire including 40 questions was used. The face and content validity was confirmed by a survey of related faculty members, and its reliability was reported using Cronbach's alpha of 0.83. The statistical sample of the research consists of managers and organizers of sports events in ten provinces of the country. After distributing the questionnaires, finally 254 questionnaires were returned. **Results:** Data analysis was done using Amos and SPSS-19 software. Pearson's correlation coefficient and path analysis were used to test hypotheses, and bootstrap method was used to test indirect relationships (mediation). The proposed model was also tested to investigate the relationships between the factors. The results showed that the three factors of environmental awareness, perception of environmental effects, and the intention to support green sports events affect the actual environmental friendly behavior. Also, the results showed that the variable that intends to support green sports events plays a role as a mediating variable and the extent of the impact of environmental awareness and perception on the actual environmentally friendly behavior is caused by the intention to support green sports events. **Conclusions:** Based on the proposed research model, the environmentally friendly behaviors of sports event organizers and managers and their intention to protect green sports events are largely influenced by their knowledge and understanding of environmental issues. It seems that understanding the basic factors affecting people's actual and supportive behaviors towards green sports is necessary to promote environmental behavior.

Key words: sports managers, perception of environmental effects, sports events.

Resumen

Introducción: El objetivo de este estudio fue conocer los comportamientos respetuosos con el medio ambiente en el deporte desde el punto de vista de los gestores y organizadores de eventos deportivos. **Metodología:** Para la recolección de datos se utilizó un cuestionario elaborado por investigadores en 4 partes que incluía 40 preguntas. La validez aparente y de contenido se confirmó mediante una encuesta a profesores relacionados, y su fiabilidad se informó utilizando el alfa de Cronbach de 0,83. La muestra estadística de la investigación está formada por gerentes y organizadores de eventos deportivos en diez provincias del país. Después de distribuir los cuestionarios, finalmente se devolvieron 254 cuestionarios. **Resultados:** El análisis de datos se realizó utilizando el software Amos y SPSS-19. Se utilizaron el coeficiente de correlación de Pearson y el análisis de ruta para probar las hipótesis, y el método bootstrap se utilizó para probar las relaciones indirectas (mediación). El modelo propuesto también se probó para investigar las relaciones entre los factores. Los resultados mostraron que los tres factores de conciencia ambiental, percepción de los efectos ambientales y la intención de apoyar eventos deportivos ecológicos afectan el comportamiento ambientalmente amigable real. Además, los resultados mostraron que la variable que tiene la intención de apoyar eventos deportivos ecológicos juega un papel como variable mediadora y el alcance del impacto de la conciencia y la percepción ambientales en el comportamiento ambientalmente amigable real es causado por la intención de apoyar eventos deportivos ecológicos. **Conclusiones:** Con base en el modelo de investigación propuesto, los comportamientos respetuosos con el medio ambiente de los organizadores y gerentes de eventos deportivos y su intención de proteger los eventos deportivos ecológicos están influenciados en gran medida por su conocimiento y comprensión de las cuestiones ambientales. Parece que comprender los conceptos básicos factores que afectan los comportamientos reales y de apoyo de las personas hacia los deportes ecológicos es necesario promover comportamiento ambiental. Parece que es necesario comprender los factores básicos que afectan el comportamiento real y de apoyo de las personas hacia los deportes ecológicos para promover el comportamiento ambiental.

Palabras clave: directivos deportivos, percepción de efectos ambientales, eventos deportivos.

INTRODUCTION

The environment consists of everything that surrounds an organism and includes natural elements and is constructed by human as well. Like all other animal species that make up the ecosystem of the universe, humans always interact with their environment and partly change it. However, human being is the only creature that can have a significant impact on the ecosystem. Since ancient times, fire has affected animals and plants, farmers have cut down forest trees, and have domesticated certain animal species, and citizens have cultivated the first arid land. Earth is experiencing a big change today. Population's rapid growth, combined with the development of industrial societies dependent on fossil- fuels, have greatly accelerated environmental demolition. Harmful human effects on the environment, such as climate change, can not only be prevented by changing policies, laws and regulations by governments and large companies, but also by changing the lifestyle by all individuals. Saying "I'm just one person, how much change can a person make?", or "why do not other people change their lifestyle?", or "why does the government do nothing?" should change. Though small changes in the lifestyle of a person may be small, but when these changes are made at the regional or national level, their cumulative effects can make a big change.

Sport, like many other human activities, may have beneficial or harmful effects on the environment. Sport affects the environment in different ways: water pollution, noise pollution, optical pollution, consumption of renewable resources, consumption of natural resources, greenhouse gas emissions, ozone layer destruction, soil pollution, soil erosion, spilling garbage in

the environment, consumption of paper and waste production from catering services (Janssen et al., 2014). It has been accepted that sport events can have many effects on the environment (Bunds et al., 2018). Sport and the environment are closely tied. The environment was added to the Olympic movement in 1996 as the third pillar along with sport and culture (Wicker, 2019). The concept of Green Games was eventually announced by the International Olympic Committee (IOC) as a mandate and was considered a part of the Olympic Games since 2000 (Johnson & Ali, 2018). In the 2000 Sydney Olympics, dubbed Green Games, it was attempted to address environmental issues in all aspects of the game, including design, construction, transportation, provision of catering, and residuum management (Nazari & Kiani, 2022).

Although sports organizations are not usually considered as the organizations which pollute environment, the performance of sports teams, spectators, managers and sport equipment manufacturers may have different effects on the environment. Some researchers have focused on how event organizers affect environmental conservation and have been focusing on issues such as reducing consumption, reuse, and recycling (Mallen et al., 2010). Sports organizations today are developing strategies and campaigns to increase sustainable behaviors among sports enthusiasts (Kellison & Kim, 2014). Although the decision to involve in sport activities does not have much effect on the environment in the first place, its impact will be considerable when there are a lot of athletes practicing, competing, and traveling to participate in tournaments or providing sports equipment, and may have many consequences such as the production of carbon dioxide, waste generation, air pollution, etc. (Kellison & Hong, 2015).

The type of individuals behaviors can have a significant impact on the environment. Responsive behavior to the environment has a multidimensional structure and many factors such as environmental awareness, attitude, commitment, environmental belief, ethics, feelings, knowledge, global values, ecological world views, personality and social context affect it (Cayolla et al., 2022; McCullough et al., 2020; Wall-Tweedie & Nguyen, 2018). Environmental awareness is recognized as the first key component of understanding the causes and effects of environmental issues (Casper et al., 2020). Environmental awareness is a comprehensive term that recognizes the destructive effects of human actions (and current technological and social developments) on the natural environment.

Environmental awareness is often synonymous with "environmental concern." Many studies have shown that environmental awareness/concern is a prerequisite for environment-friendly measures. When a person has enough awareness/concern, the next step is to decide to turn it into behavior, this decision requires support and action. Behavioral intention has a significant relationship with environment-friendly behaviors (Samuel et al., 2013). People who decide to help in protecting the environment, must realize that their actions can make a difference. McCullough et al. (2016) concluded in their research that those who purchase environment-friendly products believe that recycling is important and they adhere to other responsible behaviors toward environment as well. On the other hand, decision-makers can play a more effective role in persuading others to exhibit environment-friendly behaviors.

The commitment of managers to environmental measures is considered one of the main indicators driving others into environmental protection, and this can affect their environmental responses (Yol Lee and Rhee, 2007). Some studies have shown that the commitment of managers to environmental measures is a prerequisite for a successful environmental strategy (Banerjee, 2001). by examining the relationship between the commitment of managers and some external and internal forces and its impact on environmental strategies of companies in different businesses, Banerjee et al. (2003) found that the commitment of top managers had a positive effect on both orientation and environmental strategy. Bohdanowicz's (2005) study by examining the environmental attitudes of small European hotels also showed that managers who have more environmental concerns have a greater moral motivation for environmental protection. In Iran, some researches have been conducted on sport events that have focused more on social, economic, and political aspects of events, and little research has been devoted to sport and the environment.

Among these few studies, less attention has been paid to the effect of the level of awareness, perception and behavior of individuals involved in sport on the environment. Considering the increasing importance of the environmental category in recent years around the world, and given the extensive social effects of sport on the culture and the lack of scientific research in this field in the country, the need for further research on the environment and sport is evident. The present study intends to study the relationship between environmental awareness and perception and the intention to support green sport events with actual environment-friendly behavior in the country, so that it can provide a context for more attention to environmental issues in sport.

METHODOLOGY

The present study is a descriptive survey-based study and has been conducted via field research method. By studying theoretical fundamentals of the research and interviewing the experts familiar with the two categories of sport and environment, a researcher-made questionnaire containing 40 questions and consisting of four factors of environmental awareness (8 question), environmental effects perception (15 Question), intention to support (8 questions), actual behavior (9 questions) was prepared. The face and content validity of the questionnaire were confirmed by a survey of the faculty members related to the research topic. In order to determine reliability, the questionnaire was distributed among 13 managers. Finally, the reliability of the questionnaire was reported as 0.83 by using Cronbach's alpha. The statistical population of the study consisted of managers and organizers of sports events in the country.

Considering the extent of the country and impossibility of using random sampling method for distributing the questionnaire, as well as the financial and temporal constraints of the researchers, the samples were selected based on familiarity and ease of access to some provinces. Accordingly, questionnaires were distributed in Tehran, Alborz, Isfahan, East Azarbaijan, West Azarbaijan, Khuzestan, Khorasan Razavi, Kurdistan, Lorestan and Kermanshah. Finally, 254 questionnaires were returned. Descriptive statistics (frequency, percentage, mean and standard deviation) and inferential statistics were used to describe the research data. Pearson's correlation coefficient and path analysis were used to test the hypotheses and analyze data. Statistical calculations were performed using AMOS and SPSS software (version 19).

RESULTS

As outlined in Table 1, among the 254 returned questionnaires, 182 questionnaires were for men and 72 questionnaires were for women.

Table 1. Descriptive Findings of the Research

Demographic features	Scale	frequency	percentage
Sex	Female	72	28.3
	Male	182	71.7
Marital status	Single	100	39.4
	Married	154	60.6
Education level	Diploma and associate degree	59	23.2
	Bachelor's degree	117	46.1
	Master's degree	59	23.2
	PhD	18	7.1

Table 2. Mean and standard deviations of the variables under study

Variable	Minimum	Maximum	Mean	Standard deviation
Environmental awareness	0	8	3.55	1.61
Perception of environmental impacts	22	75	52.13	9.86
Actual environment-friendly behavior	12	18	16.39	1.60
Intent to support green sports events	10	16	14.53	1.45

As it is shown in Table 2, the environmental awareness of the sample under study is in a range of 0 to 8, and the mean of the total sample is 3.55 with a standard deviation of 1.61, which, given the possibility of obtaining a maximum score of 8, These results indicate a low level of environmental awareness in the sample under study. Also, the variable mean of perceived level of environmental impacts in the sample under study was 52.13 with a standard deviation of 9.86. Also, the mean of actual environment- friendly behavior was 16.39 with a standard deviation of 1.60 and the mean of intention to support the green sport events was 14.53 with a standard deviation of 1.45.

In order to determine the relationship between the environmental awareness level and the level of perception of environmental impacts with the intention of supporting green sport events, the statistical analysis results are presented in Table 3.

Table 3. Results of Pearson correlation coefficient test to investigate the relationship between environmental awareness level and perception level of environmental impacts with the intention to support green sport events

Predictive variable	Correlation coefficient with intention to support	Significant level
Environmental awareness	0.15	0.01
Perception of environmental impacts	0.39	0.001

The results of statistical analysis of the relationship between the environmental awareness level and the level of perception of environmental impacts with actual behavior are presented in Table 4.

Table 4. Pearson Correlation Coefficient test to investigate the relationship between environmental awareness level and perception level of environmental impacts with actual environment-friendly behavior.

Level of significance	Correlation coefficient with actual behavior	Predictive variable
0.02	0.14	Environmental awareness
0.001	0.34	Perception of environmental impacts

Structural equation methodology was used to test the proposed pattern of relationship between environmental awareness level and perception level of environmental impacts through mediation of intention to support green sport events and environment-friendly behavior (the proposed research model has a total of four variables where two variables serve as an independent variable, one as an associated variable and one as the mediator variable).

The Bootstrap method was used to test the indirect effects (intermediate). Before using the results, the fitness of the model should be approved. In order to determine the fit adequacy of the proposed model, fitness indexes of Chi-square, ratio of chi square on freedom degree (χ^2 / df), Goodness-of-fit index, normed fit index, the comparative fit index, the Tucker-Lewis index and the root mean square error of approximation were used, and the values of these indexes are presented in Table 5.

Table 5: Fit of the proposed pattern based on fitness indicators

Fit indexes	X2	X2/DF	AGFI	GFI	RMSEA	NFI	TLI	CFI
Allowed limit		Criteria on less than 3	Criteria over 90	Criteria over 90	Criteria less than or equal to 0.08	Criteria over 90	Criteria over 90	Criteria over 90
The values obtained								

The output results of the AMOS software about the values of the model's general fit indexes show the validity of the proposed conceptual model. In this research, after designing the model based on the data and estimating the model parameters, the hypotheses were tested. Figure 1 shows the suggested pattern of the current research along with the standard coefficients of the paths.

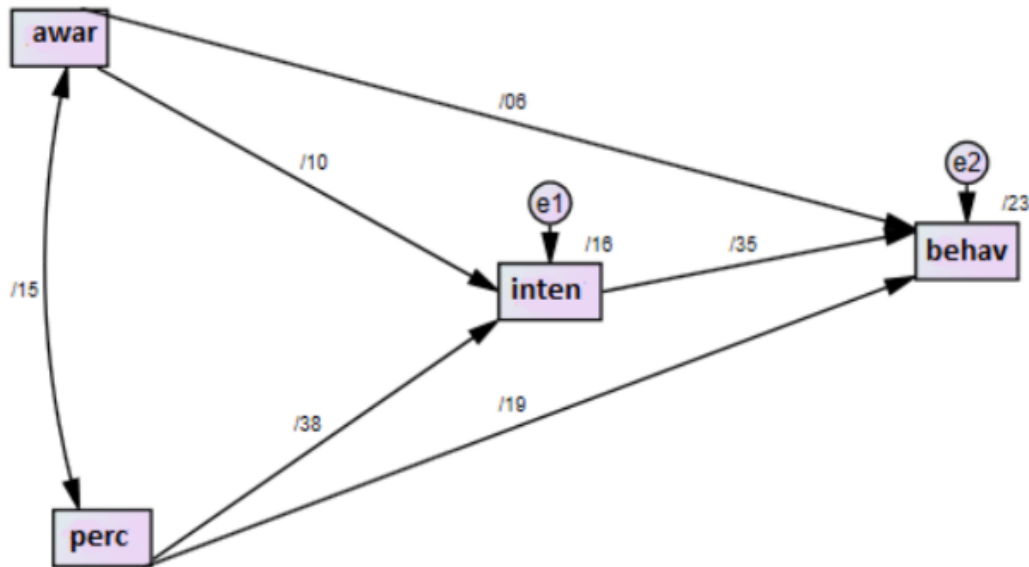


Figure 1: path analysis of the direct and indirect effects of independent variables on the real environment-friendly behavior.

In Figure 1, the relationship between variables is presented in the standard estimation mode. In the model, based on the values of R² obtained in the model, 16.3% of the dependent variable's changes (intention to support green sport events) are derived from the awareness and perception variables. Also, the three exogenous variables of the conceptual model have been able to predict 23 percent of the total variation in the actual environment-friendly behavior variable.

The results of the direct and indirect impacts of the environmental awareness effectiveness pattern and perception of the environmental impact on the actual environment-friendly behavior are presented in Table 6, considering the role of mediator in the intention to support green sport events.

Table 6. Estimation of direct and indirect effects of the awareness and perception variables on actual behavior with the mediating role of support intention

Hypothesis	Relationship between research variables	Direct impact	Indirect impact	P-Value	results
H1	Awareness→ intention to support	0.100	-	0.087	rejected
H2	Perception→ intention to support	0.377	-	<0.001	accepted
H3	Awareness→ actual behavior	0.057	-	0.309	rejected
H4	Perception→ actual behavior	0.194	-	<0.001	accepted
H5	Perception→ intention to help—actual behavior	-	0.133	0.060	accepted
H6	Awareness-intention to help→ actual behavior	-	0.035	%060	rejected

As the information in Table 6 shows, in reviewing direct effect, the perceived environmental impacts has a positive and direct effect on the intention to support green sport events. Also, the coefficients of direct effect of perception on environmental impacts have positive and direct effect on environment- friendly behavior. Therefore, the respective hypothesis is accepted at the level of 0.05 and it can be concluded that presence of significant direct relationships is due to the direct effect between the mentioned variables. In two other path coefficients, considering the observed level of significance (H1 and H3), the hypothesis of the existence of the relationship between variables is rejected.

An underlying assumption of the present proposed model was existence of a non-direct path that was investigated using the Bootstrap method. As shown in Table 6, the results of Bootstrap for the indirect path of environmental awareness and actual environment-friendly behavior with mediating to support the green sport events are not significant at the level of 0.05 ($p = 0.06$), which indicates a lack of the relationship between the independent and dependent variables and mediator variable mediating, so the hypothesis is rejected. Concerning the indirect path of perception of environmental influences and actual environment-friendly behavior by mediating the intention to support green sport events, Bootstrap results show a significant level below that of 0.001, indicating the significance of this indirect path in the 5% level of significance and therefore the hypothesis is accepted. This means that the perception of environmental impacts indirectly and through the intention to support green sport events influences the actual environment-friendly environment. Therefore, in the relationship between perception of environmental influences and the actual environment-friendly behavior, the variable intended to

support the green sport events serves as a mediator variable, and it can be inferred that the extent of the impact of environmental perception on the actual environment-friendly behavior is due to the intention to support green sports events.

DISCUSSION

The results of the research showed a significant relationship between the environmental awareness and the intention to support green sport events. MacIntosh et al. (2015) showed in their research that customers support environmental change if they are aware and well understand that this is a natural process. Given the fact that attitude emerges after conscious, changing attitudes must provide the opportunity and the right behavior by providing a context for raising awareness. Therefore, determining the level of awareness and measuring the attitudes of individuals is the first step in developing educational programs. The results of this study showed that environmental awareness can be effective in forming the intention to protect environmental issues in sport events.

The results of the research showed a significant relationship between environmental awareness and actual environment-friendly behavior. Many studies have emphasized the importance of environmental awareness in the field of sport (Triantafyllidis, 2018). The emphasis on raising environmental awareness and training people in the field of sport is evident in such programs as the FIFA's Green Goal and the Olympics Green Games Programs. Environmental awareness and perception of environmental issues are effective variables on environmental behavior. Increasing environmental awareness can reduce environmental issues and leads to responsible behaviors against the environment. However, the point to consider in terms of awareness and perception of environmental impacts is that knowing how the human behavior influences the ecosystem does not necessarily directly lead to a change in behavior, although it is assumed that awareness and perception of environmental impacts encourage individuals to conduct environment-friendly behaviors.

The results of the research showed a significant relationship between the level of perception of environmental impacts and the intention to support green sport events.

The results of the research also showed a significant relationship between the level of perception of environmental impacts and the environment-friendly behavior in sports events. The results are consistent with the results of the MacIntosh et al. 2013, which have found that customers expect sports facility providers to be responsible toward the environment. Casper et al. (2020) also reported that sports organizations use green games as a mechanism for engaging audiences and training sustainable behaviors in sport events.

The proposed model suggests that the level of environmental awareness, the level of perception of environmental influences and the intention to support green sport events can all predict 23% of the actual environment-friendly behavior. This is while the environmental awareness level and perception level of the environmental impacts can both predict 12% of actual behavioral changes, that is, without the presence of a mediating variable "intention to support green sport events," the ability to predict two other variables is less.

On the other hand, the results showed that in the relationship between the level of environmental awareness and the actual environment-friendly behavior, the mediator intending to support green sport events does not play the role of mediator. But there is a relationship between the level of perception of environmental impacts and the environment-friendly behavior through the intention to support green sport events. That is, the mediating role of "the intention to support green sport events" is confirmed in the relationship between perceived environmental impacts and the environment-friendly behavior. This means that the high level of perception of the environmental impact of time leads to an actual environment-friendly behavior that aims to support high green sports events.

Based on the proposed model of research, environment-friendly behaviors of organizers and managers of sport events and their intention to support green sport events are largely influenced by their awareness and perception of environmental issues. In other words,

environmental awareness on the one hand, and environmental perception on the other hand, affect the environment-friendly behaviors of organizers and managers. Environmental conservation requires changing the attitudes and behaviors of individuals, and fortunately the green attitude can be contagious (Sartore-Baldwin & McCullough, 2018). Grant (2008) in his research showed that people's tendency to protect the environment is increasing, and factors such as distributing the news of environmental pollution, global warming, waste disposal problems, ozone depletion, food contamination and the result of increasing community knowledge of environmental issues has increased concern and sensitivity in the population, and makes it necessary to continuously evaluate products based on green standards.

Finally, due to the role of each of the variables studied in explaining the environment-friendly behaviors of sport event's organizers and managers, the importance of understanding the environmental impacts and the intention to support green events in forming environmental behaviors is more evident. As mentioned earlier, an important variable such as the understanding environmental impacts in the emergence of environment-friendly behavior has a sustained relevance with the intention of supporting green sport events.

In order to preserve the environment in the sports industry, it is necessary that all managers, organizers and stakeholders' understanding of the environmental issues increase and they are committed to take action in this field. Therefore, in policy-making and major planning related to sport events, it is necessary to seriously promote the perception of environmental impacts and support the green holding of sport events along with other variables that affect environmental behaviors.

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