



The environmental awareness and behaviour of professional football supporters: an empirical survey

*conducted within the framework of the TACKLE project
co-funded by the European Commission under the LIFE Programme*



FEDERAZIONE ITALIANA GIUOCO CALCIO



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Table of contents

1	Introduction.....	4
2	Methodology and sample	7
3	Measuring the environmental awareness of supporters	11
3.1	Environmental attitude and values.....	11
3.2	Environmental behaviour in daily life	13
3.3	Perceived level of knowledge of environmental sustainability	14
4	Perceptions and expectations of fans on the environmental management of football	19
4.1	The importance of environmental management in football.....	19
4.2	The role of different organisations in promoting initiatives of environmental protection in Football.....	21
4.3	The role of different actors operating in the world of Football in raising environmental awareness.....	23
4.4	The commitment that the world of Football should devote to different environmental issues.....	24
4.5	Fans' relationship with their favourite football club and their perception of how it takes care of the environment.....	27
5	The role and pro-environmental attitude of fans during football events.....	29
5.1	Willingness to adopt pro-environmental behaviours during a football match	29
5.2	Fans' perception of their contribution to improving the sustainability of football events	32
6	Football supporters' mobility.....	35
6.1	Mobility survey and sample characteristics.....	35
6.2	Mobility patterns of football supporters	38
6.3	Perceptions about bicycles.....	41
6.4	Barriers of bicycling and potential solutions	42
7	Conclusions.....	44

1 Introduction

Football matches and international football tournaments, could generate relevant environmental impacts in terms of waste generation, mobility, energy and water consumption. For example, a football match could generate 0.8 kg of waste per spectator, which corresponds to 4.2 tons of waste per match. A stadium could consume as much as 8,000,000 kWh of electricity in 1 year and use 100,000 m³ of water in the same period ¹.

At the same time, football plays an increasingly important role in promoting and supporting environmental sustainability. Together with the goal of reducing the environmental footprint of football activities, it is essential to exploit the popularity of football as a means of increasing general environmental awareness through inspiring, unifying and engaging millions of people in adopting behaviours and actions for the protection of the environment.

In this regard, the present report describes in detail the results of an original survey on the level of information and awareness of football supporters in relation to environmental management topics.

The survey was conducted within the framework of the LIFE TACKLE (Teaming-Up For A Conscious Kick For The Legacy Of Environment) project, and aims at promoting actions for improving the environmental management of football events and the environmental awareness of fans and spectators. The project is co-founded by the European Commission and coordinated by the Institute of Management of Sant'Anna School of Advanced Studies (Italy), in partnership with three European National Football Associations (FIGC in Italy, SvFF in Sweden, FrF in Romania), AMIU (Italy), LIPOR (Portugal), ACR+ (Belgium) and Euractiv (The Netherlands); it is supported by the Liechtenstein Football Association (LFV) and endorsed by UEFA. It involves 12 European stadiums, the s.c. "pilot stadiums":

1. Olympic Stadium (Rome, Italy)
2. Luigi Ferraris - Marassi (Genova, Italy)
3. Paolo Mazza (Ferrara, Italy)
4. Renzo Barbera (Palermo, Italy)
5. National Arena (Bucarest, Romania)
6. Voluntari Arena (Voluntari, Romania)
7. Friends Arena (Solna, Sweden)

¹ Source: Life Tackle project.

8. Tele 2 (Stockholm, Sweden)
9. Estadio do Dragao (Porto, Portugal)
10. Benito Villamarin (Sevilla, Spain)
11. Roi Baudoin (Brussels, Belgium)
12. Aviva Stadium (Dublin, Ireland)

These stadiums will implement several pilot actions related to the themes of supporters' mobility, energy management, water management, waste management, green public procurement, and governance/environmental performance of stadiums.

In addition, the project includes actions for the promotion of environmental awareness. In this regard, one of the activities aims at assessing the environmental awareness/behaviour of football fans. The information was collected through specific questionnaires filled in face-to-face with supporters and spectators during professional football matches that took place in some of the pilot stadiums involved in the project (more details can be found in Chapters 2 and 7). The results aim to highlight the level of environmental awareness/behaviour of supporters.

Based on these results, the project will then develop and implement communication campaigns to disseminate environmental and waste prevention messages to football supporters with the aim of raising their environmental awareness and promoting more environmentally-friendly behaviours. The awareness tools used in the communication campaigns include messages on social media as well as other advanced communication techniques such as: informative panels and banners placed in strategic places in stadiums, video-interviews with football players as testimonials and vox-pops videos with supporters projected on big screens of stadiums and published online, etc.

In addition to this introductory section, the present report is structured as follows:

- Chapter 2 presents the methodological approach and describes the sample's characteristics.
- Chapter 3 focuses on the environmental awareness of football supporters, by investigating their values and consciousness with regard to the environment, their environmental behaviour in daily life, and their perceived level of knowledge of aspects related to environmental sustainability.
- Chapter 4 investigates the perceptions and expectations of supporters regarding environmental management of Football, including: supporters' perception of the importance of promoting environmentally friendly football matches; the role played by different organisations and actors operating in the world of Football in promoting initiatives of environmental protection and raising environmental awareness. It also investigates supporters' expectation on the commitment that the world of Football should

devote to different environmental issues. Finally, it explores fans' relationship with their favourite football club and their perception of how their Team takes care of the environment.

- Chapter 5 focuses on the role and pro-environmental attitude of fans during football events, including their willingness to adopt environmentally friendly behaviours during a football match and the perception of their personal contribution to improving the sustainability of football matches.
- Chapter 6 presents the results of a separate survey conducted on a smaller sample of football supporters and specifically focused on their mobility patterns, in order to identify which measures can be adopted and developed to support eco-friendlier mobility.
- Chapter 7 summarizes the findings of the two surveys and provides conclusive remarks.

2 Methodology and sample

The data presented in this report was collected between May 2019 and January 2020, by means of a questionnaire survey developed by the researchers of the Institute of Management of Sant'Anna School of Advanced Studies within the framework of the LIFE TACKLE project and with the support of project partners. The questionnaire consisted in 65 multiple-choice questions (divided into 14 groups). It was designed taking into account the existing methodological approaches to measure the level of awareness regarding environmental management topics (e.g. New Ecological Paradigm), in a way as to be easy to compile and understand. For this purpose, several procedural remedies were adopted to reduce bias such as: avoiding vague concepts, complicated syntax and unfamiliar terms; keeping questions simple, specific and concise; avoiding the use of bipolar numerical scale values and providing verbal labels for the midpoints of scales. The complete anonymity of the respondents was guaranteed. For incentivizing responses, the questionnaire included a sentence showing the opportunity for the respondent to win a free ticket for a match upon completion of the survey ².

The questionnaire was physically administered to a sample of spectators/fans during Italian Premier League (“Serie A”) or UEFA Nations League official football matches that took place in 3 European pilot stadiums of the LIFE TACKLE project: “Luigi Ferraris” stadium in Genova-Italy, Olympic stadium in Rome-Italy, and Friends Arena in Stockholm-Sweden. The selection of pilot stadiums took into consideration the interest and availability shown by the stakeholders, which were invited to join the project and formalize their commitment through an ad hoc Participation Agreement to the TACKLE stadium pilot projects. Table 1 shows in detail the date and the match during which questionnaires were distributed, and the number of questionnaires collected during each match.

A total of 1423 questionnaires were collected. However, given the non-mandatory nature of the answers to the questions of the survey, the number of actual respondents varies depending on the question. To allow a correct interpretation of the data, each graph takes into consideration the exact number of actual responses for each question. The minimum number of responses obtained from a question is indicated in brackets below each graph relating to a group of questions.

² “Do you want to have the chance to win a free ticket for a match of your favourite team? Write down your email here”

Table 1 - Questionnaires collected

Date	Country	Stadium	Match	N. of questionnaires collected
05/05/2019	Italy	“Luigi Ferraris”, Genova	Genoa-Roma	270
20/05/2019	Italy	Stadio Olimpico, Rome	Lazio-Bologna	149
26/05/2019	Italy	Stadio Olimpico, Rome	Roma-Parma	198
25/09/2019	Sweden	Friends Arena, Stockholm	AIK-Göteborg	75
05/10/2019	Sweden	Friends Arena, Stockholm	AIK- Örebro	110
12/10/2019	Italy	Stadio Olimpico, Rome	Italia-Grecia	146
15/10/2019	Sweden	Friends Arena, Stockholm	Sweden-Spain	160
02/11/2019	Sweden	Friends Arena, Stockholm	AIK- Sundsvall	80
19/01/2020	Italy	“Luigi Ferraris”, Genova	Genoa-Roma	235
Total				1423

The sample is mainly composed of young male adults: in particular, about 70% of respondents are male, while the remaining 30% are female (Figure 1). Over 50% of respondents are under 34 years old, of which the most populated age group in the sample is between 15 and 24 years old (25.4%), followed by the age group between 25 and 34 years old (20.8%). The third most populated age group is between 45 and 54 years old, which represents about 19% of the sample, while 15.3% of the sample is over 55 years of age and 15.2% of the sample is aged between 35 and 44. Only 4.4% of respondents are under the age of 15. (Figure 2).

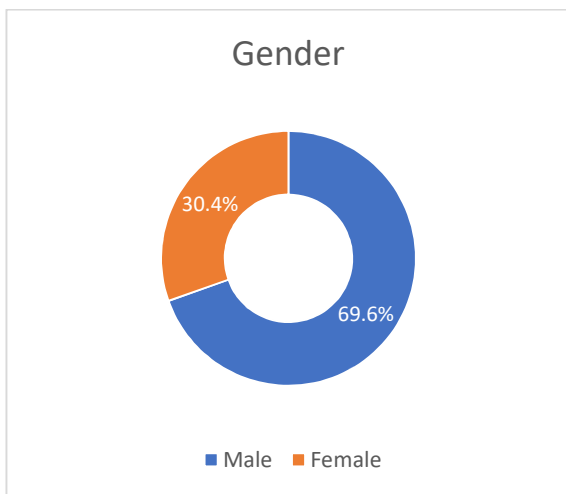


Figure 1 - Gender of respondents (n 1367)

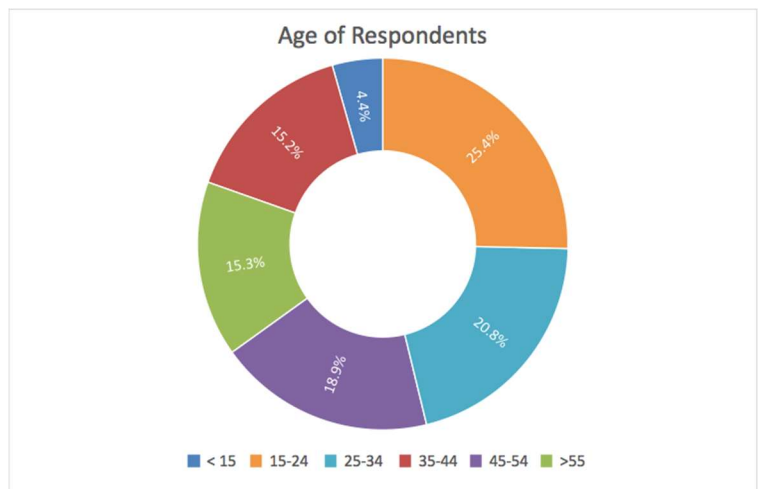


Figure 2- Age of respondents (n 1404)

With regard to the level of education, most of the respondents (over 55%) have completed high school, while almost 20% hold a Bachelor’s degree and almost 15% hold a Master’s degree. Few respondents have completed secondary school (8.3%), while very few have a doctorate degree (1.4%) or have completed primary school only (0.9%) (Figure 3).

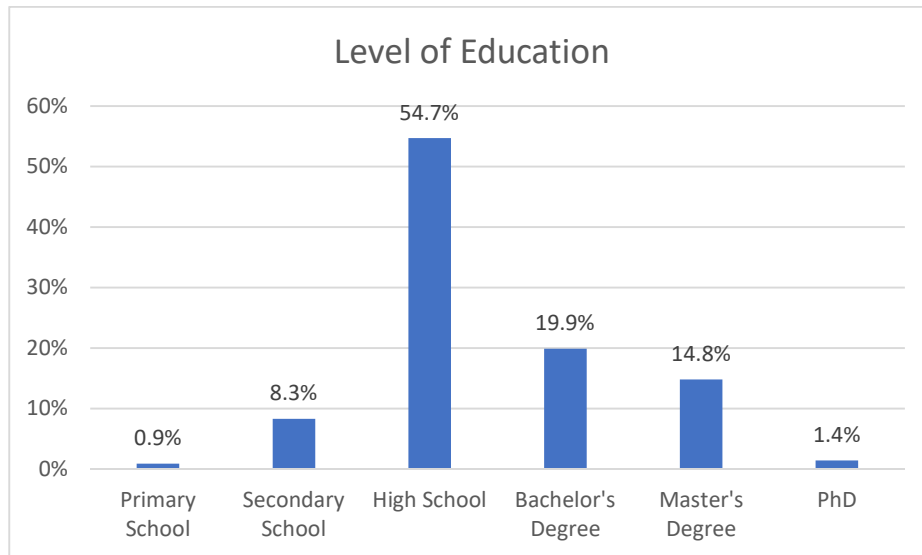


Figure 3 - Level of education of respondents (n 1400)

In terms of the distance travelled by fans and spectators to reach the stadium, most of the respondents in the final sample (over 55%) travelled less than 20 km (of which the majority, 35.5%, travelled between 5 and 19 km, while 14.4% travelled between 1 and 4 km, and only 5.3% travelled less than 1 km). About 25% of respondents travelled between 20 and 100 km, while almost 20% travelled more than 100 km to get to the stadium: these percentages are noteworthy in terms of the environmental impact related to the mobility of supporters (Figure 4).

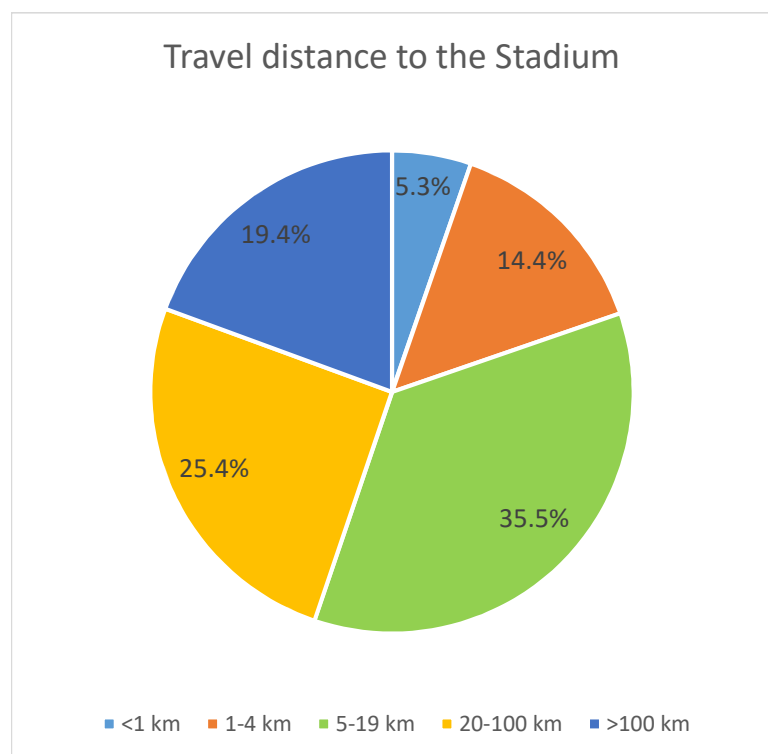


Figure 4 - Travel distance to the Stadium (n 1398)

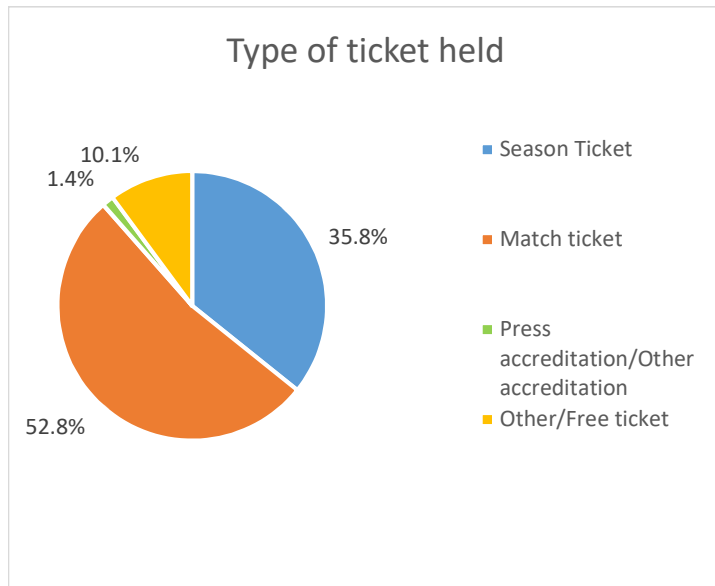


Figure 5 - Type of ticket held (n 1383)

As for the type of ticket held by spectators and supporters involved in the survey, most of the respondents (52.8%) owned a single ticket to attend the match, while 35.8% of respondents were part of a close-knit group of fans who regularly attend football games and hold a season ticket. Only about 10% of respondents owned a free ticket, while 1.4% of respondents obtained accreditation to attend the match (e.g. journalists) (Figure 5).

The sample described above relates to Chapters 3 to 5. Instead, Chapter 6 uses results from a different survey carried out during a match of Spanish Liga, which refers to the mobility behaviour of supporters; details of this sample are reported at the beginning of Chapter 6.

3 Measuring the environmental awareness of supporters

This section of the report assesses football supporters' environmental awareness by investigating (1) their environmental values, (2) environmental behaviour in daily life and (3) perceived knowledge of environmental issues. At least a specific question with multiple items was referred in the questionnaire to each of these three environmental aspects measured. The results of those questions are presented in the figures below.

Understanding the level of environmental awareness of supporters is crucial for designing and implementing environmental actions that are oriented towards supporters. More specifically, the level of environmental awareness of supporters can serve in the planning phase as a preliminary measure to design and tailor adequate dissemination campaigns aimed at raising the environmental awareness of supporters, as well as in the phase of performance measurement as a benchmark to assess the effectiveness of those implemented initiatives.

The level of environmental awareness has been proved to be one of the main elements that influence people's responsiveness to environmental actions performed by organisations. Moreover, a greater level of environmental awareness partially explains the greater behavioural intentions of people in protecting the natural environment. Ultimately, measuring the level of environmental awareness can be the first step for a process that aims to trigger positive behavioural change on people.

3.1 Environmental attitude and values

In psychology different theories consider values as important antecedents of behaviours, orienting individuals in how to judge the surrounding reality. The rationale is that personal values influence how people make decisions, judging what is right and what is wrong and thus orienting their behaviours. The higher the environmental values of a person among his/her values, the more probable he/she will adopt a pro-environmental behaviour.

In this report, the environmental values of supporters are assessed by measuring respondents' level of agreement with five sentences. Each sentence describes a pro-environmental attitude that directly refers to the personal sphere of values, such as the importance of fighting climate change or preventing pollution. The results are presented in the following figure.

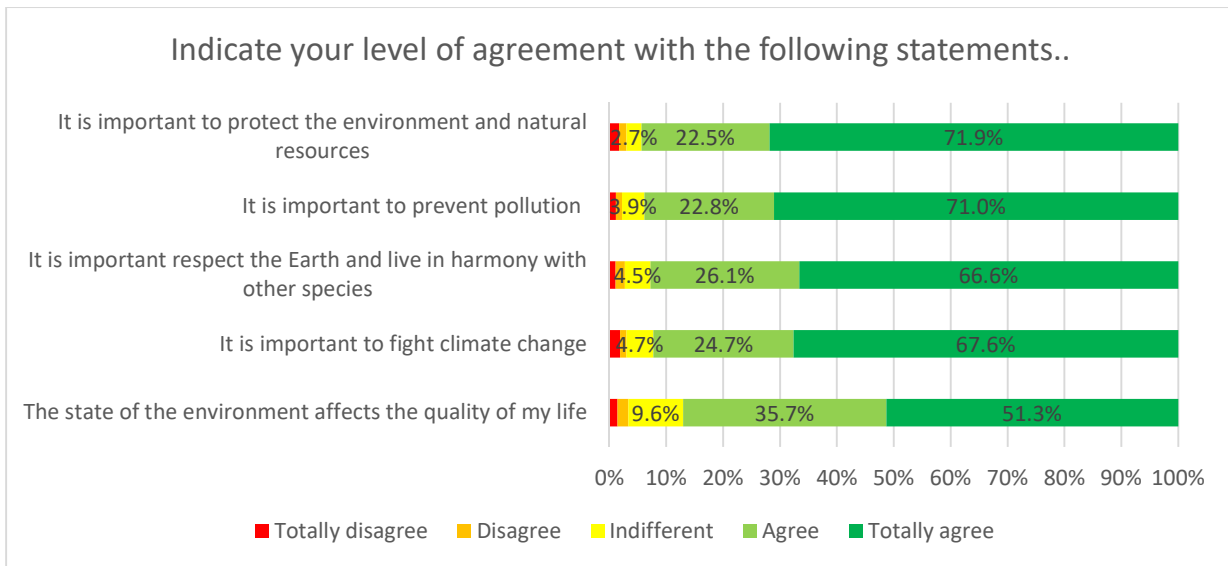


Figure 6 - Environmental values of respondents (n 1393)

The large majority of respondents – more than 90% – agree or strongly agree with each of the four sentences regarding the importance of (1) protecting the environment and natural resources, (2) preventing pollution, (3) respecting the Earth and living in harmony with other species and (4) fighting climate change.

These results show a very high level of environmental values of supporters, who strongly believe that the natural environment should be preserved. However, such pro-environmental attitude of supporters does not necessarily imply an actual adoption of the most environmentally friendly behaviours, as explained by the so-called attitude-behaviour gap. Attitude-behaviour gap is the phenomenon for which people willing to take a specific action are not going to translate their intention into actual behaviour in the end. There can be many explanations for this phenomenon: e.g. it is too difficult, too expensive, it requires too much effort or it is perceived as ineffective for reaching the ultimate goal. For instance, if a football fan possesses high values towards the environment but he does not perceive that he can effectively contribute to the global cause of protecting the environment with his personal behaviour, he will be discouraged in translating his values into concrete actions. In this report, 13% of respondents are indifferent or disagree with the fifth statement, which is “*The state of the environment affects the quality of my life*”. This result highlights that the impact of the state of the environment on the supporters’ quality of life is not perceived as much as important as their environmental values, which may be one of the factors that contributes to the existence of the attitude-behaviour gap.

3.2 Environmental behaviour in daily life

One of the aims of raising environmental awareness among football supporters is to promote their environmentally responsible behaviours in daily life, both at home and during sport events. Sport organisations and policy makers can implement various marketing campaigns, such as the use of green advertising or the involvement of sport athletes and celebrities to trigger behavioural change. In order to identify the environmental practices that need to be fostered among supporters, it is necessary to measure their current level of engagement with those environmental practices. Moreover, assessing the supporters' environmental behaviour in daily life allows to empirically validate the relationship between values and actual behaviours, theoretically discussed by many scholars. Behaviours in daily life are measured in this report by assessing supporters' frequency of adoption of seven sentences, each corresponding to a good practice of environmental behaviour.

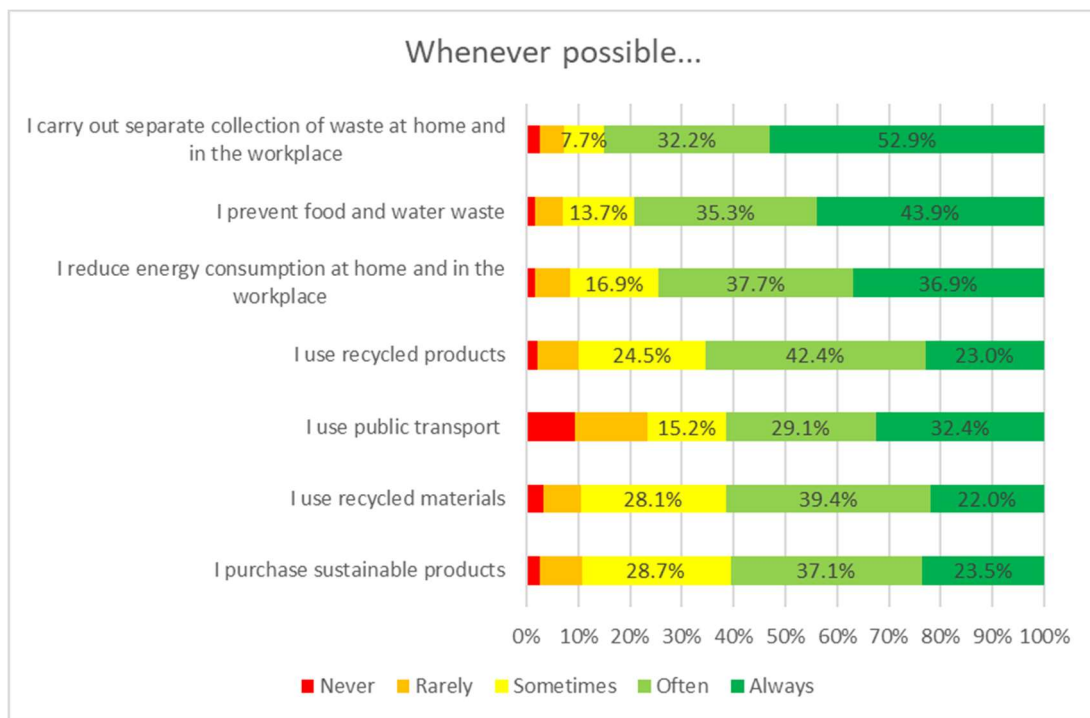


Figure 7 - Environmental behaviour in daily life (n 1395)

“Carrying out separate collection”, “preventing food and water waste” and “reducing energy consumption” emerge to be the most implemented environmental behaviours. The 3 behaviours have in common to refer to environmental actions rather than environmental products. Among the three, “carrying out separate collection” has the most widespread adoption with the 85% of respondents that have always or often adopted such environmental behaviour. Most likely, the legal obligation to comply with this practice in many municipalities has raised the frequency of its adoption.

“Preventing food and water waste” is often or always adopted by almost 80% of respondents, while “reducing energy consumption” by 75%. High levels of adoption of these environmental behaviours can be explained with the personal benefits associated with those environmental practices. They are win-win solutions since safeguarding the natural environment allows supporters to save money, such as paying cheaper energy and water bills.

The same consideration is not easily replicable with the environmental behaviours that belong to the category of environmental products, i.e., “*using recycled products*”, “*using recycled materials*” and “*purchasing sustainable products*”. Lower levels of adoption are associated with those behaviours. Management scholars in the field of environmental sustainability demonstrated that green purchasing intentions are strongly influenced by price and quality. If prices of greener products are higher and/or their quality is lower, consumers are not willing to buy those products. This scientific evidence may be empirically confirmed by the data of this report, where 3 out of the 4 least adopted environmental behaviours belong to the category of environmental products. Finally, the level of adoption of the behaviour “*Using public transport*” needs to be individually discussed. Around 1000 questionnaires have been filled by Italian supporters probably living in Rome or Genoa, which are the cities where the questionnaires have been collected. These are two cities where the urban mobility is strongly affected by local historical development, land morphology and transport management. Taking a bus or other public transports is an environmental behaviour where many factors are taken into account by citizens, such as time of travel, quality, availability of the service and comfort. Therefore, the 23.3% of the respondents who answered that they never or rarely used public transports evaluated the poor performance of the abovementioned factors together with the potential environmental benefits. As a managerial consequence, local authorities and municipalities should try to increase the performance of such services in order to incentivize the use of public transports by supporters, and more in general by citizens.

3.3 Perceived level of knowledge of environmental sustainability

Assessing supporters’ perceived level of knowledge of issues related to environmental sustainability is fundamental in order to measure their environmental awareness. In this report, we investigated separately general aspects related with environmental protection, such as climate change or renewable energies, and specific aspects related with individual environmental behaviours such as how to properly carry out separate collection or recognize recycled products. Measuring knowledge on environmental aspects represents a crucial factor for interpreting people’s responsiveness to environmental sustainability, especially in the sport industry where the

supporter’s proximity to clubs and sport organisations furtherly magnifies their reactions to environmental actions or programmes implemented. For instance, if supporters are not aware of climate change, they will probably be less interested, and even not favourable, towards climate change mitigation actions. Knowledge is the basis for triggering people’s interest and willingness to change. Moreover, environmental campaigns of awareness raising should be targeted at increasing the adoption of supporters’ pro-environmental behaviours, according to their specific level of knowledge on environmental aspects. In this regard, assessing how supporters perceive to adopt individual environmental actions in a well-informed way is crucial for making accurate interventions.

The level of perceived knowledge on environmental aspects has been measured by assessing the supporters’ agreement with 4 sentences related to general environmental aspects and 5 sentences related to specific environmental aspects.

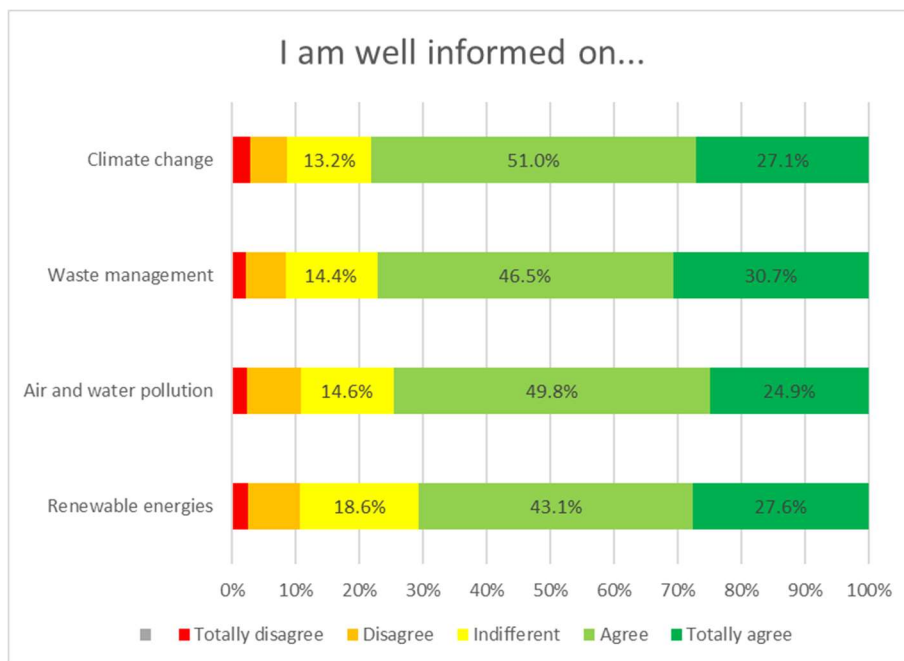


Figure 8 - Fans' perceived level of information on aspects related to environmental protection (n 1361)

The results to the first set of sentences depict a similar trend in respondents’ framing of general environmental aspects. The highest level of agreement was scored by “climate change”, where 78.1 % of respondents agree or totally agree to be well informed, while the lowest level of agreement belongs to “renewable energies”, where the percentage of respondents who agree or totally agree with being well-informed on this topic is 70.7 %.

Such results homogeneity may indicate that supporters do not individually delve into different environmental topics, receiving the same level of information by newspapers, social media or other communication channels. Consequently, their perceived level of information on general

environmental aspects emerges to be similar and rather high among very different topics such as waste management and renewable energies.

Raising environmental awareness among supporters is also important to keep people informed on different environmental aspects, so that individuals can take decisions and act as consciously as possible.

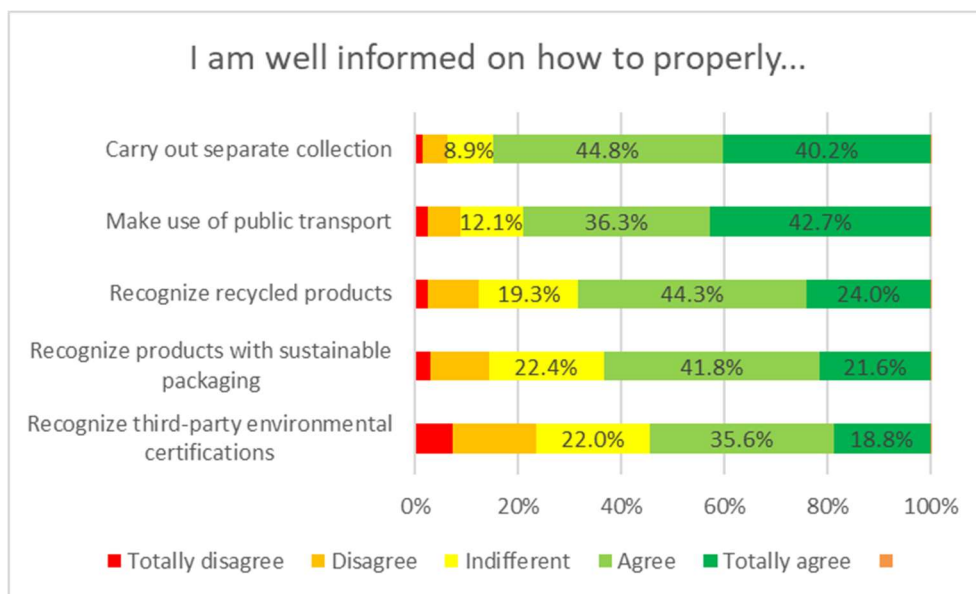


Figure 9 - How supporters act in a well-informed way on the listed aspects related to environmental sustainability (n 1369)

With regard to the perceived knowledge on environmental aspects relating to individual behaviours, the results are much more heterogeneous than the previous ones. More than 85% of respondents agree or totally agree with being well informed on “*how to properly carry out separate collection*”, while “*recognize third-party environmental certifications*” is not perceived as well-known by the 45% of supporters who declared to totally disagree or disagree with being well informed on it.

Certainly, the action of carrying out separate collection is much more frequent than the others listed and even compulsory in many municipalities. This may explain its higher level of perceived information. The same consideration is valid for the practice of “*make use of public transport*”, which shows high levels of agreement.

“*Recognize third-party environmental certifications*” is the least known environmental aspect, suggesting that policy makers should invest in communication by informing consumers on the existence and utility of those certifications.

Finally, “*recognize products with sustainable packaging*” and “*recognize recycled products*” scored similar results of agreement, where around 65% of respondents agree or totally agree with

being well informed on those aspects. They both refer to eco-friendly products and green purchasing intentions, a very important topic within the area of environmental sustainability. Communication campaigns aimed at increasing consumers' capacity to recognize sustainable products are fundamental in order to reward companies' efforts of using recycled materials or sustainable packaging.

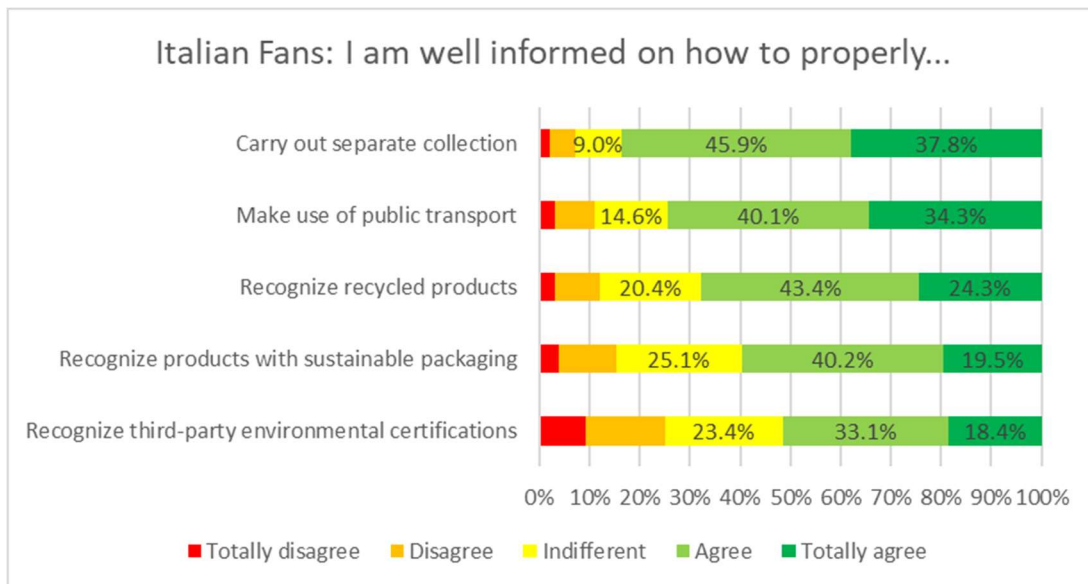


Figure 10 - How Italian supporters act in a well-informed way on the listed aspects related to environmental sustainability (n 998, Italy)

As the questionnaires were collected in Italy and Sweden, the perceived knowledge on environmental aspects relating to individual behaviours could be further analyzed with respect to these two countries. In case of supporters from Italy, around 84% of respondents agree or totally agree with being well informed on “*how to properly carry out separate collection*” while around 49% of respondents disagree or totally disagree with being well informed on “*recognize third-party environmental certifications*”. In case of supporters from Sweden, around 88% of respondents agree or totally agree with being well informed on “*how to properly carry out separate collection*” while around 39% of respondents disagree or totally disagree with being well informed on “*recognize third-party environmental certifications*”. Although third-party environmental certifications are not compulsory in many municipalities or even countries, but this finding suggests that policy makers, particularly in Italy, should invest in communication by informing consumers on the existence and utility of those certifications. The same consideration is valid for the practice of “*make use of public transport*” since in case of Sweden around 90% of respondents agree or totally agree, while in case of Italy only 74% of respondents agree or totally agree.

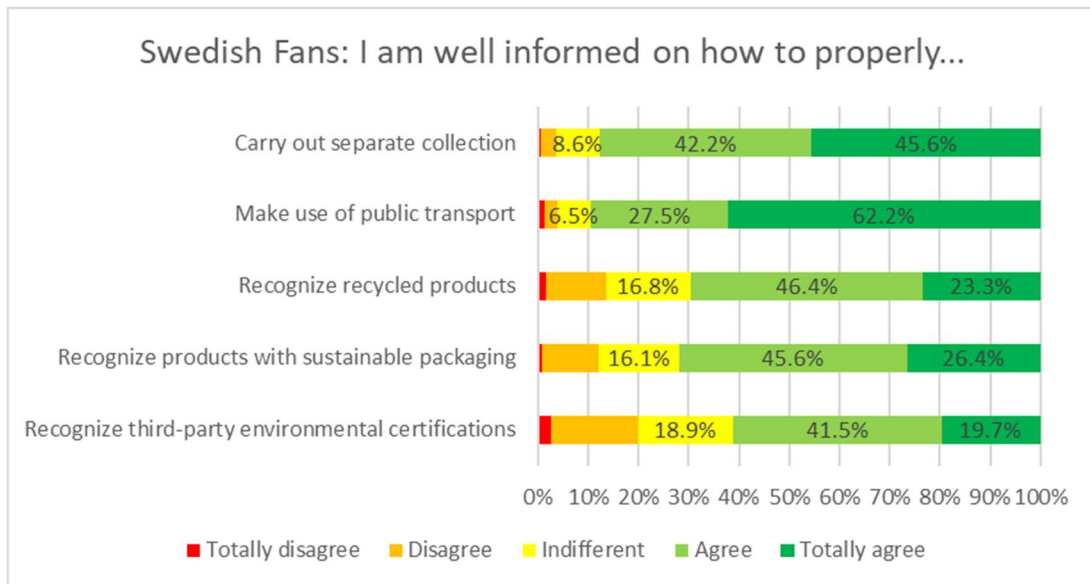


Figure 11 - How Swedish supporters act in a well-informed way on the listed aspects related to environmental sustainability (n 425, Sweden)

Interestingly, “*recognize recycled products*” shows a similar level in both countries. That is, around 70% of respondents in the case of Sweden and around 68% of respondents in the case of Italy agree or totally agree with being well informed. Around 72% of respondents in the case of Sweden while around 60% of respondents in the case of Italy agree or totally agree with being well informed on “*recognize products with sustainable packaging*”.

4 Perceptions and expectations of fans on the environmental management of football

Because of its unique powerful cultural phenomenon football brings together people from all over the world and also generates large amounts of waste among impressive consumptions of energy and water. Studies have demonstrated that the ecological footprint of football matches is considerable, yet, in recent years relatively little attention has been dedicated to the environmental impact generated by this sport. Throughout the last decades citizens have generally become increasingly attentive to environmental issues, stirring the need of industries and governments to update the level of attention towards environmental management. The same phenomenon is occurring today in the world of football, where football actors are increasingly becoming accountable of the ecological footprint generated during football matches.

4.1 The importance of environmental management in football

In order to understand and better evaluate the ongoing cultural shift regarding environmental management of football matches we have asked football fans to indicate their perception of the importance of environmental management of football matches on a scale of five different options ranging from “totally disagree”, “disagree”, “indifferent”, “agree” and “totally agree”.

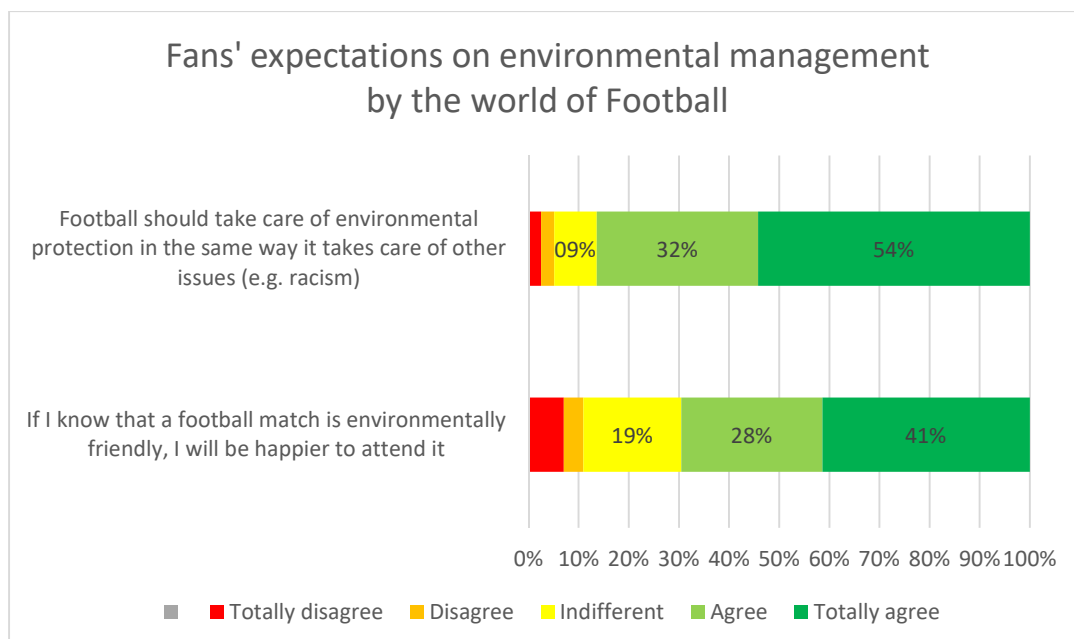


Figure 12 - Fans' expectation on environmental management by the world of Football (n 1394)

Respondents have generally shown that amongst fans there is an overall concern towards the environmental impacts of football matches. Well above the majority of respondents, in fact 86.3% of fans that answered the questionnaire, have declared that they “agree” or “totally agree” that football should take care of environmental protection in the same way it takes care of other issues such as discrimination. Amongst those, the grand majority, 54.2%, said they would “totally agree”, thus demonstrating the strongest sentiment towards environmental protection. Similarly, 69.6% of respondents answered that they “agree” or “totally agree” that they would be much happier to attend a football match if they knew it was environmentally friendly. Among those respondents 41.4% had selected the option “totally agree” to show that they would gain happiness if the matches they attended were environmentally friendly.

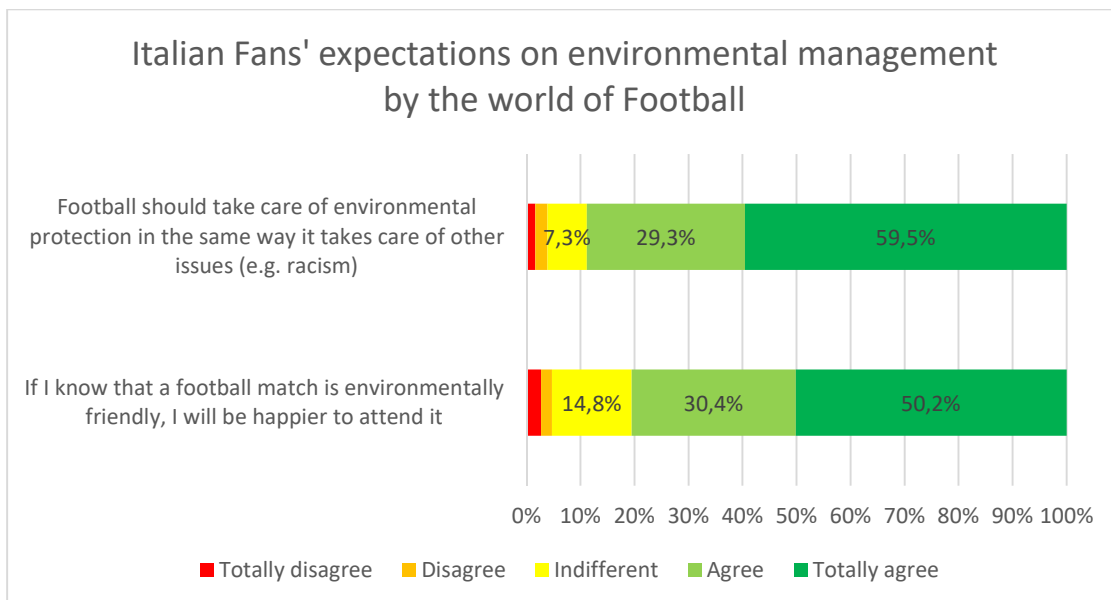


Figure 13 - Italian Fans' expectation on environmental management by the world of Football (n 998, Italy)

On analyzing football fans perception regarding the importance of environmental management of football matches with respect to two countries, it emerges that respondents from Italy are more convinced compared to the respondents from Sweden. Indeed, around 80% of the respondents from Italy totally agree that football should take care of environmental management in the same way as it takes care of other issues such as discrimination. In contrast, around 42% of the respondents from Sweden totally agree on the significance of environmental management of football matches.

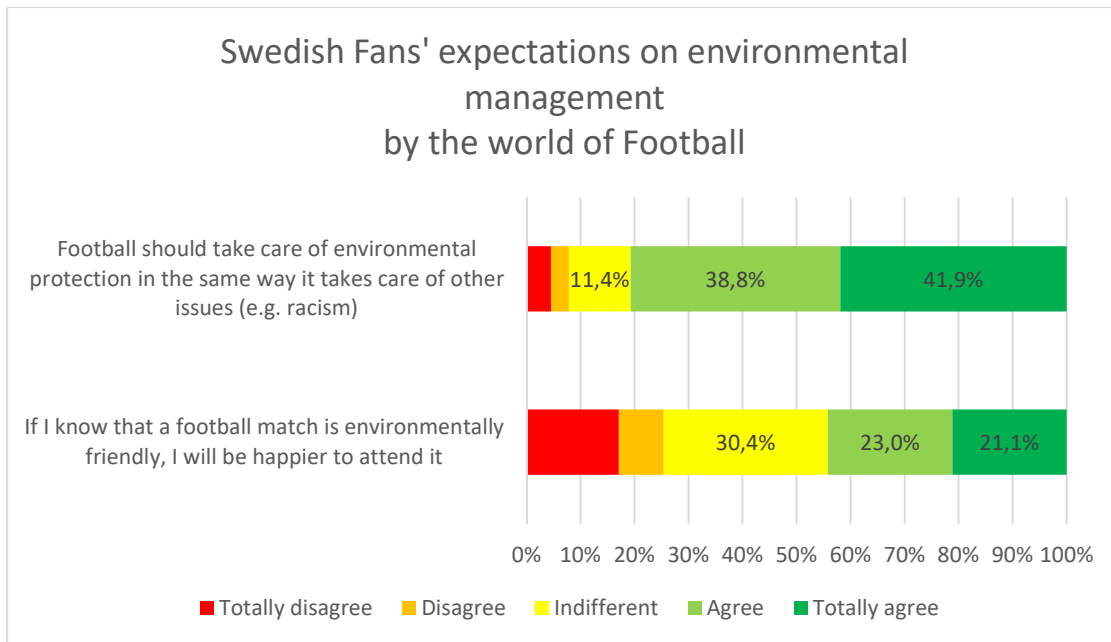


Figure 14 - Swedish Fans' expectation on environmental management by the world of Football (n 425, Sweden)

Similarly, 50% of respondents from Italy totally agree that they would be much happier to attend a football match if they knew if it was environmentally friendly. However, surprisingly, only 21% of respondents from Sweden totally agree that they would be much happier to attend a football match if they knew if it was environmentally friendly. This suggests that policy makers should take appropriate actions in order to propagate the significance of environmental management of football matches.

4.2 The role of different organisations in promoting initiatives of environmental protection in Football

Another interesting aspect revolving around the cultural shift regarding environmental management is the football fan's opinion regarding who should be responsible for initiatives of environmental protection in the world of football.

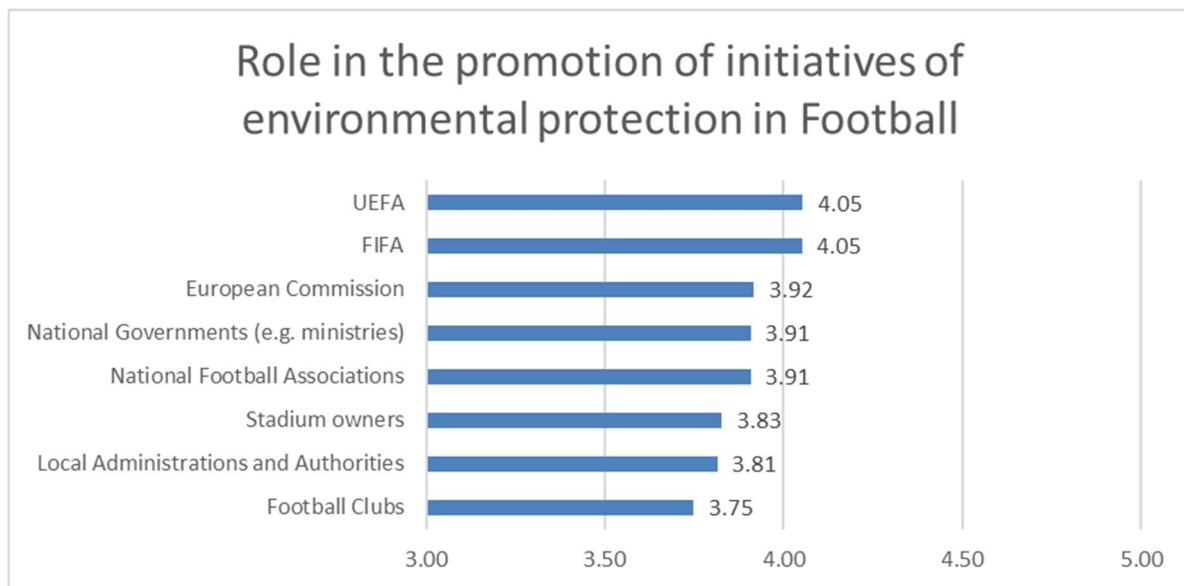


Figure 15 - Level of importance given to each organisation in promoting initiatives of environment protection in Football (n 1367)

The level of importance in the promotion of initiatives of environmental protection ascribed to the different organisations working in the world of football has been measured by giving respondents a list of eight different international/European/national/regional/local organisations working or influencing football management at different levels (UEFA, FIFA, European Commission, National Governments, National Football Associations, Stadium owners, Local Administrations and Authorities and football clubs). Fans had to attribute a level of importance ranging from 0 to 5, zero standing for “not important” and five standing for “very important” in order to evaluate whom, according to football fans, should be the most accountable for stirring environmental protection initiatives in this realm. Very interestingly the biggest organisations working on an international and European level, FIFA and UEFA, are seen by football fans as the most accountable entities for the encouragement of environmental protection initiatives in football. Both FIFA and UEFA scored a level of importance of 4.05. Not too far behind, with a level of importance equalling 3.92, the European Commission is viewed by fans as the third most important entity in the advancement of environmental protection in football. Right behind, with a score of 3.91, both National Governments and National Football Associations are the fourth and fifth most accountable entities in the eyes of football fans. Interestingly, according to respondents the least accountable organisations are the ones operating at the local level, such as stadium owners (3.83), local administrations and authorities (3.81) and football clubs (3.75).

4.3 The role of different actors operating in the world of Football in raising environmental awareness

Another question submitted to football fans regarded the role of different football actors in raising awareness on environmental protection. Respondents were asked their opinions on five different statements and could answer in five different ways: “totally disagree”, “disagree”, “indifferent”, “agree”, and “totally agree”.

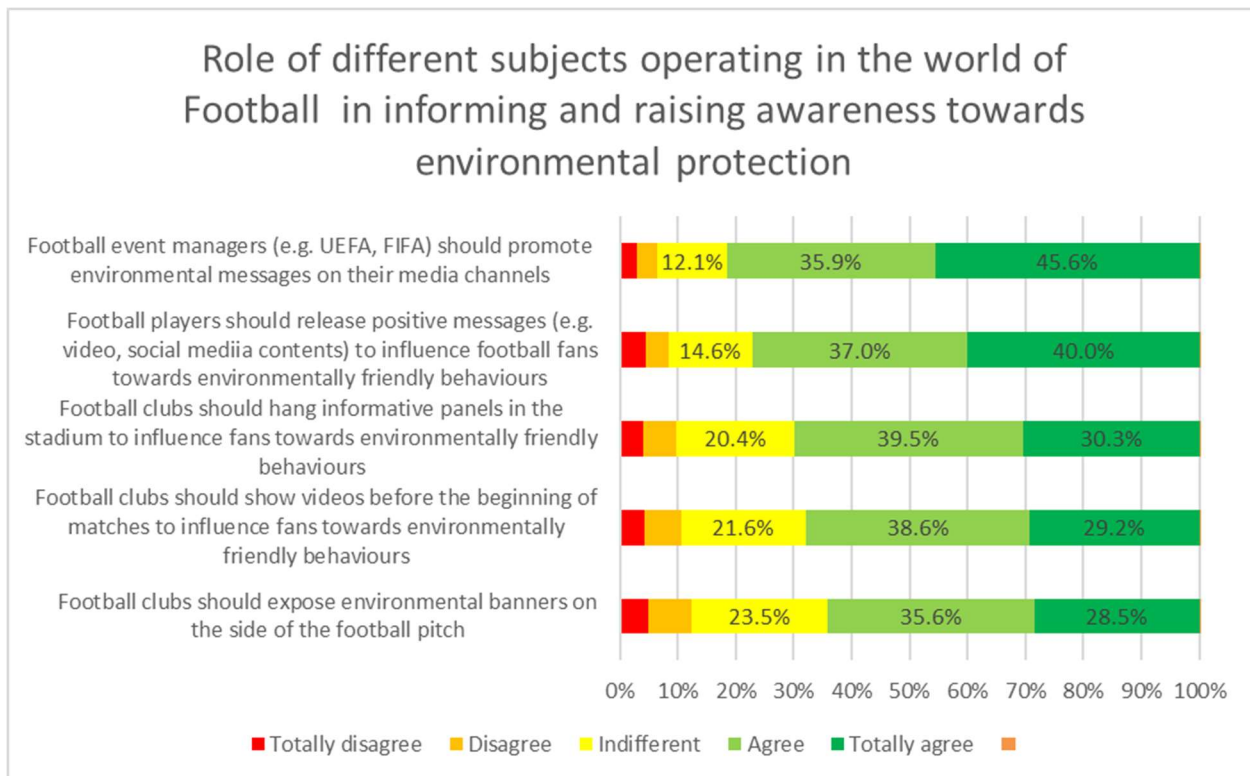


Figure 16 - Fans' perception about the different subjects operating in the world of Football and their role in informing and raising awareness on environment protection (n 1394)

When testing the perception of the role of different subjects operating in the world of football in informing and raising environmental awareness, over half of respondents “agreed” or “totally agreed” that event managers, players and football clubs all have to play a role. In this section of the questionnaire football fans were asked their opinions on whether football event managers such as UEFA and FIFA should promote environmental messages on their media. Many respondents (45.6%) “totally agree” on the fact that football event managers should promote environmental awareness raising. Another 35.9% checked the option “agree”, meaning that the majority of respondents (over 81%) believe that football actors such as UEFA and FIFA should be the driving forces of environmental communication within the realm of football.

The majority of football fans engaged in the questionnaire (77%) also answered that they “agree” or “totally agree” that football players should release positive messages on environmental protection, such as through videos and social media contents. Of these 77%, the majority said that they “totally agree”.

When respondents were asked about the role that football clubs should play, the majority said that they “agree” or “totally agree” that clubs should hang informative panels in the stadium to influence fans (69.8%), that clubs should show videos promoting environmental protection before the matches (67.8%) and that they should expose banners on the sides of the football pitch (64.1%). Interestingly, when asked about the role that football clubs should play, fans tend to become slightly more indifferent than when asked about the role of football manager or football players.

4.4 The commitment that the world of Football should devote to different environmental issues

Respondents were also asked about their expectation with regard to the commitment that the world of football should give to seven different environmental topics. As for the previous questions, respondents could give their opinion by selecting one of five options: “totally disagree”, “disagree”, “indifferent”, “agree”, and “totally agree”.

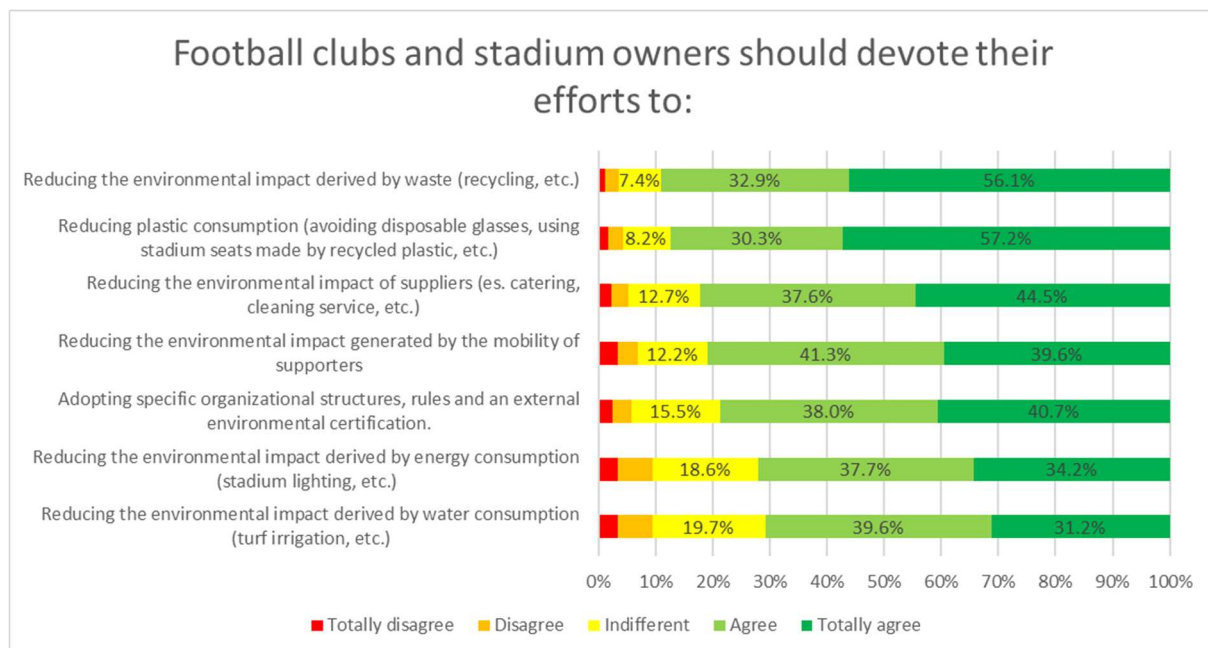


Figure 17 - Fans' expectations on the commitment that the world of Football should devote to environmental issues (n 1370)

Overall in all seven cases the majority of respondents “agreed” or “totally agreed” that the world of football should commit to these issues. Most fans (89%) believe that waste reduction is an important environmental issue that the world of football should commit to. Plastic consumption reduction is the second most voted on topic; 87.5% of respondents checked the boxes “agree” or “totally agree”. Reducing the environmental impact of suppliers such as catering and cleaning services is the third most voted topic (82.1%) said that they “agree or “totally agree”. In this case over the number of fans that states to be indifferent increases of over 4 percentage points from when asked about the reduction of plastic waste, and of over 5 percentage points compared to when asked about waste reduction. When asked about whether the world of football should commit to the adoption of specific organisational structure, rules and an external environmental certification, the majority (78.7%) of respondents “agree” or “totally agree”, but the percentage of fans that remains indifferent increases to 15.5%. The percentage of indifferent respondents increases also when asked about whether football should commit to the reduction of environmental impacts deriving from energy consumption (18.6%) and to reducing the environmental impact derived by water consumption (19.7%). Nevertheless, in both cases the majority of fans “agree” or “totally agree” that these topics are important and that the world of football should commit to them. The 71.9% of respondents “agrees” or “totally agrees” that the ecological footprint linked to energy consumption is a key subject and 70.8% of respondents “agrees” or “totally agrees” that football should commit to reducing the environmental impact derived from water consumption.

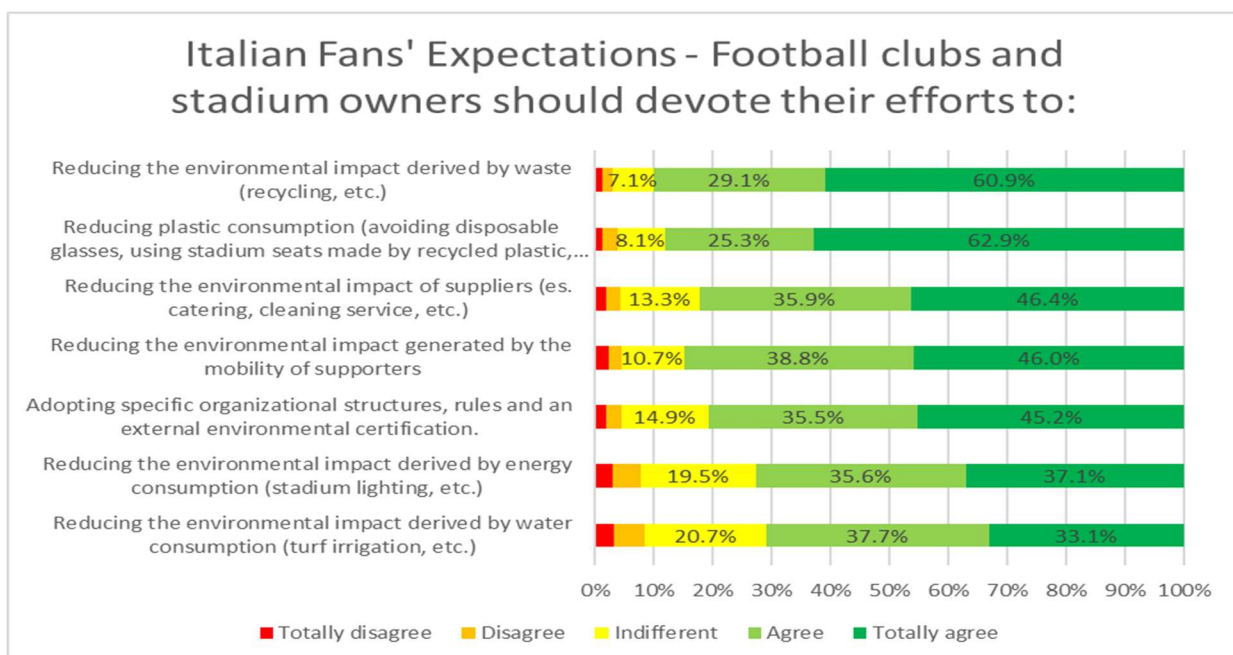


Figure 18 - Italian Fans' expectations on the commitment that the world of Football should devote to environmental issues (n 998, Italy)

On analyzing further with respect to two countries, it emerges that 90% of respondents from Italy agree or totally agree that football clubs and stadium owners should devote their efforts to reducing the environmental impact derived by waste, while 87% of respondents from Sweden also believe the same. Next to waste reduction, plastic consumption is the second most important issue in the eyes of supporters from both countries. Around 88% of respondents from Italy and around 86% of respondents from Sweden agree or totally agree that football clubs and stadium owners should devote their efforts on reducing plastic consumption. In the case of Italy, reducing the environmental impact generated by the mobility of supporters is the third most important issue as around 85% of respondents agree or totally agree on the importance of that issue. Whereas, in the case of Sweden, reducing the environmental impact of suppliers is the third most important issue as around 82% of respondents agree or totally agree on the importance of that issue.

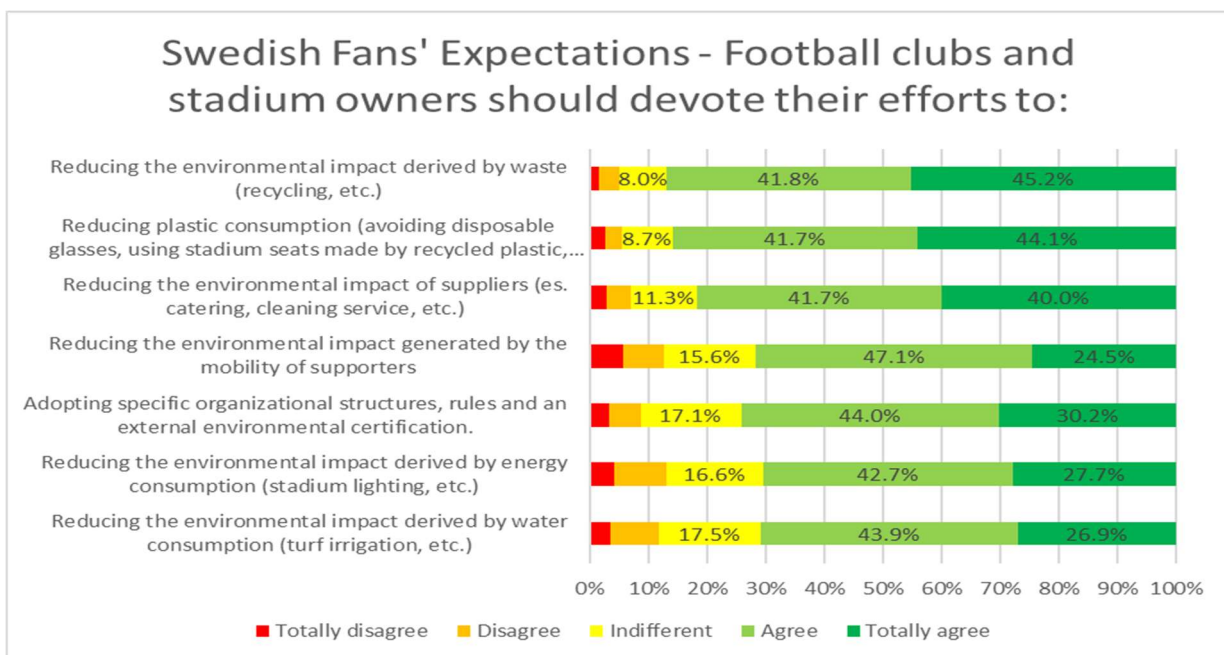


Figure 19 - Swedish Fans' expectations on the commitment that the world of Football should devote to environmental issues (n 425, Sweden)

80% and 74% of respondents from Italy and Sweden respectively agree or totally agree that the world of football should commit to the adoption of specific organisational structure, rules and external environmental certification. Surprisingly, reducing the environmental impact derived by energy consumption and by water consumption were pointed out as least important issues compared to other issues in case of both countries.

4.5 Fans' relationship with their favourite football club and their perception of how it takes care of the environment

Finally, respondents were also asked about their relationship with their favourite football club.

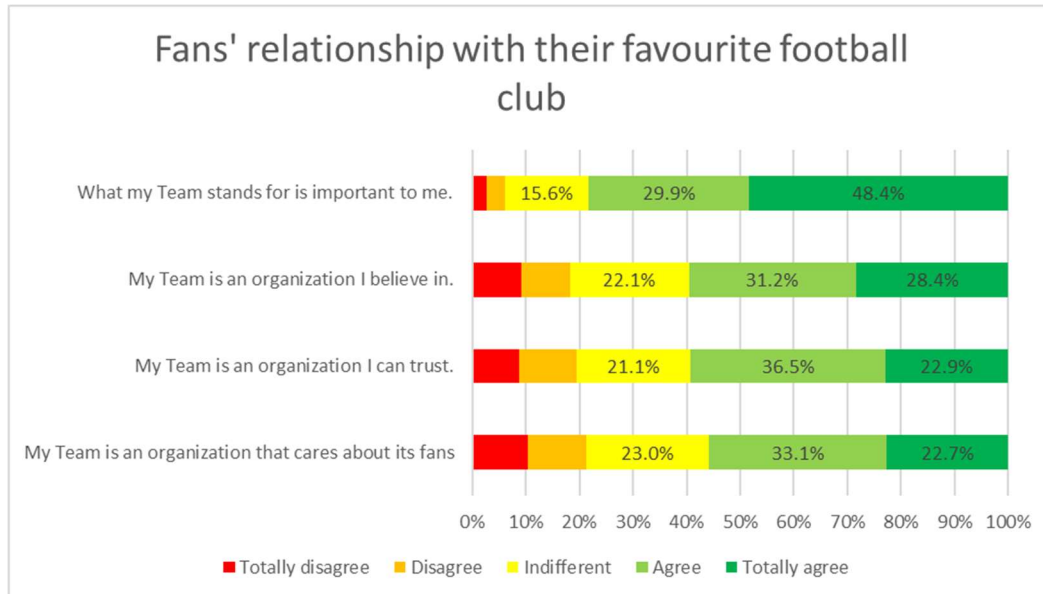


Figure 20 - Supporters' relationship with their favourite football club (n 1368)

The majority of respondents stated that what their team stands for is important to them (78.3%), that their team is an organisation in which they believe (59.6%), that their team is an organisation that they can trust (59.4%) and that their team is an organisation that cares about its fans (55.8%).

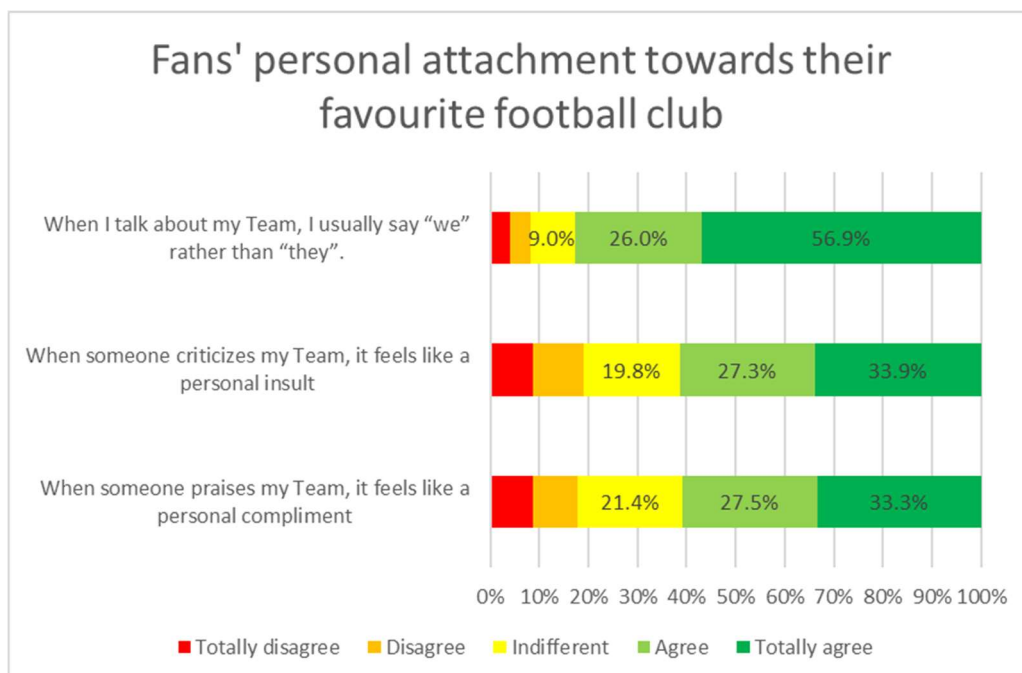


Figure 21 - Supporters' personal attachment towards their favourite football club (n 1379)

Fans also answered questions about their personal attachment to their favourite football club. Overall, results show that supporters identify with their favourite football team, demonstrating their emotional connection to it. In particular, the grand majority of respondents (82.9%) stated that when talking about their team they use “we” rather than “they”. The majority, 61.2%, takes a criticism to his/her team as a personal insult, while 19.8% remains indifferent, and 60.8% of respondents interpret praises to their team as a personal compliment, while 21.4% are indifferent. The sense of belonging and identification of supporters with their team is an important aspect to take into consideration, as it can trigger among the fans a process of acceptance and emulation of the pro-environmental behaviours adopted by their football club.

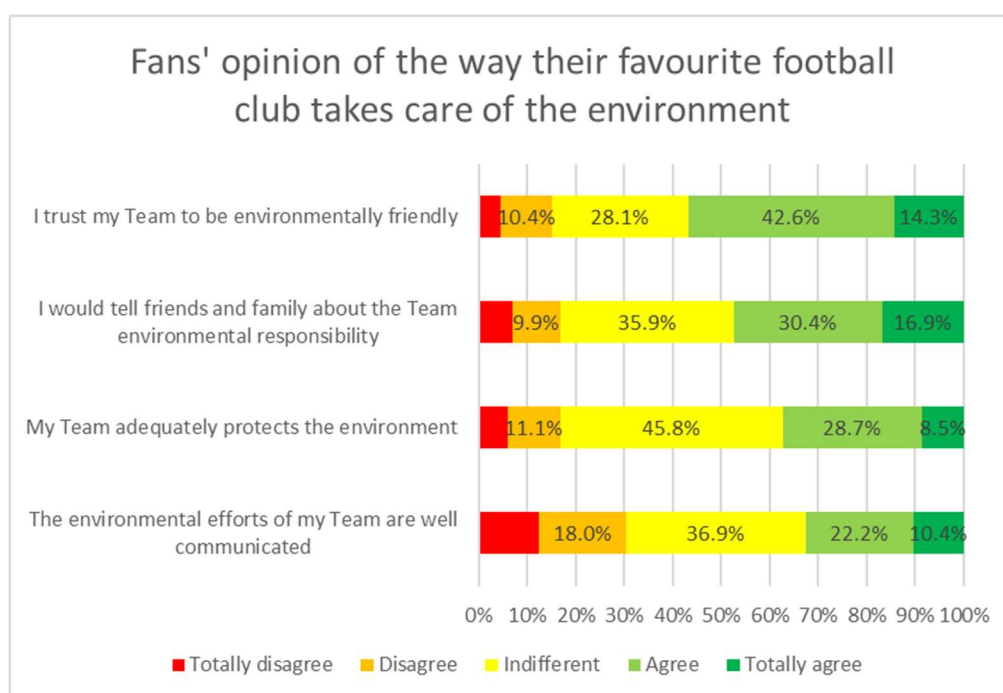


Figure 22 - Fans' opinion on the way their favourite football club takes care of the environment (n 1357)

As for the perception that fans have of the way their favourite football club takes care of the environment, most respondents “agree” or “totally agree” on the statement that “they trust their team to be environmentally friendly” (56.9%), while 28.1% are indifferent, and 10.4% disagree. When asked if they would tell their friends and family about their team’s environmental responsibility, 47.3% of respondents said that they “agree” or “totally agree”, while a large chunk (35.9%) was indifferent and almost 10% disagrees. Only 8.5% of respondents “totally agree” that their team adequately protects the environment, while 28.7% “agree” and 45.8% is indifferent. An 11.1% disagree on this statement. Finally, the majority of fans stated that they are indifferent (36.9%) or disagree (18%) on whether their team communicates effectively its environmental efforts. Only 32.6% of respondents “agree” or “totally agree” that the environmental efforts of their team are well communicated.

5 The role and pro-environmental attitude of fans during football events

5.1 Willingness to adopt pro-environmental behaviours during a football match

Even if behavioural intentions do not correspond to actual behaviours, it is important to assess the supporters' level of willingness to adopt environmentally friendly behaviours, especially during football matches.

Different environmental actions may correspond to different supporters' intentions. Many factors can influence the willingness to adopt a specific action, such as the level of knowledge concerning the environmental benefits caused by the action, or the cost to implement it. The following table illustrate the supporters' answers concerning their willingness to adopt 5 environmental behaviours.

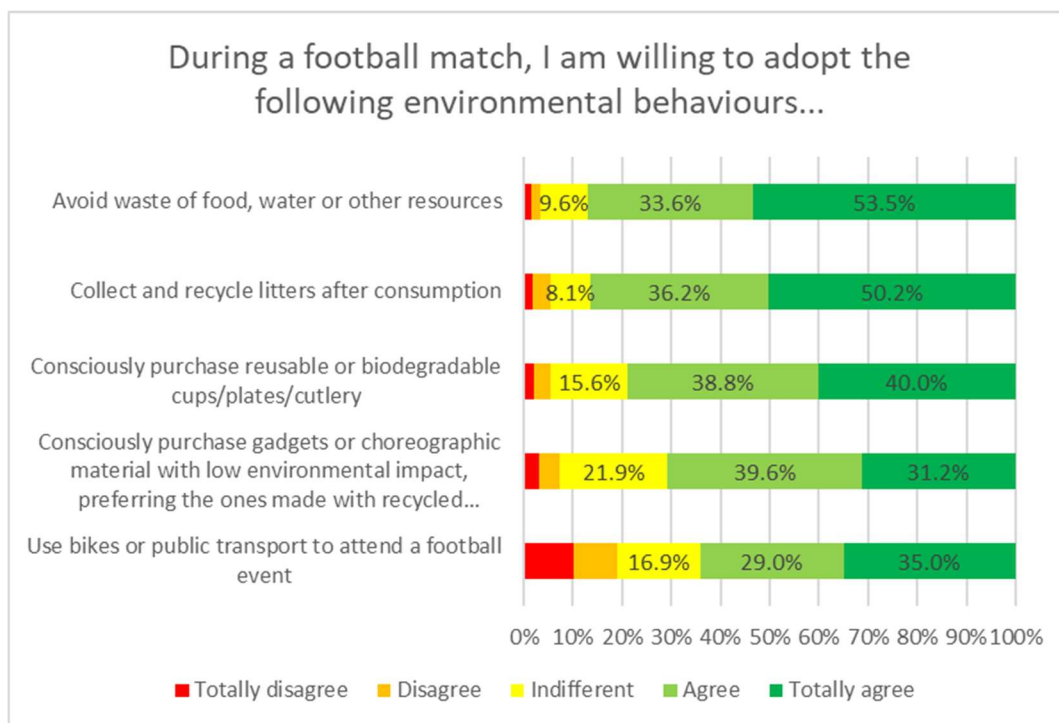


Figure 23 - Fans' willingness to adopt environmental behaviours during a football match (n 1343)

Almost 90% of supporters agree or strongly agree with the willingness to “avoid waste of food, water or other resources” and “collect and recycle litters after consumption”. The first action is both economically convenient and environmentally friendly: a win-win behaviour that is easily adoptable. The second action does not require any effort in terms of money or time but a minimum effort in looking at the right bin where to put the right trash. The two actions are both well-known and frequently performed at home; this facilitates supporters' willingness to adopt them also during football matches.

Regarding the environmental behaviours of “consciously purchase reusable or biodegradable cups/plates/cutlery” and “consciously purchase gadgets or choreographic material with low environmental impact, preferring the ones made with recycled materials”, respondents result to have high but lower intentions to adopt them compared to the previous actions (78.8% and 70.8% of respondents respectively totally agree or agree with these two behaviours). For instance, these green purchasing intentions may lead to extra-costs for supporters. The price factor may be an explanation of respondents’ lower level of agreement. Moreover, the action of purchasing gadgets or choreographic material with low environmental impact, may also appear to be difficult to be interpreted and implemented.

Finally, a lower score compared to the others is attributed to the willingness to “use bikes or public transports to attend a football event”: here it is interesting to note that 20% of respondents strongly disagree or disagree with this environmental behaviour. Such behavioural unwillingness of respondents may be explained by the negative influence of external factors concerning the use of public transport, which are not related to environmental issues, such as the scarce quality of the public transport service, the poor connections and comfort. This is particularly true for Rome and Genoa that are the two Italian cities where the survey took place. Probably, the environmental benefits coming from the use of bikes or public transport do not balance the perceived inconvenience in terms of quality and comfort of the public transportation service.

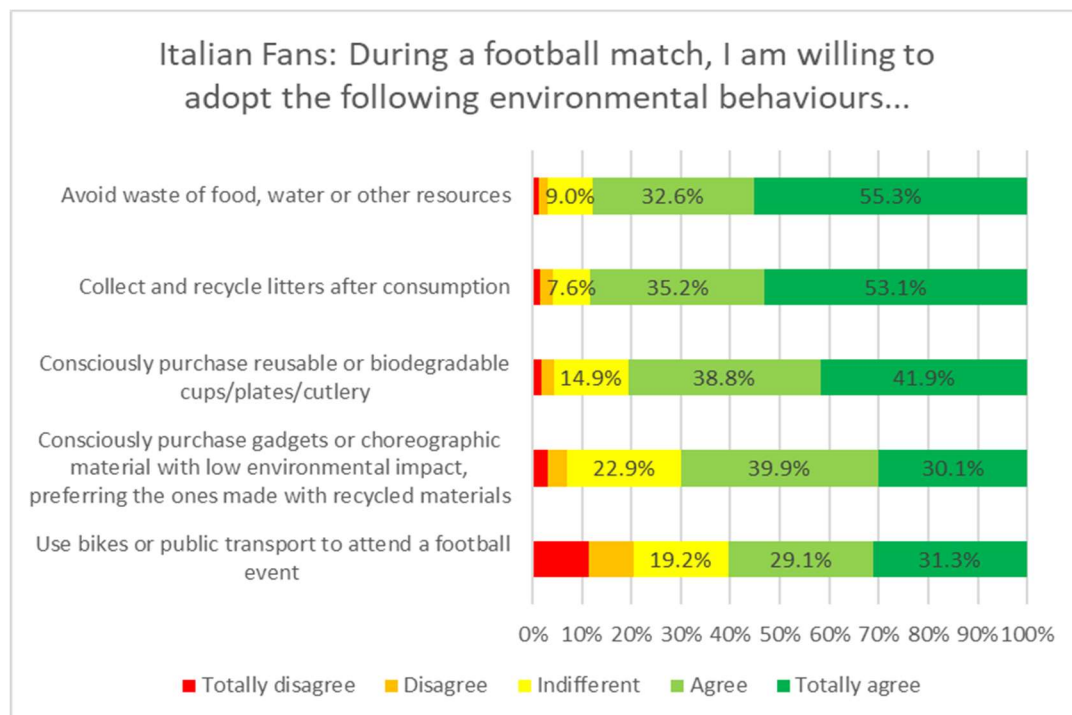


Figure 24 - Italian Fans' willingness to adopt environmental behaviours during a football match (n 998, Italy)

There is a bit of distinction in the preferences of supporters from both countries when it comes to adopting pro-environmental behaviours. For supporters in Italy, avoiding waste of wood, water or other resources is the most preferred behaviours that they may adopt during a football match. Whereas, for supporters in Sweden, collect and recycle litters after consumption is the most preferred behaviours.

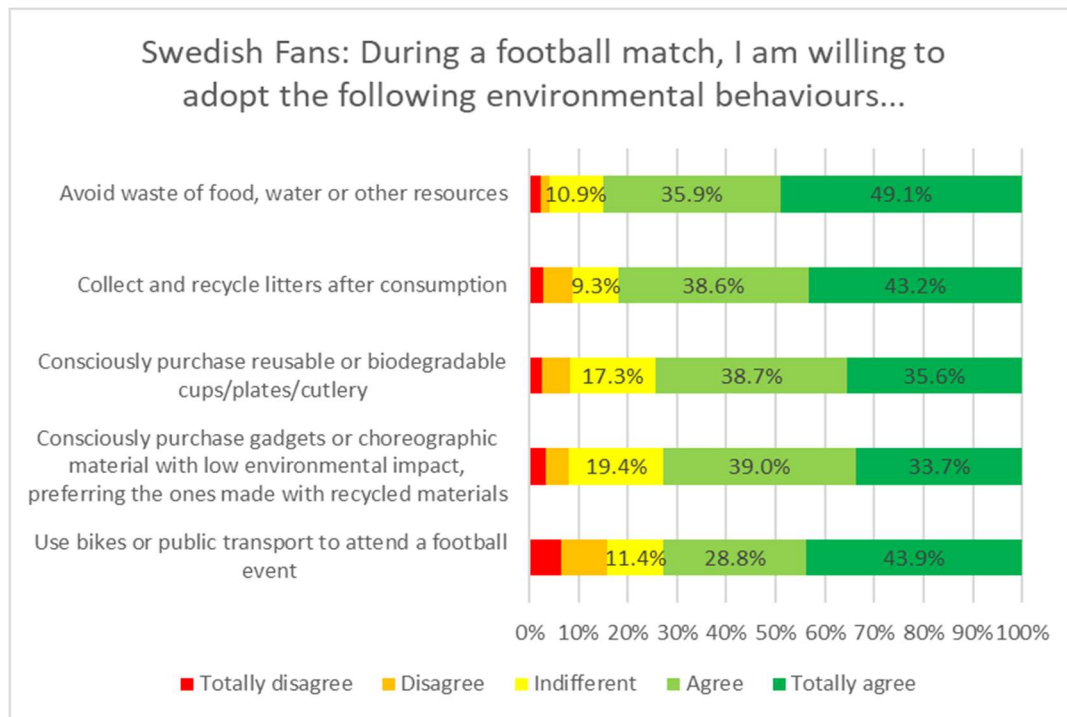


Figure 25 - Swedish Fans' willingness to adopt environmental behaviours during a football match (n 425, Sweden)

Around 88% and 85% of respondents from Italy and Sweden respectively agree or totally agree that they are willing to avoid waste of food, water or other resources. Around 88% and 82% of respondents from Italy and Sweden respectively agree or totally agree that they are willing to collect and recycle litters after consumption. Around 73% of respondents from Sweden agree or totally agree that they are willing to use bikes or public transport, while respondents from Italy are bit reluctant to use bikes or public transport to attend a football match. Simply put, only 60% of respondents from Italy agree or totally agree that they are willing to use bikes or public transport to attend a football match.

5.2 Fans' perception of their contribution to improving the sustainability of football events

The behavioural intentions of supporters can be strongly influenced by their perception of their own ability to protect the environment through their personal actions. Likely, even if a football fan possesses strong environmental values, he/she would be demotivated to translate its values into concrete actions if he/she does not perceive to be able to personally contribute to environmental protection through its behaviours. Thus, assessing the level of such perception may indicate where it is convenient to intervene through targeted environmental campaigns, in order to fill the attitude-behaviour gap, by persuading supporters of the importance of their personal behaviours during football matches.

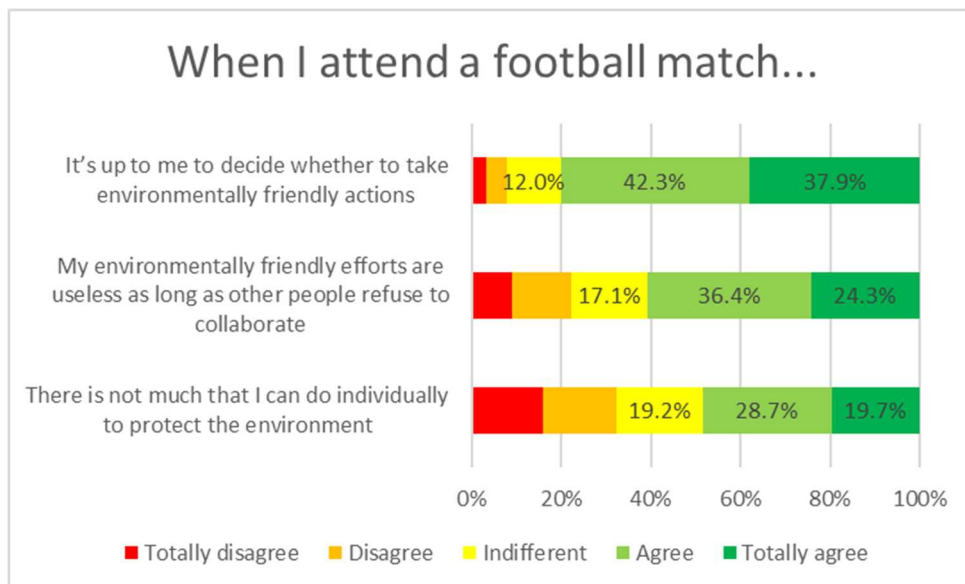


Figure 26 - Fans' perception on the contribution that they can give to the sustainability of football events
- part 1 (n 1352)

The responses collected do not present similar results. In particular, 80% of supporters agree or strongly agree to have freedom in deciding whether to take environmentally friendly actions, however only 1/3 of supporters disagree or strongly disagree on the statement “there is not much I can do individually to protect the environment”. This means that supporters believe to have the possibility to adopt individual environmentally friendly actions, but they do not perceive that those individual actions can strongly benefit the environment.

The first managerial implication is that, if sports managers committed towards environmental sustainability desire to promote environmentally friendly behaviours among their fans, they should focus on communicating the contribution that each person can individually give to tackle environmental issues, such as climate change, air and water pollution. Thus, increasing the

perceived effectiveness of individual actions taken by supporters may fill the attitude-behaviour gap.

Also, more than 60% of supporters agree or strongly agree with the fact that their “*environmentally friendly efforts are useless as long as other people refuse to collaborate*”. The power of taking collective action in solving environmental issues is perceived by many respondents as crucial, highlighting the social dimension of these problems.

As seen in the previous chapter, among the various actors that can trigger positive change, supporters’ favourite football clubs are certainly the most appropriate for two reasons. Firstly, their visibility in newspapers, TVs and social media is very high, allowing to reach most supporters in different ways. Secondly, the emotional connection and the identification of supporters with their favourite team can facilitate a process of acceptance and emulation of environmentally friendly behaviours. The following table illustrates the results of assessing the supporters’ perception on the contribution that they can give to the sustainability of football events in the case their favourite football club implement sustainable initiatives.

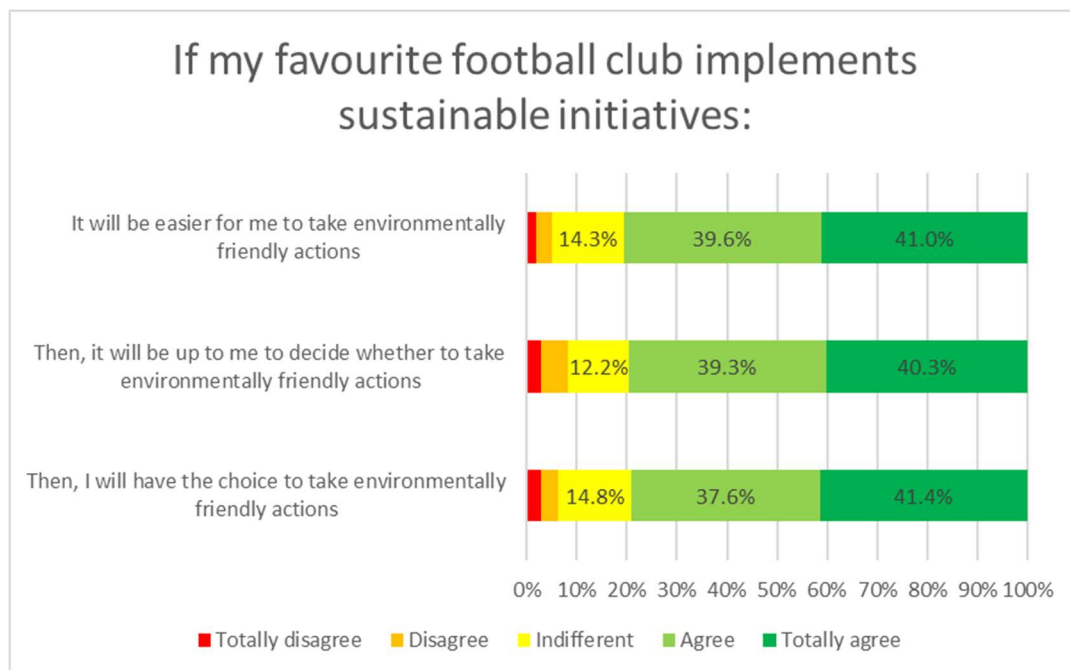


Figure 27 -Fans' perception on the contribution that they can give to the sustainability of football events - part 2 (n 1348)

If combined with the findings of the previous table, these results may signal that the difficulties of supporters in acting in an environmentally responsible way during sport events may be associated with a lack of commitment by their favourite football clubs towards sustainable initiatives. The results are similar for all the questions that have roughly the same meaning. More than 80% of

supporters believe that “*it will be easier for me to take environmentally friendly actions*” if their favourite football club implements sustainable initiatives, as well as to have the choice to take environmentally friendly actions and to decide whether to take environmentally friendly actions. Implications for football clubs and sports organisations are straightforward. Implementing sustainable initiatives is in itself positive for those organisations who want to be environmentally responsible. Also, it is important to effectively communicate the environmental initiatives performed and their positive outcomes, in order to promote sustainable behaviours among supporters and to influence them to turn their behavioural intentions into actual behaviours.

6 Football supporters' mobility

6.1 Mobility survey and sample characteristics

This project also aims to understand the mobility patterns of football supporters, in order to identify which measures can be adopted and developed to support eco-friendlier mobility. For this purpose, another survey was carried out on 21 February 2020 during a match of Spanish Liga between Real Betis and Mallorca. It was the 241st match (matchday 25) of La Liga Season 2019-2020 (La Liga Santander) held at Benito Villamarín stadium in Seville, Spain. This match was ended at a score of 3-3 despite the strong efforts of both teams to win the match. The Benito Villamarín stadium is a home stadium of Real Betis and has a capacity for 60,720 supporters. However, this particular match was attended by 47,231 supporters.

Real Betis Balompié, one of the oldest football clubs in Spain, was founded in 1907. The club was granted an honorary title “Real” in 1914 by King Alfonso XIII. This club not only enjoys its rich history but also has been focusing on sustainability, installing sustainable solutions in their home stadium. Real Betis Balompié has more than 50,000 active members.

This survey was organized by Real Betis Balompié and a total of 208 football supporters participated in it. As in the other survey, the sample is mainly composed of young male adults, around 68% of respondents are male while 32% are female (Figure 28). It is worth noting that over 62% of respondents are under the age of 34, of which 33.2% are between the age of 15 to 24 while 29.3% are between the age of 25 to 34.

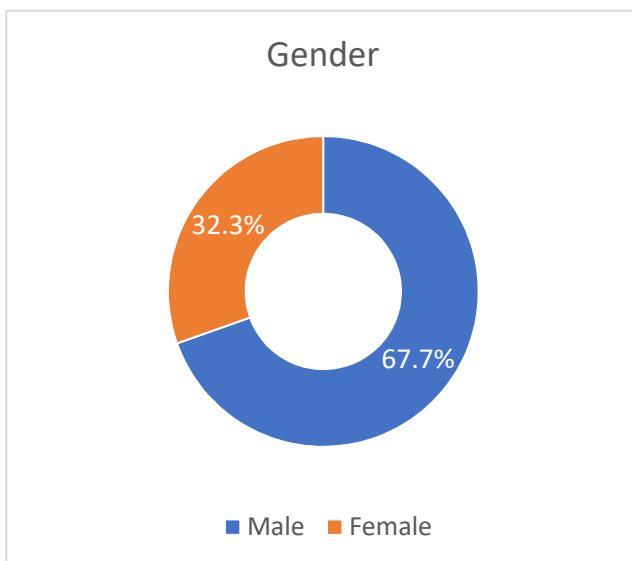


Figure 28 - Gender of respondents (n 195)

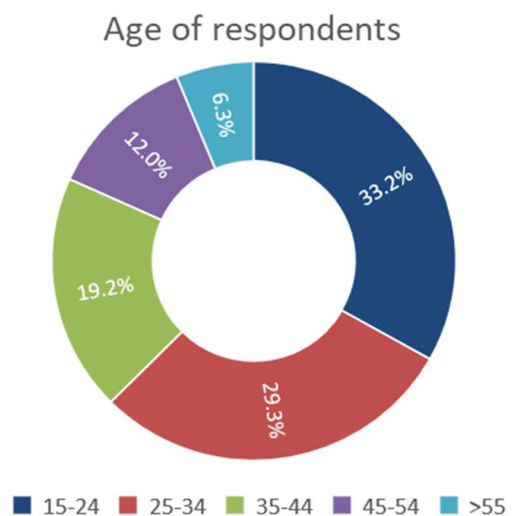


Figure 29 - Age of respondents (n 208)

Next to these two age groups, 19.2% of respondents are between the age of 35 to 44 while 12% of respondents are between the age of 45 to 54. Only 6.3% of respondents are over 55. (Figure 29).

With regard to the level of education, most of the respondents are well-educated. Indeed, around 43% of respondents have completed university education, of which 28.3% hold a bachelor’s degree and 14.6% hold a master’s degree. Also, over 38% of respondents have completed their high school education. In contrast, around 15% have completed middle school while 4% have just completed their elementary school education (Figure 30). In short, most respondents are well-educated youngsters who might be more sensitive to environmental issues. Thus, the obtained results (perceptions of supporters) of this survey could be really valuable to design effective measures regarding the mobility of supporters.

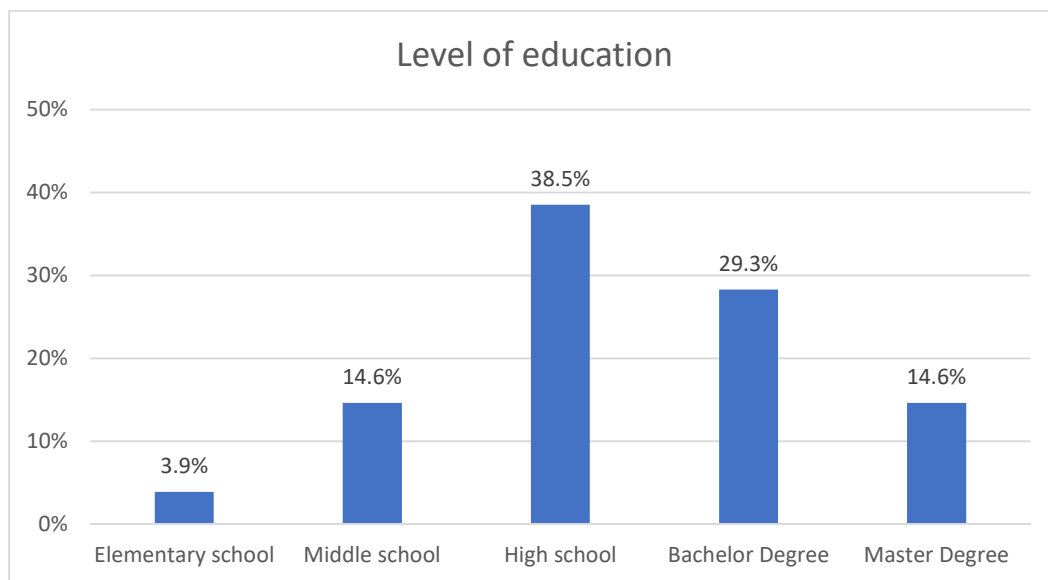


Figure 30 - Level of education (n 205)

Most of the respondents come to the stadium from nearby locations. Indeed, 54% of respondents travel the distance around 0 - 15 km to reach the stadium, of which 14.6% are residents on a distance of less than 5 km while 39.5% are residents on a distance between 5 to 15 km from the stadium. However, to reach the stadium, around 46% of respondents travel the distance between 16 km to above 100 km. More specifically, 27.3% travel 16 to 30 km, 8.8% travel 31 to 60 km, 3.4% travel 61 to 100 km, and 6.3% travel above 100 km. These figures are surely significant in terms of the environmental impact due to the mobility of supporters (Figure 31).

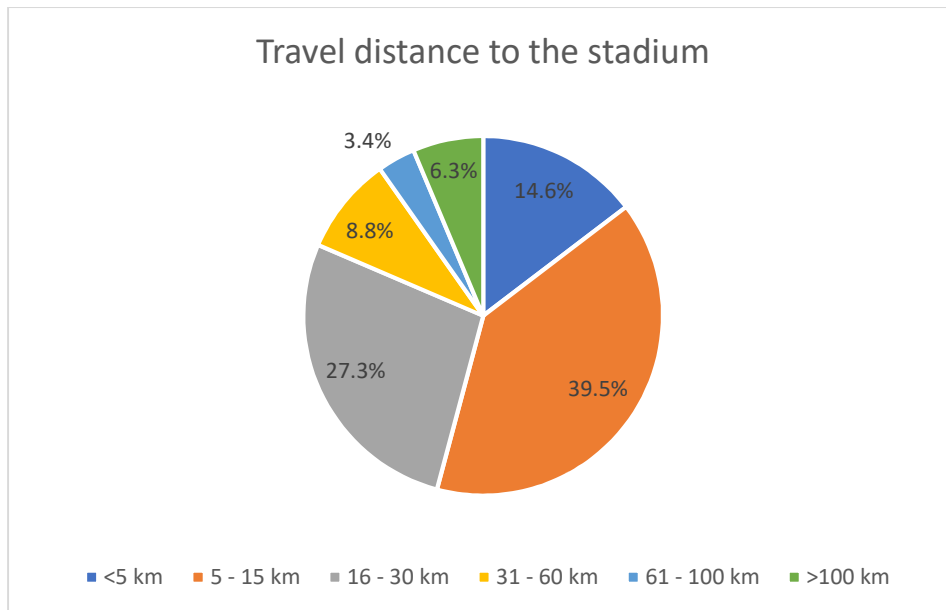


Figure 31 - Travel distance to the stadium (n 205)

It is also worth noting that 85% of respondents travel to the stadium more than 5 times in a year (Figure 32): this means that the results are more generalizable because they are related to people that often attend matches. Suppose that half the capacity of this stadium, that is about 30,000 supporters, go to the stadium 5 times in a year covering a distance between 16 and 100 km, it is evident that the resulting environmental impact is significant.

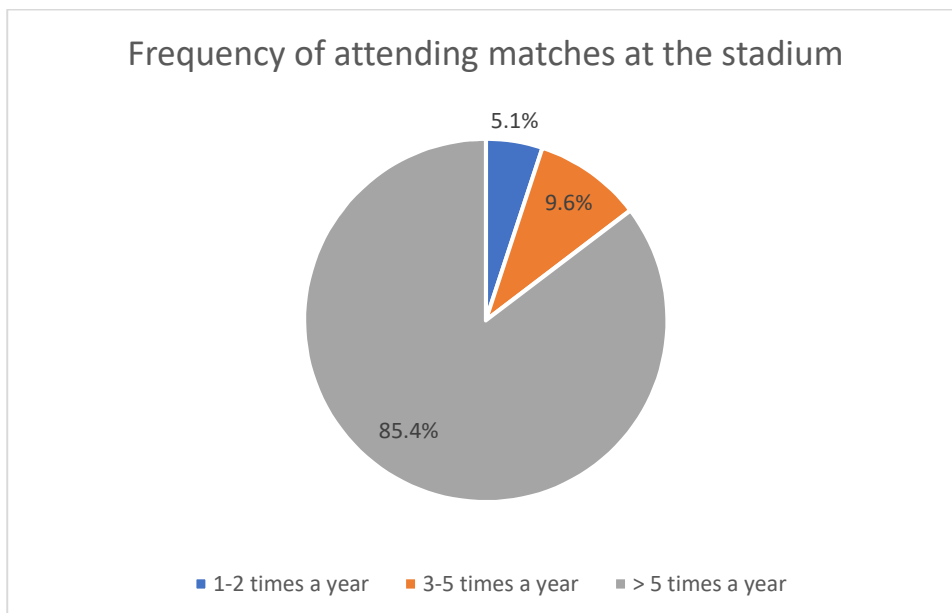


Figure 32 - Frequency of attending matches at the stadium (n 198)

6.2 Mobility patterns of football supporters

In this survey, respondents were specifically asked about how they travel in daily life and how they travel to the stadium. It emerged that the most frequent means of mobility are private cars and public transport irrespective of the occasion. In daily life, over 65% of respondents often use cars and around 34% of respondents often use public transports. Over 25% of respondents often prefer walking, around 14% of respondents often use car-sharing, and only 8% of respondents often use bicycles (Figure 33).

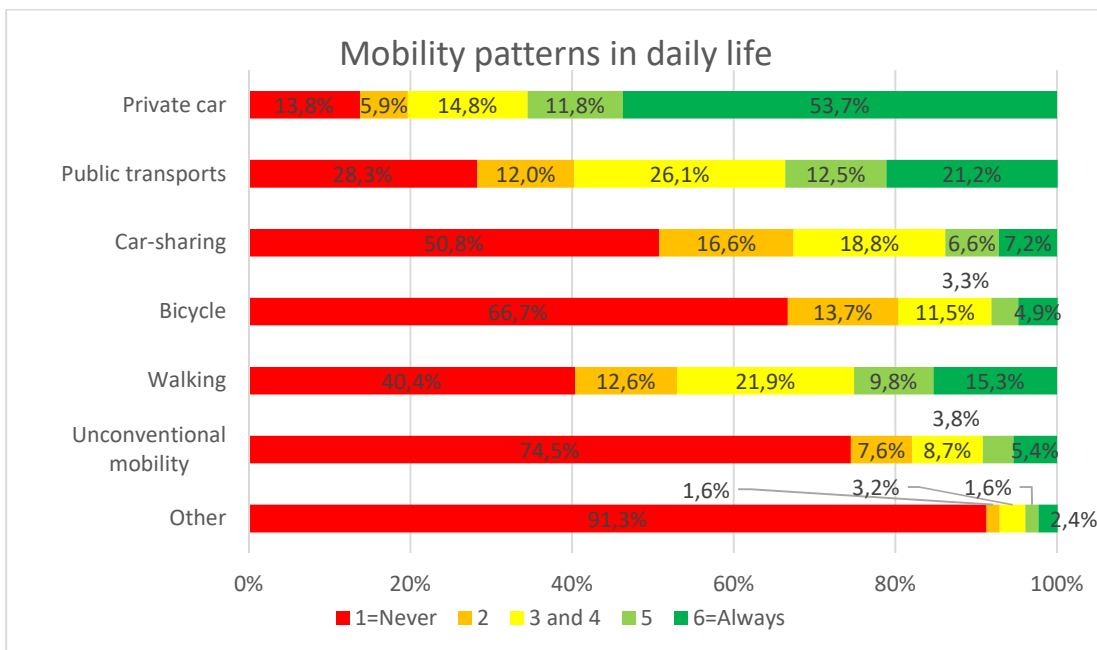


Figure 33- Mobility patterns in daily life (n 203)

When they travel to the stadium, over 65% of respondents often use cars and around 30% of respondents often use public transports. Over 19% of respondents often use car-sharing and around 13% of respondents often prefer walking. However, only 3% of respondents always use bicycles when they travel to the stadium (Figure 34).

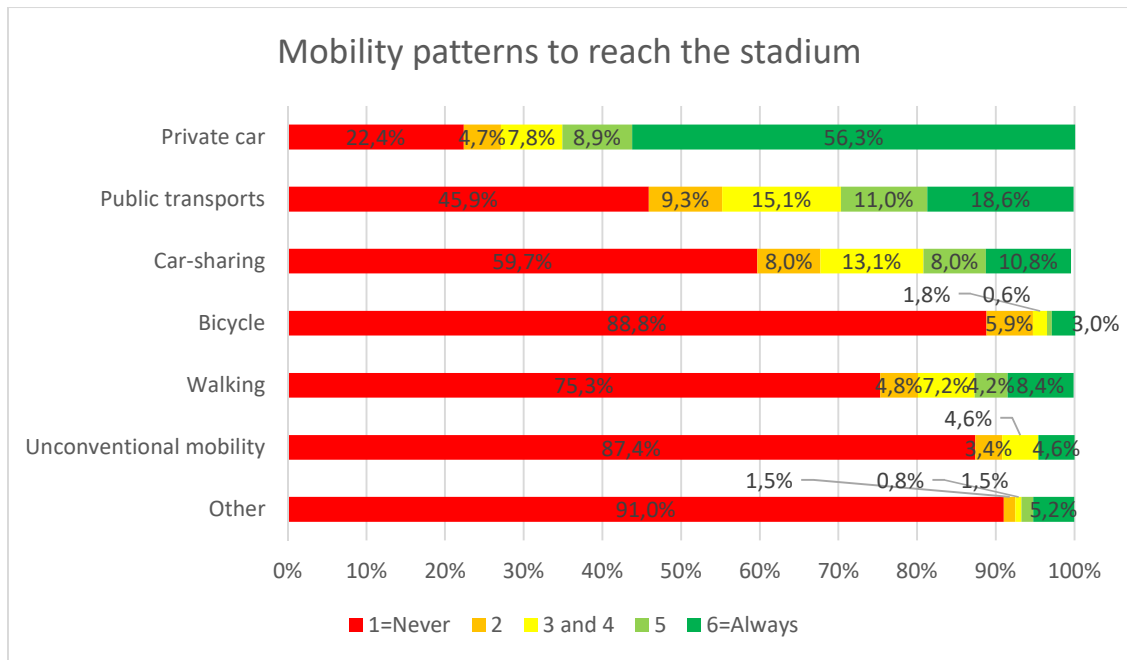


Figure 34 - Mobility patterns to reach the stadium (n 192)

It is worth noting that Seville city has around 160 km (100 miles) of separated bike lanes which are often protected from cars by a kerb and fence (Figure 35).

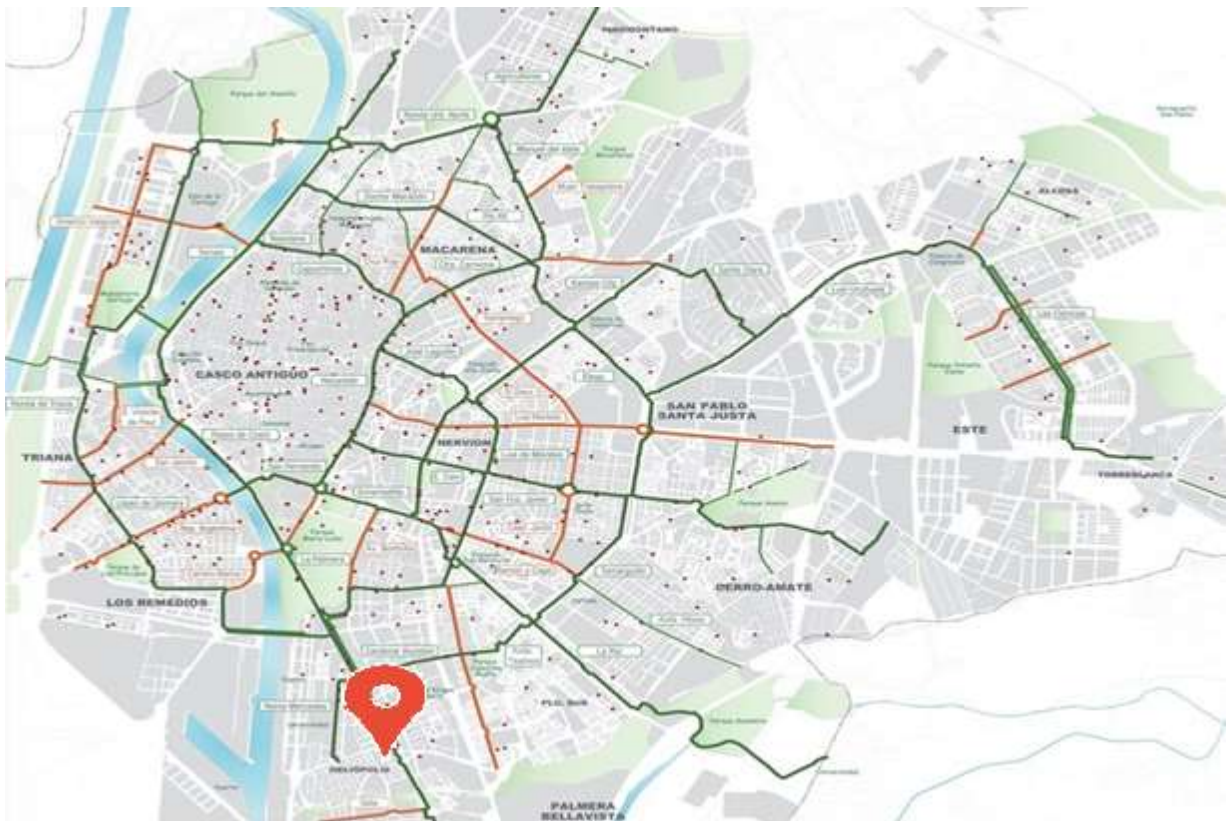


Figure 35 - Seville city infrastructure of bike lanes
(source: <https://www.mobilemaplets.com/showplace/12199>)

Most of the respondents never use bicycles when they travel to the stadium to attend a football match, although the stadium is just 14 km from Seville Airport and 5 km from Santa Justa Station (Figure 36).

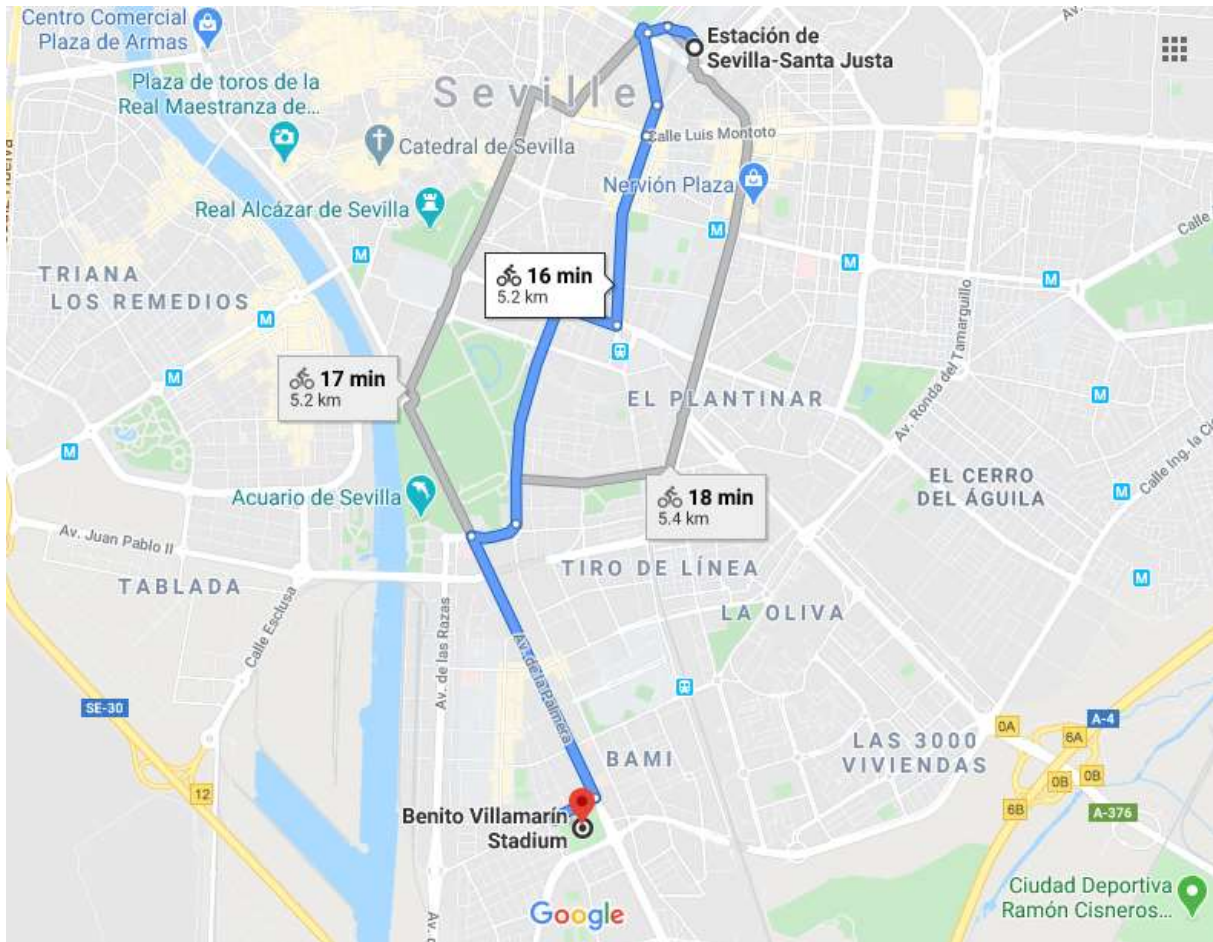


Figure 36 - Cycling route from Santa Justa Station to Benito Villamarín Stadium
(source: Google maps)

The more frequent use of private cars or the less frequent use of bicycles implies a higher environmental impact. As a matter of fact, respondents use private cars to reach the stadium most often in comparison to their daily life mobility patterns (+2.6%). Indeed, 56.3% of respondents always use private cars when they travel to the stadium. This is a bit higher compared to the case of daily life. Even though a significant number of football supporters come from nearby locations, only 3% of respondents (football supporters) always use bicycles when they travel to the stadium. This is a bit lower compared to the case of daily life (-1.9%). Also, public transport or walking is considerably less preferred to reach the stadium. In short, most of the football supporters do not have eco-friendly mobility patterns.

6.3 Perceptions about bicycles

This survey shows that around 55% of the respondents often encounter difficulties in finding a parking lot when using a private car. In contrast, only around 6% of the respondents often encounter such difficulties when using a bicycle (Figure 37). Although this should be a discouraging factor, yet football supporters prefer to use a private car.

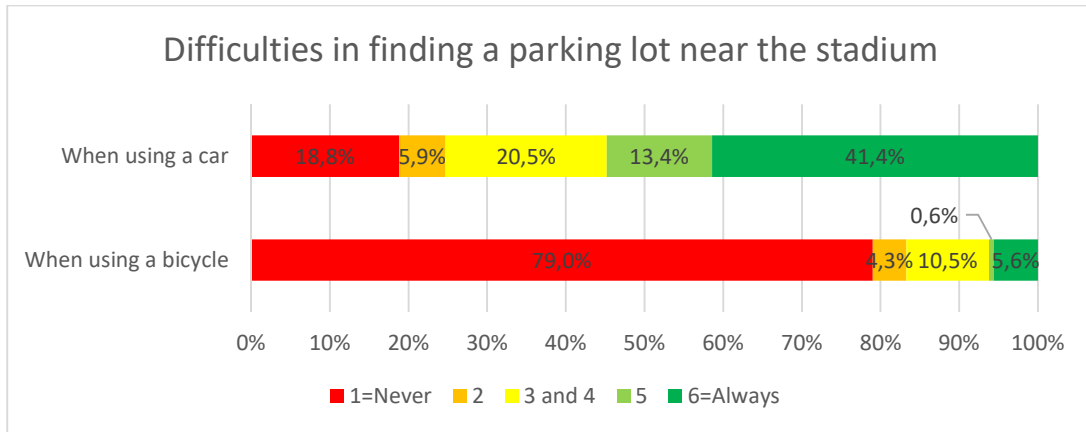


Figure 37 - Difficulties in finding a parking lot near the stadium (n 186)

Most of the respondents have positive perceptions about riding bicycles. In particular, around 45% of respondents think that riding a bicycle is safe, around 66% of respondents think that riding a bicycle is cheap, and around 80% of respondents agree that riding a bicycle is surely eco-friendlier (Figure 38). However, only 40% of respondents consider that riding a bicycle is comfortable. In other words, a significant number of football supporters perceive that riding a bicycle to reach the stadium is uncomfortable.

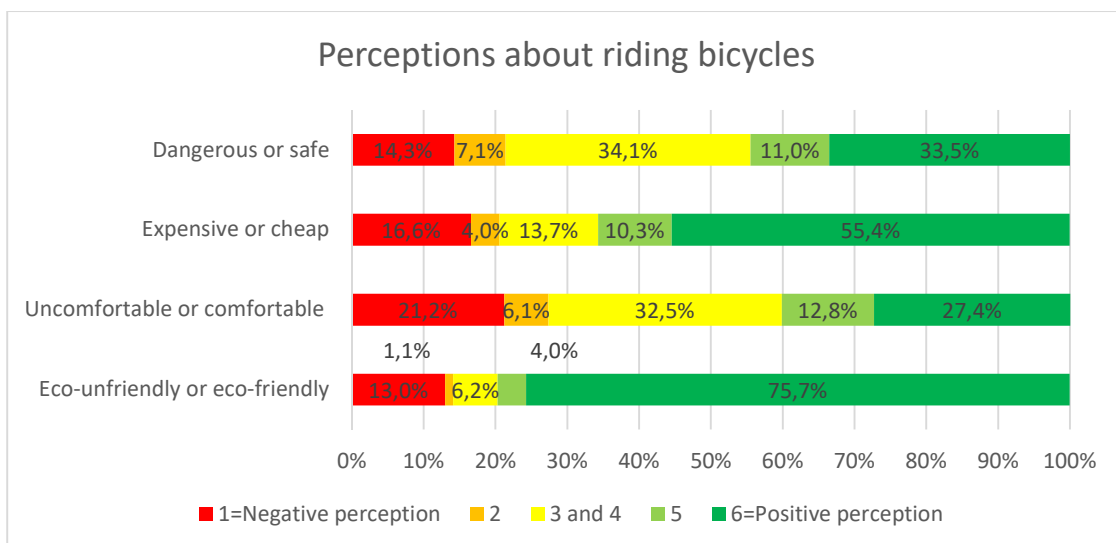


Figure 38 - Perceptions about riding bicycles (n 182)

6.4 Barriers of bicycling and potential solutions

This survey revealed that most football supporters are youngsters who believe that riding bicycles is eco-friendlier. Yet they do not usually use bicycles to reach the stadium. Therefore, it is important to know what hinders football supporters from using bicycles to reach the stadium. In this regard, this survey highlights some factors. Around 55% of respondents indicated that they do not use bicycles because the stadium is located very far from their homes. It is worth noting that around 39% of respondents indicated that they are concerned about the security and safety of their bicycles. They perceive that their bicycle can be stolen during a football match or they may not find a safe parking lot. These two reasons are very important due to which a significant number of football supporters do not prefer to use bicycles when traveling to the stadium. There are also other reasons, though not prominent, due to which football supporters are often reluctant to use bicycles (Figure 39).

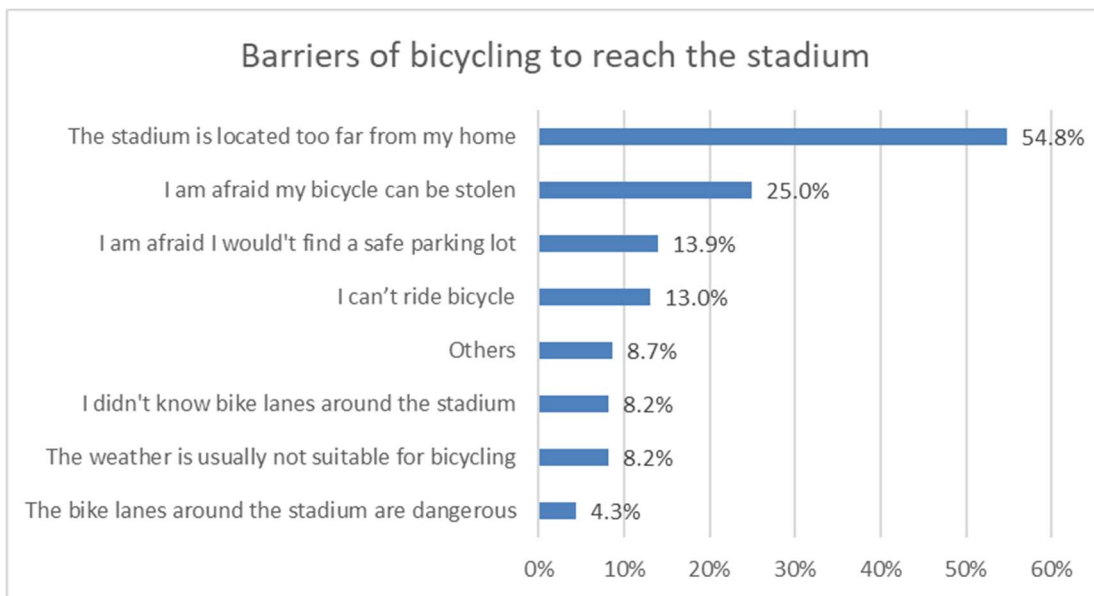


Figure 39 - Barriers of bicycling to reach the stadium (n 208)

This survey revealed that if appropriate measures are taken then football supporters may use bicycles to travel to the stadium. In short, some measures such as installing bike racks, installing video surveillance cameras, and paving safe bike lanes from the city center to the stadium may promote riding bicycles which will consequently alleviate the environmental impacts of football matches (Figure 40).

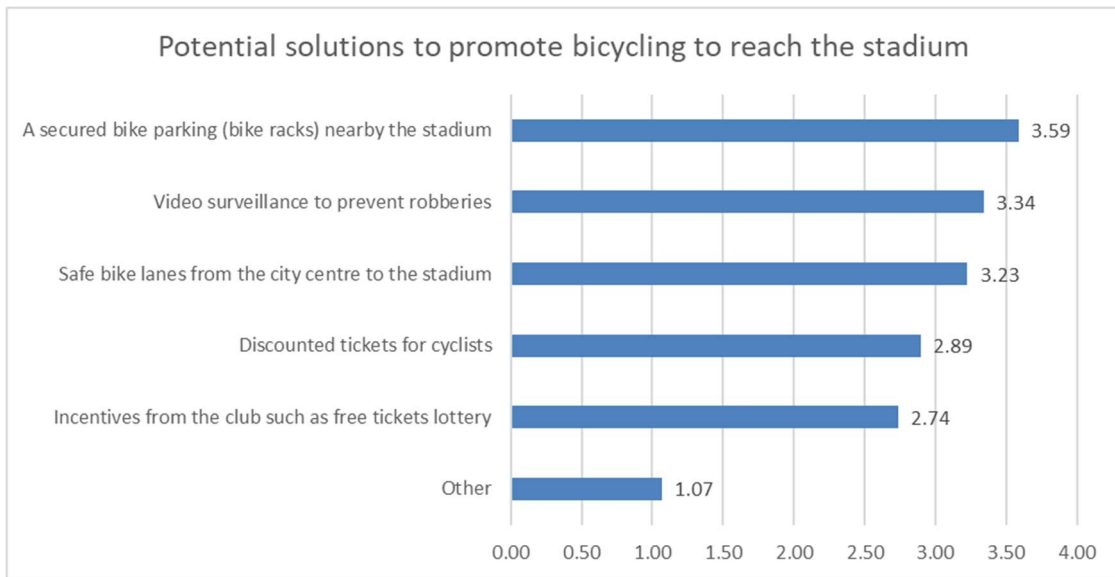


Figure 40 - Potential solutions to promote bicycling to reach the stadium (n 208)

7 Conclusions

Our study reveals that football supporters show environmental attitude and values and recognize that environmental protection is an important issue. They also think that they have a good level of knowledge and understanding of the main environmental issues (e.g. climate change, waste etc.) and that they are capable to effectively recognize greener products and to properly carry out separate waste collection.

As such, they believe that even the football world should account and take action to protect the environment and limit its own adverse impacts. However, when asked to indicate who are the subjects that should take action to promote a direct commitment by the football world, supporters indicate the International Federations (FIFA and UEFA) and Public Authorities whereas the role of stadium managers and Clubs is perceived as significantly less relevant. Now, if it is sure that International Federations and Authorities can give a starting input to address environmental issues, however, who is really in charge of important decisions relating stadium management and supporters' sensitization are stadium managers and Clubs, respectively. It is thus important that these subjects recognize their important role in pushing towards a more environmentally friendly football world.

Furthermore, supporters declare that they would be happy to attend a match that is managed sustainably.

However, supporters show to have a biased perception of what are the most relevant impacts on the environment due to a football match. In fact, the most relevant issue is identified with waste and plastic usage. The indirect impact of CO₂ emissions produced by supporters' mobility, is perceived as only the fourth more impactful issue and energy and water consumption, are the less important in supporters' perception. There is a clear misalignment between the real impacts of football matches, that are huge especially in relation to energy and water consumption and to CO₂ emissions derived from supporters' mobility and supporters' perception about it.

This interpretation might partially explain why, when asked about the which actions they would be willing take during matches to reduce their own environmental impacts, they enlist waste prevention and separate waste collection as the most relevant ones whereas the usage of public transport or bikes is the less chosen option. Finally, supporters believe to have the possibility to adopt individual environmentally friendly actions, but they do not perceive that those individual actions can strongly benefit the environment. Thus, there is the need to communicate and explain the contribution that each supporter can individually give to tackle environmental issues during matches to encourage their pro-environmental behaviour.

If we look more specifically at supporters' mobility patterns, the results of the second survey show that they usually opt for the use of private cars instead of more sustainable means of transport. The more frequent use of private cars and the less frequent use of bicycles among football supporters surely implies a greater environmental impact. Benito Villamarín, the fourth largest stadium in Spain, is fully equipped with modern facilities. Seville city has sufficient infrastructure to support the use of bicycles, and there are bike lanes that reach Benito Villamarín stadium from various locations within the city, such as the city center, the train station and the airport, as well as from the outskirts of Seville city. With all of this, it is surprising that football supporters who reside in nearby areas often prefer the use of private cars over bicycles.

To encourage football supporters to use bicycles, we recommend the installation of bike racks and video surveillance cameras on the stadium premises to ensure the security and safety of bicycles. In addition, the local government should improve bike lanes (or improve maintenance if bike lanes are damaged) to ensure the ease and safety of cyclists. Finally, Real Betis Balompié should launch an awareness campaign in which famous football players encourage youngsters to use sustainable means of transport such as bicycles or public transport. This combination of efforts would be an effective strategy to encourage a behavioral change among spectators and fans, and alleviate the environmental impact of football games derived from mobility choices.