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# Motivations and Expectations of Olympic Volunteers: Building a Legacy of Personal Development as a Key Factor for the Success of Sports Mega-Events

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A) conception and design of the study
B) acquisition of data
C) analysis and interpretation of data
D) manuscript preparation
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## Abstract

The scientific breakthrough in understanding the role of sports volunteers, as well as the importance of motivation and expectations management in decision-making, has boosted several studies, helping to reinforce the conceptual idea of a sports legacy, especially in relation to the participation and involvement of Olympic volunteers. In this sense, and reinforcing this idea, this study aimed to analyse and measure the perception of sports volunteers regarding the motivations and expectations arising from their participation in the Rio 2016 Olympic Games. The study followed a quantitative-descriptive and inferential methodology, with a validated sample of 828 responses collected through a semi-structured questionnaire adapted from the original VMS-ISE motivation scale. The results point to a reinforcement of the perceived importance and value associated with participation in the Olympic Games that translate into high levels of motivation and satisfaction by most of the volunteers involved. The most valued factors were the feeling of pleasure promoted by the experience, the possibility of personal and professional development, the passion for the Olympic Games, and the passion for sport. The majority of the candidates validated the post-event expectations as having exceeded their initial ones, and 92.0% of the volunteers would participate in a similar event again. The study allows the reinforcement of sports volunteers intentions and expectations, while validating and confirming previous studies on the importance of motivation and personal development in a successful recruitment strategy that fosters regular and consolidated participation of previous volunteers.

**Keywords:** Sports management, volunteer development, sporting events, olympics, sports legacy

## Introduction

The field of scientific research in sports science has grown substantially and globally in recent decades, and is today a very relevant and pragmatic area of science with a broad, deep, and multidisciplinary level of knowledge (Puig, 2016; Biernat & Piątkowska, 2020a; Glebova et al., 2022; Teixeira et al., 2022; Seguí-Urbaneja et al., 2023). This growth, which has been particularly strong in the last decade, both in terms of quality and quantity, enables the understanding of various areas of intervention in sport to be consolidated, not only in relation to a better understanding of the relationship between sport, societies and other organisations (Czupich, 2020; Mestre et al., 2023; Teixeira et al., 2023a), but mainly in understanding humans from different perspectives, realities and contexts (Pietrzak & Tokarz, 2019; Biernat & Piątkowska, 2020b; Biernat et al., 2020).

As a source of scientific interest and study, sport has several areas of observation and analysis that allow many questions to be asked and answers to be found to a variety of important issues in society (Skinner & Engelberg, 2017; Hills et al., 2019; Szczepaniak, 2020; Picamilho et al., 2021). One of the areas that has contributed to a better understanding of the sporting phenomenon on different levels is sports management (Cunningham et al., 2021; Sesinando & Teixeira, 2022; Hammerschmidt et al., 2023). Its consolidation as an academic area of reference has allowed a deep understanding about the various interactions in the structure and organisation of sport in different realities and countries (Lis, 2020; Lis & Tomanek, 2020), finding answers to various conceptual paradoxes (Teixeira, 2019; Sesinando et al., 2022), as well as allowing the development of a deeper knowledge about the actors involved in sports activity in national, regional and international contexts (Teixeira, 2009; Teixeira & Ribeiro, 2016; Sesinando et al., 2023).

The world of sport is diverse and multidisciplinary, as are the responsibilities, objectives, and purposes of those who participate in it, and the contribution of sports management as an academic area of excellence in the definition of high standards of research and results obtained is undeniable (López-Carril et al., 2019).

If we consider the main scientific advances from a global perspective, we see that one of the hot topics with great potential for growth has been the deepening of knowledge on sports mega-events, both in terms of their structure, organisation and main characteristics (Vegara-Ferri et al., 2018; Cerezo-Esteve et al., 2022; Ludvigsen et al., 2022; Reis et al., 2023) and in relation to their different stakeholders (Annear et al., 2019). Among other things, the results obtained in different studies allow a multidimensional analysis of the holding of sporting mega-events and their impacts on society (Barandela et al., 2018). In this sense, it is essential to monitor the evolution and modernisation of societies through new research that increases and differentiates knowledge from different perspectives (Kokolakis et al., 2020; Teixeira et al., 2023b).

Regarding the organisation of a sports mega-event such as the Olympic Games, considered by the international community to be the biggest and most prestigious sporting event in the world (Diop et al., 2022), several studies have been carried out by researchers from different countries in an attempt to better understand this particular reality (Ahn, 2018; Groschl, 2021).

Although different approaches exist, the vast majority has focused on studying the possible sporting, economic and social impacts arising from holding this type of event (González-García et al., 2023). More recent studies have followed research lines that also include concern and interest in its relationship with environmental and sustainability issues at various levels (Radicchi, 2013; Gulak-Lipka & Jagielski, 2020; Salgado-Barandela et al., 2021; Annesi et al., 2023), thus increasing the available indicators when speaking about the Olympic legacy and its effects over time (Koutrou et al., 2016; Thomson et al., 2019).

Within this framework, other lines of thought and research have also emerged that have sought to analyse and identify a wide range of characteristics of the stakeholders involved in the sporting spectacle, particularly in understanding interests, desires, motivations, emotions, and expectations (Vetitnev et al., 2018; Theodorakis et al., 2019; Nagel et al., 2020). The interest in studying these indicators has produced several investigations with the aim of deepening knowledge about spectators, fans, and athletes, among other actors, as well as about the sports volunteers involved in the organization and execution of sports mega-events (Erturan-Ogut, 2014; Dickson et al., 2015; Bańbuła, 2017), in an attempt to identify patterns and behaviors that can contribute to further advances in scientific knowledge on this topic.

Sport is a global phenomenon of masses perfectly validated by the international community, regardless of the economic, social, or cultural context of each geographical region (Hautbois et al., 2020). It is also recognized as a factor that engenders strong emotions, feelings of belonging, belief and unity, which may be revealed in different ways (Moradi et al., 2020). These feelings are present in all expressions of sport, assuming, however, particular relevance and significance when we speak of global sporting events (Holmes et al., 2018).

Events such as the Olympic Games are enormous generators of interest and expectations, mainly because they are events that take place over time, respecting a calendar that occurs every four years (Dubinsky, 2019). The organization of this mythical event creates a unique and particular connection when compared to other large scale sporting events, above all in relation to the anxiety, expectation and deep desire to host the event by the host country and its population, but also for the opportunity to see the best athletes in the world compete against each other in a variety of distinct disciplines (Jensen et al., 2014; Santos, 2019; Kim et al., 2022).

On the other hand, and no less important, it also promotes the interest to contribute, participate and gain new knowledge and skills of thousands of volunteers who seek to be part of the history of each Olympic edition (Oliveira et al., 2020). The desire to be involved and participate in a sports mega-event, as well as the expectation that this experience will allow personal and professional intellectual gains and enrichment, increases motivation and interest when this possibility becomes real.

It is this interest and motivation that has intrigued several researchers from different academic areas, especially regarding the decision-making process, expectations and motivations for their involvement (Wilks, 2014; Bańbuła,

2021). Several researchers have tried to establish, through different lines of research, transversal key points in the better understanding of Olympic volunteers motivations, thus allowing insights from different perspectives as to the main reasons for this desire for participation without economic compensation (Hallmann & Harms, 2012; Bakhsh et al., 2021).

Although it is not yet perfectly conceptualized from the scientific point of view, at the end of the 2000s the first signs and evidence of an idea of legacy arose within the scope of sports volunteer activity, especially regarding participation in the Olympic Games (Koutrou et al., 2016; Doherty & Patil, 2019; Chen et al., 2022). Some researchers have sought to establish a theory that indicates the possibility of a relationship between the interest and motivations of Olympic volunteers in different editions, in order to leverage not only the involvement and regular participation in sporting events, but also to establish guidelines that allow the best candidates to be recruited (Lachance et al., 2021).

One of the objectives of the researchers is that their positioning and analysis may contribute towards the definition of more effective and audacious recruitment strategies positioned in the long term, thus ensuring that sporting organizations have access to tools and knowledge that is differentiated and of exceptional quality. This combination of factors, when well designed, can have an extremely positive impact, not only on the success of each event, but also on the volunteers' perception of a unique and remarkable experience (Kim et al., 2019b; Won et al., 2021).

The relevance of this symbiosis between volunteers and sports mega-events is particularly important if we consider that the planning and execution of events such as the Olympic Games are increasingly complex and varied, requiring multidisciplinary excellence and rigor in execution, planning and organization protocols by individuals who, depending on the task or actions to be performed, need to possess knowledge with different degrees of expertise (Herold et al., 2020). On the other hand, the executive and operational committees have grown little, not keeping up with the necessary logistic and operational capacity to develop their activity without the use of a large number of volunteers (Angosto et al., 2021).

As a result, the role of sports volunteers has gained greater prominence in receny Olympic editions, making their participation essential, not only due to the substantial increase of inherent responsibilities and distinct fields of action, but also due to the fact that these events involve a whole process and execution of highly detailed tasks before and after the event that go far beyond its simple official duration (Groschl, 2021). Without the presence, dedication and commitment of the thousands of volunteers involved, these events simply would not be able to run with the tremendous success we have seen in recent years (Lamb & Ogle, 2019; Won et al., 2021).

However, if there is a pressing need to resort to and use thousands of volunteers to guarantee the success of the event, their recruitment allows a substantial reduction in operating costs (Yoo et al., 2022). In this sense, and with their role being doubly relevant, the recruitment strategies should prioritize not only stimulating the participation of highly motivated individuals, but also seeking to correspond to the expectations and attract those with higher levels of qualification (Alexander et al., 2015).

For this to become a reality and to aspire to an idea of an Olympic legacy in sports volunteering (Doherty & Patil, 2019), it is necessary to continue observing and considering the main reasons that lead thousands of different individuals to seek an experience of this type. The basis of a successful strategy must involve incentives and rewards that are suited to the expectations and motivations of future candidates (Dickson et al., 2014).

It is crucial, therefore, to continue mapping all the dimensions involved in the organization of a sports mega-event. The deeper and wider this knowledge base, the more targeted will be the understanding of the different fields of intervention of Olympic volunteers, while simultaneously allowing identification of the specific areas of action where the most qualified volunteers can make a difference, thus reinforcing their importance in the operational and logistic chain (Alexander et al., 2015; Koutrou & Pappous, 2016).

In events of this dimension, the volunteers develop a vast number of tasks with distinct complexities and demands, but all of them are important, highlighting the accompaniment and support to athletes and technical staff, first aid, competition referees and judges, media, sponsors and partners, political and governmental authorities, technical and logistic multilevel support in different spaces and sports venues, among many others, thus becoming a vital part of the whole Olympic system (Chen et al., 2022; Dickson & Darcy, 2022).

The volume of studies already undertaken about volunteers in different editions of Olympic Games and large-scale sporting events identifies the search for greater knowledge and the acquisition of tools and professional experience as one of the main motivations and desires to be achieved through their participation (Okada et al., 2022).

These outputs explicitly contribute to the idea that, conceptually, a strategy for recruiting Olympic volunteers should prioritize and identify aspects that stimulate regular volunteering by experienced individuals, and with professional curricula that can easily be adapted to a context of multi-level demands (Kim et al., 2019a), while at the same time regenerating the activity through new candidates, who bring expectations and motivations that this experience will be important for their future (Kim et al., 2019b).

Establishing key factors in the development of volunteer programmes is now essential, not only for a specific event, but mainly for the importance of volunteer participation in the continued success of each Olympic edition and its long-term legacy (Sorrentino et al., 2020). The greater the knowledge of the host organisations, the greater the commitment of volunteers and, as such, the greater the excitement, passion, and motivation, resulting in a better experience for all. Volunteers have very clear objectives and want to feel the value of this experience.

As a response to the need to further explore this specific field of Olympic volunteers' expectations and motivations, several authors have developed measurement and analysis scales, such as the STVMS, OVMS, MVS, VMS-ISE, which have enabled many researchers to obtain comparison indicators on the involvement and interest of volunteers in participating in sporting events, especially sports mega-events (Lucidi et al., 2008; Bang et al., 2009; Bang & Chelladurai, 2009; Li et al., 2016; Kim & Cuskelly, 2017).

Olympic volunteers increasingly perform tasks of high responsibility and complexity. This area of study is essential and will continue to develop in order to attract the best volunteer profiles. The impacts and corresponding effects of sports mega-events in the short, medium, and long term are much more than purely economic, social, sporting or cultural; they are also about human development.

The main objective of this study was to analyse a group of volunteers who participated in the 2016 Rio Olympic Games, in an attempt to establish and identify the main motivations and expectations that led them to make the decision to volunteer, as well as to assess their perception and recognition of the importance of the event in their personal and professional development and degree of satisfaction after the conclusion of the Olympic Games.

Based on these presuppositions and wishing to contribute to the study of Olympic legacies, we have posed three questions that will allow us to reinforce the existing knowledge, thus establishing a comparison not only in relation to the past, but mainly for future studies. The three starting questions are the following:

**Q1:** Is the Olympic experience perceived by volunteers as important in personal and professional enhancement and development in an unequivocal way?

**Q2:** When the Olympic experience is perceived as positive for volunteers, does it increase their interest and desire to repeat it again?

**Q3:** Is there a common pattern regarding the expectations and motivations of volunteers to participate in the Olympic games, regardless of gender, age and academic qualifications?

# Methods

The study followed a quantitative-descriptive approach, using descriptive and inferential statistical methods and techniques for data analysis and treatment.

We set out to collect primary data based on the original 29-item motivation scale validated by Bang, Alexandris and Ross (2008), i.e., the Motivation Scale of International Sporting Events (VMS-ISE), which was translated not only into the official language of Brazil (Brazilian Portuguese), the host country, but also had the questions adapted to the social context and culture for better interpretation and familiarization with the research content and purpose.

**Research design and participants**

The purpose of the research was to develop an investigation within the scope of Olympic studies and sports volunteering, exploring for this purpose the motivations and expectations of the Olympic volunteers involved in the 2016 Rio de Janeiro Olympic Games.

According to official data from the International Olympic Committee (IOC) and Brazilian Olympic Committee (COB), over 50,000 candidates were registered. However, and since the effective number of volunteers involved in this edition was not made available, it was necessary to explore and define what the population under study would effectively be.

In order to guarantee the reliability of data, as well as the maximum possible number of responses from the volunteers involved, we approached the Brazilian Olympic Committee to ascertain the availability of vital information for the successful conclusion of our research. We directly contacted the COB to assess the possibility of accessing information on the number of volunteers involved, as well as officially registered email contacts. This request also contained a detailed description of the researchers, their affiliations, and the purpose and objectives of the research.

After this first contact and having ensured that we followed the international ethical standards by which official scientific and academic research is governed, as well as safeguarding the confidentiality and secrecy of the information provided, we obtained the email contacts registered and validated by the COB, which was the only information provided regarding the personal data of each volunteer. This fundamental support allowed us to reach a population of 25,241 volunteers officially validated and registered by the COB.

After identifying the population under study, we began the process of primary data collection through a questionnaire. This collection occurred in the post-event period and was made available online to ensure its quick and efficient dissemination. Participants were informed in detail about the origin and objectives of the study, as well as the

proper explanations for its correct completion, where we emphasized the total confidentiality of their participation.

Once the questionnaire was disseminated by email and after establishing a period of four months to close the collection and start the analysis of the results, a total of 828 validated questionnaires were received, representing the research sample. The response rate was around 5%. The low response rate may have been related to the fact that many of the email contacts were incorrect. Nevertheless, we obtained a high number of responses, supporting our claim to the relevance of the research.

**Instrument**

As previously mentioned, over the last few years, several questionnaires and evaluation scales have been validated and used with sports volunteers. Concerning the assessment of volunteers' motivation, satisfaction and expectations in particular, there are several assessment scales that allow the collection of indicators easily comparable with the results of other studies. In this sense, various possibilities were assessed, and we chose an adaptation of the Motivation Scale of International Sporting Events (VMS-ISE), validated by Bang, Alexandris and Ross (2008).

This evaluation scale comprises a total of 29 questions which allow the motivation of sports volunteers to be assessed in seven different dimensions, based on a Likert-type response scale of seven levels, where option one means "highly disagree" and option seven "highly agree". However, having assessed its use in a specific sociocultural and multivariate context, and being aware of the need to translate and adapt the content to the specific objectives of our study, we decided to keep the initial 29 questions, but divided them into five dimensions instead of the initial seven.

Regarding the response scales, we kept the seven Likert-type response levels, only adapting the meaning of each level, i.e. level one now meant "not very important" and level seven "very important". The translation of the different response items also had to be framed and translated so as to facilitate the understanding of what was being asked, considering that there was a high probability of participants from different social backgrounds, as well as having different levels of knowledge and intellectual dexterity.

In this sense, and after due analysis and prior assessment, the data collection instrument was made available online through the Google Forms platform. In total, the questionnaire contained 37 questions divided into two parts. The first part consisted of five questions used to identify the socio-demographic profile of the volunteers and three questions to verify any previous experience in similar participations. The second part of the questionnaire contained the remaining 29 questions adapted from the VMS-ISE, in order to assess different indicators (development and personal and professional satisfaction) internally related to motivation, satisfaction and expectations arising from their lived experience.

Finally, and no less relevant, it should be noted that the questionnaire had the necessary information about the purposes of the study, as well as what was intended in each response field. No personal data identifying the participants were collected, safeguarding the confidentiality of the answers, as well as the rules of ethical conduct of reference in the field of research and science of the American Psychological Association (APA) and the standards set out in the Declaration of Helsinki.

**Data analysis**

The data collected was analysed using SPSS 25, where, following a quantitative-descriptive and inferential methodology, inferential statistical methods and techniques were used to compare results between groups and determine the ability to find answers to the initial research questions, while measures of dispersion and central tendency were used, namely the mean, standard deviation and absolute and relative frequencies in the descriptive analysis of results.

Regarding the techniques used in the inferential analysis, it was firstly defined that the level of significance to reject the null hypothesis would be $\leq .05$. Following this, we resorted to the use of three techniques – we used Student's t-test for independent samples, as well as for a sample, in order to ascertain and compare results between groups according to the hypotheses proposed, and then the One-way ANOVA test was used to check for differences between the means of two different groups or populations.

As regards the assumptions of the tests used, and as an integral part of this type of statistical analysis, we used the Shapiro-Wilk test to assess the normality of the distribution and Levene's test to assess the equality of variances. In the case of distribution normality, this was accepted according to the assumptions of the central limit theorem whenever the sample was larger than 30. As regards the equality of variances, Student's t-test and/or One-way ANOVA with Welch correction were used when this was not met.

# Results

**Sociodemographic profile of the volunteers**

As shown in Table 1, the study sample (n=828) was mainly comprised of female volunteers (n=445), corresponding to 53.7% of participants, with male volunteers (n=383) representing the remaining 46.3%. Regarding the age group with greatest representativeness, we found

that the vast majority were aged 16–35 (63.4%), with the 16–25 (n=319) and 26–35 (n=206) groups representing 38.6% and 24.8% of the sample, respectively.

**Table 1.** Sociodemographic profile of volunteers in the Rio 2016 Olympic Games

| | N | % |
|---|---|---|
| Gender | | |
| Female | 445 | 53.7 |
| Male | 383 | 46.3 |
| **Total** | **828** | **100.0** |
| Age | | |
| 16–25 | 319 | 38.6 |
| 26–35 | 206 | 24.8 |
| 36–45 | 134 | 16.2 |
| 46–55 | 103 | 12.4 |
| >55 | 66 | 8.0 |
| **Total** | **828** | **100.0** |
| Marital status | | |
| Single | 550 | 66.4. |
| Married | 216 | 26.1 |
| Divorced | 51 | 6.2 |
| Widow(er) | 11 | 1.3 |
| **Total** | **828** | **100.0** |
| Academic qualifications | | |
| Basic Education | 29 | 3.5 |
| Secondary Education | 186 | 22.5 |
| Bachelor's Degree | 563 | 68.0 |
| Master's Degree | 39 | 4.7 |
| PhD | 11 | 1.3 |
| **Total** | **828** | **100.0** |
| Continent of origin | | |
| America | 783 | 94.6 |
| Europe | 31 | 3.7 |
| Africa | 7 | 0.8 |
| Asia | 6 | 0.7 |
| Oceania | 1 | 0.1 |
| **Total** | **828** | **100.0** |

As regards marital status, the most representative group of volunteers was "single" (n=550) with 66.4%, followed by "married" (n=216) with 26.1% of the sample. It was also possible to verify that the majority of volunteers had academic qualifications at Bachelor level (n=563) representing 68.0%, followed by the group with only secondary education (n=186), representing 22.5% of the volunteers.

Finally, and in relation to the origin of the volunteers, we can verify that most of them were from the American continent (n=783), representing 94.6% of the sample, followed by volunteers from the European continent (n=31), representing 3.7% of the participations. In conclusion, volunteers participating in the 2016 Rio de Janeiro Olympic Games came from 35 different countries, and 90.1% of the sample originated from the host country itself, i.e. Brazil.

**Volunteer experience and motivations**

Considering that this investigation aimed to deepen and strengthen the study of Olympic legacies in sports volunteering, we tried to assess the existence or not of previous experience in this type of involvement among the participants, as well as the main reasons and/or motivations for their application.

According to the results obtained, Table 2 shows that most volunteers (n=434) had no previous experience in volunteering, corresponding to 52.4% of the sample. As regards the 394 volunteers who had previous experience as volunteers (47.6%), it should be noted that the majority (n=238) indicated that they already had experience as sports volunteers, corresponding to 28.8% of this group, while the remaining (n=156) identified their experience as not being within the scope of sporting events, corresponding to 18.8%.

**Table 2.** Experience and motivations of volunteers at the 2016 Rio Olympic Games

| | N | % |
|---|---|---|
| **Previous experience** | | |
| No | 434 | 52.4 |
| Yes | 394 | 47.6 |
| **Total** | **828** | **100.0** |
| **Type of event** | | |
| Sporting Events | 238 | 28.8 |
| Non-sporting Events | 156 | 18.8 |
| Not applicable | 434 | 52.4 |
| **Total** | **828** | **100.0** |
| **Motive for volunteering** | | |
| Pleasure | 166 | 20.0 |
| Improving the curriculum | 141 | 17.0 |
| Passion for the Olympic Games | 139 | 16.8 |
| Passion for sport | 129 | 15.6 |
| Training/Improvement of foreign language | 104 | 12.6 |
| Meeting people | 79 | 9.5 |
| Other | 63 | 7.6 |
| Attend events free of charge | 7 | 0.9 |
| **Total** | **828** | **100.0** |

On the other hand, and in order to verify the expectations and motivations of the volunteers regarding the participation in the 2016 edition of the Olympic Games, we can see that they have identified different reasons and motivations. The three main reasons indicated are pleasure (n=166), the possibility of professional development (n=141), and their personal passion for the Olympic Games (n=139), corresponding to 20.0%, 17.0% and 16.8%, respectively.

Finally, the level of satisfaction and motivation was also assessed regarding the possibility of future participation based on the experience lived in the event, thus reinforcing the possibility of a possible Olympic legacy.

Most volunteers (n=762) indicated that they would participate in similar events again based on their experience and level of satisfaction, corresponding to 92.0% of the total sample.

**Volunteer perception of the experience at the 2016 Rio Olympic Games**

Once the sociodemographic profile was outlined and the main expectations and reasons that led the volunteers to participate in the 2016 Rio Olympic Games were identified, we went on to the second part of the questionnaire, which applied a scale with five dimensions to assess the level of motivation and satisfaction according to different indicators. The adaptation of the VMS-ISE scale (Bang et al., 2008) to the context, reality and purpose of the study enabled an assessment of the importance and value given to participation at various levels according to the perception of volunteers after the event. In Table 3, we can observe that the volunteers were fairly unanimous in their responses in each of the five dimensions. Nevertheless, there are clearly some that stand out for having received a greater evaluation.

With the exception of the dimension related to the perception of factors with the greatest influence after participation, which had evaluations below 5.0 in three response fields, all other fields and dimensions had evaluations above 5.0, which reflects a clear positive assessment in relation to the motivation and satisfaction of volunteers and their perception of the added value in their personal and professional career.

**Table 3.** Perceptions on the experience of volunteers at the Rio 2016 Olympic Games

| | Mean | SD | Minimum | Maximum |
|---|---|---|---|---|
| **Perception of the importance of participation:** | | | | |
| Importance of volunteer work | 5.94 | 1.66 | 1 | 7 |
| Recognition and/or rewards received | 5.36 | 1.86 | 1 | 7 |
| Variety of activities developed | 5.57 | 1.76 | 1 | 7 |
| Enjoyment promoted by the experience | 5.92 | 1.69 | 1 | 7 |
| **Perception of post-event satisfaction:** | | | | |
| Enjoyment promoted by experience | 5.97 | 1.54 | 1 | 7 |
| The experience was positive | 6.22 | 1.49 | 1 | 7 |
| Your contribution was important during the event | 6.05 | 1.53 | 1 | 7 |
| Your participation contributed to the success of the event | 6.09 | 1.52 | 1 | 7 |
| **Perception of the importance of personal development:** | | | | |
| Personal knowledge | 6.00 | 1.58 | 1 | 7 |
| Personal and professional growth | 5.95 | 1.66 | 1 | 7 |
| Multicultural interaction | 6.21 | 1.53 | 1 | 7 |
| Socialisation | 6.19 | 1.54 | 1 | 7 |
| Cultural and anthropological experience | 6.20 | 1.52 | 1 | 7 |
| Making professional contacts | 5.49 | 1.88 | 1 | 7 |
| Making friends | 6.01 | 1.61 | 1 | 7 |
| Taking part in the world's biggest sporting event | 6.24 | 1.60 | 1 | 7 |
| Learning about the organisation of mega events | 6.02 | 1.67 | 1 | 7 |
| **Perception of satisfaction with personal involvement:** | | | | |
| The tasks carried out allowed me to show my worth | 5.19 | 1.93 | 1 | 7 |
| I missed the event after it ended | 6.02 | 1.73 | 1 | 7 |
| Participation was important in my personal development | 5.72 | 1.80 | 1 | 7 |
| I would attend a similar event again | 6.21 | 1.58 | 1 | 7 |
| I am satisfied with the role and tasks assigned to me | 5.67 | 1.82 | 1 | 7 |
| I am satisfied with my performance | 5.92 | 1.68 | 1 | 7 |
| **Perception of influencing factors after participation:** | | | | |
| Personal development | 5.08 | 1.49 | 1 | 7 |
| Greater connection to sport | 4.85 | 1.61 | 1 | 7 |
| Privileges of volunteering | 4.90 | 1.59 | 1 | 7 |
| Positive experience | 4.94 | 1.55 | 1 | 7 |
| Contribution to the community | 5.15 | 1.44 | 1 | 7 |
| Social and cultural development | 5.22 | 1.43 | 1 | 7 |

Legend: 1 - not very important / 7 - very important

Globally, the volunteers identified the most relevant aspects as: satisfaction with the experience (5.92), considering the experience to be positive (6.22), personal development through multicultural interaction (6.21) and the possibility of participating in the largest sport event in the world (6.24). This had a great influence on their personal and professional development, resulting in the feeling that they would like to participate in similar events again (6.21) and that they missed it after their participation (6.02). On the other hand, the post-event evaluations of their participation show that the volunteers gave special importance to the empowerment and appreciation felt as a contribution to the community (5.15), as well as to social and cultural development (5.22).

**Volunteer perception of the experience according to gender**

Once the aggregated data was analysed, allowing us to obtain a general overview in relation to the volunteers' perception and evaluation of their motivation and expectations from participating in the Olympic Games, it was necessary to deepen our knowledge using inferential statistical methods and techniques. With regard to the comparison between men and women, Table 4 shows identical evaluations between genders in 9 out of 29 items, with only occasional differences of 0.01 in 10 out of 20 items, which suggests quite similar levels of satisfaction and motivation.

**Table 4.** Perceptions of the experience of volunteers according to gender

| Factors | Male | | Female | | |
|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | t |
| Importance of volunteer work | 6.6 | .9 | 6.6 | 1.0 | 0.454 |
| Recognition and/or rewards received | 5.5 | 1.9 | 5.2 | 1.8 | 2.068* |
| Variety of activities developed | 5.6 | 1.7 | 5.5 | 1.8 | 0.782 |
| Enjoyment promoted by the experience | 5.9 | 1.7 | 6.0 | 1.7 | -0.600 |
| Enjoyment promoted by the experience | 6.0 | 1.6 | 6.0 | 1.5 | 0.299 |
| The experience was positive | 6.2 | 1.5 | 6.3 | 1.4 | -0.731 |
| Your contribution was important during the event | 6.0 | 1.5 | 6.1 | 1.5 | -0.264 |
| Your participation contributed to the success of the event | 6.1 | 1.5 | 6.1 | 1.5 | 0.358 |
| Personal knowledge | 6.1 | 1.5 | 6.0 | 1.6 | 0.929 |
| Personal and professional growth | 6.0 | 1.6 | 5.9 | 1.7 | 0.484 |
| Multicultural interaction | 6.3 | 1.5 | 6.1 | 1.6 | 1.403 |
| Socialisation | 6.2 | 1.5 | 6.2 | 1.6 | 0.017 |
| Cultural and anthropological experience | 6.2 | 1.5 | 6.2 | 1.5 | 0.052 |
| Making professional contacts | 5.7 | 1.8 | 5.3 | 1.9 | 2.975* |
| Making friends | 6.1 | 1.5 | 5.9 | 1.7 | 1.867 |
| Taking part in the world's biggest sporting event | 6.3 | 1.6 | 6.2 | 1.6 | 0.155 |
| Learning about mega events organisation | 6.1 | 1.6 | 5.9 | 1.7 | 1.505 |
| The tasks carried out allowed me to show my worth | 5.4 | 1.9 | 5.0 | 2.0 | 3.034* |
| I missed the event after it ended | 6.0 | 1.7 | 6.0 | 1.7 | 0.064 |
| Participation was important in my personal development | 5.8 | 1.8 | 5.7 | 1.8 | 0.845 |
| I would attend a similar event again | 6.2 | 1.6 | 6.2 | 1.6 | -0.486 |
| I am satisfied with the role and tasks assigned to me | 5.8 | 1.8 | 5.6 | 1.9 | 1.309 |
| I am satisfied with my performance | 5.9 | 1.7 | 5.9 | 1.7 | -0.108 |
| Personal development | 5.1 | 1.4 | 5.0 | 1.5 | 1.058 |
| Greater connection to sport | 5.0 | 1.5 | 4.8 | 1.7 | 1.913 |
| Privileges of volunteering | 5.0 | 1.5 | 4.8 | 1.6 | 1.716 |
| Positive experience | 5.1 | 1.5 | 4.8 | 1.6 | 2.519* |
| Contribution to the community | 5.2 | 1.4 | 5.1 | 1.5 | 1.241 |
| Social and cultural development | 5.2 | 1.4 | 5.2 | 1.5 | 0.456 |

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

When compared, the importance of volunteer work (6.6), the satisfaction and involvement promoted by the experience (6.0), the perception of personal contribution to the success of the event (6.1), socialising (6.2), the cultural experience (6. 2), the satisfaction with their performance (5.9), and development at a social and cultural level (5.2) were the fields in which both genders attributed the same valuation, culminating in the feeling of nostalgia (6.0) and the desire to participate in other similar events (6.2).

Finally, the data confirmed statistically significant differences in three fields, with males attributing greater importance and value than females on issues related to recognition and/or rewards, establishment of professional contacts, and perception of the ability to show their value with the assigned tasks, as well as about the feeling of a positive experience.

**Perceptions of the experience according to age groups**

As regards the comparison between age groups and in order to better interpret the possible results, we defined four groups. Table 5 shows that in both groups the answers were quite similar, which suggests that age had

**Table 5.** Perceptions of the experience of volunteers according to age groups

| Factors | <20 | | 21-30 | | 31-40 | | >40 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD | F |
| Importance of volunteer work | 6.6 | .9 | 6.6 | .9 | 6.5 | 1.1 | 6.7 | 1.0 | 0.602 |
| Recognition and/or rewards received | 5.5 | 1.7 | 5.4 | 1.8 | 5.2 | 2.0 | 5.3 | 1.8 | 0.945 |
| Variety of activities developed | 5.8 | 1.6 | 5.6 | 1.8 | 5.5 | 1.9 | 5.5 | 1.7 | 1.054 |
| Enjoyment promoted by the experience | 6.1 | 1.6 | 6.0 | 1.7 | 5.8 | 1.8 | 5.8 | 1.6 | 0.953 |
| Enjoyment promoted by the experience | 6.1 | 1.5 | 5.9 | 1.6 | 5.9 | 1.7 | 6.0 | 1.4 | 0.814 |
| The experience was positive | 6.3 | 1.4 | 6.2 | 1.5 | 6.1 | 1.6 | 6.3 | 1.4 | 1.109 |
| Your contribution was important during the event | 6.1 | 1.5 | 5.9 | 1.6 | 6.0 | 1.5 | 6.2 | 1.4 | 1.331 |
| Your participation contributed to the success of the event | 6.1 | 1.5 | 6.0 | 1.6 | 6.1 | 1.6 | 6.2 | 1.4 | 1.158 |
| Personal knowledge | 6.1 | 1.6 | 6.0 | 1.5 | 5.9 | 1.8 | 6.1 | 1.5 | 0.332 |
| Personal and professional growth | 6.1 | 1.6 | 6.0 | 1.6 | 5.8 | 1.9 | 5.9 | 1.7 | 0.798 |
| Multicultural interaction | 6.3 | 1.5 | 6.2 | 1.5 | 6.2 | 1.7 | 6.2 | 1.5 | 0.324 |
| Socialisation | 6.3 | 1.5 | 6.2 | 1.5 | 6.1 | 1.6 | 6.2 | 1.5 | 0.526 |
| Cultural and anthropological experience | 6.4 | 1.4 | 6.2 | 1.5 | 6.1 | 1.6 | 6.2 | 1.5 | 0.706 |
| Making professional contacts | 5.8 | 1.6 | 5.6 | 1.8 | 5.4 | 2.1 | 5.2 | 1.9 | 3.108* |
| Making friends | 6.1 | 1.7 | 6.0 | 1.6 | 5.9 | 1.8 | 6.1 | 1.5 | 0.535 |
| Taking part in the world's biggest sporting event | 6.2 | 1.6 | 6.2 | 1.6 | 6.2 | 1.8 | 6.4 | 1.5 | 0.508 |
| Learning about mega events organisation | 6.2 | 1.6 | 6.0 | 1.6 | 5.9 | 1.8 | 6.0 | 1.6 | 0.507 |
| The tasks carried out allowed me to show my worth | 5.2 | 1.9 | 5.3 | 1.9 | 5.0 | 2.1 | 5.2 | 1.9 | 0.952 |
| I missed the event after it ended | 6.0 | 1.6 | 6.0 | 1.7 | 5.8 | 1.9 | 6.1 | 1.7 | 1.035 |
| Participation was important in my personal development | 5.8 | 1.8 | 5.7 | 1.8 | 5.5 | 1.9 | 5.8 | 1.8 | 0.707 |
| I would attend a similar event again | 6.2 | 1.6 | 6.2 | 1.5 | 6.1 | 1.7 | 6.3 | 1.5 | 0.524 |
| I am satisfied with the role and tasks assigned to me | 5.7 | 1.9 | 5.7 | 1.8 | 5.5 | 1.9 | 5.7 | 1.8 | 0.282 |
| I am satisfied with my performance | 5.9 | 1.6 | 5.9 | 1.7 | 5.9 | 1.7 | 6.0 | 1.6 | 0.323 |
| Personal development | 5.2 | 1.5 | 5.2 | 1.4 | 4.9 | 1.6 | 5.1 | 1.5 | 1.196 |
| Greater connection to sport | 4.8 | 1.6 | 4.9 | 1.6 | 4.8 | 1.7 | 4.8 | 1.6 | 0.491 |
| Privileges of volunteering | 5.0 | 1.5 | 5.0 | 1.5 | 4.8 | 1.7 | 4.8 | 1.6 | 1.669 |
| Positive experience | 5.0 | 1.5 | 5.0 | 1.5 | 4.9 | 1.7 | 4.9 | 1.5 | 0.354 |
| Contribution to the community | 5.1 | 1.5 | 5.1 | 1.4 | 5.1 | 1.5 | 5.2 | 1.4 | 0.459 |
| Social and cultural development | 5.2 | 1.5 | 5.3 | 1.4 | 5.1 | 1.5 | 5.2 | 1.4 | 0.374 |

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

little influence on the higher or lower value assignment and motivation level of volunteers. However, the tests performed detected statistically significant differences regarding the perception and valuation of establishing professional contacts within the context of the volunteers' participation in the Olympic Games. In other words, the <20 group attributed greater importance to this field when compared to the others, and this valorization tends to be lower as age increases, suggesting that younger volunteers took this opportunity to enhance and increase their professional perspectives.

**Perceptions of the experience according to academic qualifications**

Regarding the comparison according to the different levels of academic qualifications (Table 6), the results also show a very similar pattern of response with no major differences between the volunteers.

However, and after performing the respective tests, the results showed the existence of significant differences regarding the establishment of professional contacts between volunteers with higher education and those with only secondary education. In other words, the volunteers with

**Table 6.** Perceptions of volunteers experience according to educational level/academic qualifications

| Factors | Basic | | Secondary | | Bachelor | | Master and PhD | | |
|---|---|---|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD | F |
| Importance of volunteer work | 6.7 | .6 | 6.6 | 1.1 | 6.6 | .9 | 6.5 | 1.0 | 0.413 |
| Recognition and/or rewards received | 5.1 | 2.0 | 5.7 | 1.7 | 5.3 | 1.9 | 5.1 | 1.9 | 2.403 |
| Variety of activities developed | 5.5 | 2.2 | 5.8 | 1.6 | 5.5 | 1.8 | 5.4 | 1.7 | 1.832 |
| Enjoyment promoted by the experience | 5.9 | 2.1 | 6.0 | 1.7 | 5.9 | 1.7 | 6.1 | 1.4 | 0.573 |
| Enjoyment promoted by the experience | 5.9 | 1.8 | 6.0 | 1.7 | 6.0 | 1.5 | 6.0 | 1.5 | 0.041 |
| The experience was positive | 5.9 | 2.0 | 6.3 | 1.5 | 6.2 | 1.4 | 6.3 | 1.6 | 0.659 |
| Your contribution was important during the event | 5.9 | 1.8 | 6.1 | 1.6 | 6.0 | 1.5 | 6.2 | 1.6 | 0.338 |
| Your participation contributed to the success of the event | 6.1 | 1.8 | 6.2 | 1.6 | 6.1 | 1.5 | 6.2 | 1.6 | 0.322 |
| Personal knowledge | 5.9 | 1.8 | 6.0 | 1.6 | 6.0 | 1.6 | 5.9 | 1.6 | 0.076 |
| Personal and professional growth | 6.1 | 1.8 | 6.1 | 1.7 | 5.9 | 1.7 | 5.8 | 1.8 | 0.666 |
| Multicultural interaction | 6.0 | 1.9 | 6.2 | 1.6 | 6.2 | 1.5 | 6.2 | 1.4 | 0.246 |
| Socialisation | 6.1 | 1.9 | 6.3 | 1.5 | 6.1 | 1.5 | 6.4 | 1.3 | 0.896 |
| Cultural and anthropological experience | 6.1 | 1.9 | 6.3 | 1.6 | 6.2 | 1.5 | 6.3 | 1.3 | 0.220 |
| Making professional contacts | 5.7 | 1.9 | 5.8 | 1.7 | 5.4 | 1.9 | 5.1 | 2.1 | 3.638* |
| Making friends | 6.1 | 1.9 | 6.1 | 1.6 | 6.0 | 1.6 | 6.0 | 1.5 | 0.287 |
| Taking part in the world's biggest sporting event | 6.2 | 1.8 | 6.3 | 1.6 | 6.2 | 1.6 | 6.4 | 1.3 | 0.254 |
| Learning about mega events organisation | 6.2 | 1.9 | 6.1 | 1.6 | 6.0 | 1.7 | 5.9 | 1.5 | 0.530 |
| The tasks carried out allowed me to show my worth | 5.3 | 2.1 | 5.4 | 1.9 | 5.1 | 1.9 | 4.8 | 1.9 | 1.570 |
| I missed the event after it ended | 6.1 | 2.0 | 6.0 | 1.7 | 6.0 | 1.7 | 6.1 | 1.7 | 0.116 |
| Participation was important in my personal development | 5.7 | 2.0 | 5.8 | 1.8 | 5.7 | 1.8 | 5.7 | 1.8 | 0.206 |
| I would attend a similar event again | 6.1 | 1.9 | 6.1 | 1.7 | 6.2 | 1.5 | 6.2 | 1.5 | 0.302 |
| I am satisfied with the role and tasks assigned to me | 5.7 | 2.1 | 5.8 | 1.8 | 5.6 | 1.8 | 5.7 | 1.6 | 0.362 |
| I am satisfied with my performance | 5.8 | 2.1 | 6.0 | 1.7 | 5.9 | 1.7 | 6.0 | 1.6 | 0.134 |
| Personal development | 5.0 | 1.8 | 5.2 | 1.5 | 5.1 | 1.5 | 4.9 | 1.4 | 0.833 |
| Greater connection to sport | 4.9 | 1.8 | 5.0 | 1.5 | 4.8 | 1.6 | 4.6 | 1.7 | 1.308 |
| Privileges of volunteering | 4.8 | 1.9 | 5.0 | 1.6 | 4.9 | 1.6 | 4.6 | 1.5 | 1.185 |
| Positive experience | 4.8 | 1.8 | 5.0 | 1.5 | 4.9 | 1.6 | 4.7 | 1.5 | 0.675 |
| Contribution to the community | 5.0 | 1.8 | 5.3 | 1.4 | 5.1 | 1.4 | 5.0 | 1.4 | 0.929 |
| Social and cultural development | 5.0 | 1.9 | 5.3 | 1.5 | 5.2 | 1.4 | 5.1 | 1.4 | 0.604 |

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

fewer academic qualifications were those who attributed greatest value and importance from the point of view of the motivation arising from their participation. These results suggest that participation in events of this importance is perceived not only as being extremely motivating, but also relevant from the perspective of professional growth by those with fewer academic qualifications.

**Differences between expectations and outcome perceived enjoyment at the Olympic Games**

Finally, and in order to establish a relationship and better understand the volunteers' expectations and motivations, we decided to assess and compare data in the initial period of the event and after its conclusion according to gender, academic qualifications, marital status and age group (Table 7). In this sense, the volunteers were asked to evaluate the perception of their level of satisfaction and motivation based on their participation and lived experience in the 2016 Olympic Games before and after the event.

The data obtained shows no statistically significant differences in any of the groups analysed. However, some interesting differences are worth mentioning and contribute to a more in-depth analysis. The comparison between genders showed a slight positive change that was more evident in men than in women, whereas the comparison of academic qualifications shows that the volunteers with undergraduate qualifications showed the most significant increase between initial expectations and the final assessment after participation. It should be noted that there was a negative assessment between pre- and post-event in the groups of volunteers with secondary education and Master's/PhD qualifications.

Regarding the comparison of volunteers according to marital status, both groups showed a positive relationship with no significant differences, with the divorced group showing the greatest difference between both timelines. On the other hand, it was verified that the 21–30 age group was the only one with a negative assessment according to post-event expectations, while the remaining were positive, as demonstrated especially by volunteers aged >40, as this group represented the greatest positive difference.

# Discussion

This study followed the line of research on motivation, satisfaction and expectations of sports volunteers arising from their participation and involvement in mega sporting events, more specifically within the scope of the Olympic Games. The main objective of the research was to explore the motivations and expectations of the volunteers participating in the 2016 Olympic Games in Rio according to different indicators, so as to understand and express their degree of satisfaction, as well as the recognition of the factors that had the greatest influence on their post-event evaluation, aiming to reinforce the validity of studying sporting legacies.

Research in sport management has enabled a deeper and multidisciplinary knowledge on the theme of sporting

**Table 7.** Differences between expectations and outcome of volunteers participation

| **Volunteer expectations according to gender** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Male** | | **Female** | | | | | | |
| | Mean | SD | Mean | SD | t | | | | |
| Experience-driven fun | 0.10 | 0.90 | 0.01 | 1.0 | 1.511 | | | | |
| **Expectations of volunteers according to educational level/academic qualifications** | | | | | | | | | |
| | **Basic** | | **Secondary** | | **Bachelor** | | **Master and PhD** | | |
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD | F |
| Experience-driven fun | 0.05 | 1.7 | -0.3 | 0.9 | 0.09 | 0.92 | -.08 | 1.0 | 1.123 |
| **Volunteers expectations according to marital status** | | | | | | | | | |
| | **Single** | | **Married** | | **Divorced** | | | | |
| | Mean | SD | Mean | SD | Mean | SD | F | | |
| Experience-driven fun | 0.01 | 0.99 | 0.10 | 0.90 | 0.22 | 1.0 | 1.485 | | |
| **Volunteers expectations according to age groups** | | | | | | | | | |
| | <20 | | 21-30 | | 31-40 | | >40 | | |
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD | F |
| Experience-driven fun | 0.07 | 0.97 | -.02 | .97 | 0.08 | 1.11 | 0.14 | 0.87 | 1.262 |

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

events (Annear et al., 2019; Groschl, 2021; Teixeira et al., 2023b), particularly in relation to everything involving sports mega-events (Oliveira et al., 2020; Cerezo-Esteve et al., 2022; Reis et al., 2023). Within this scope, the contribution of several researchers has enabled answers to be found to different paradoxes and questions, whilst consolidating the conceptual construct of sport legacy involving different dimensions (Koutrou et al., 2016; Thomson et al., 2019; Rozmiarek et al., 2021; Dickson & Darcy, 2022).

Science allows us to follow several paths (Teixeira et al., 2022), leading to greater and better knowledge about the reality of major sporting events, not only in relation to the potential aggregating factor of promoting sporting activity and stimulating an increase in the number of practitioners at local, national and international level, but also in relation to their economic, social, touristic or cultural effects (Vegara-Ferri et al., 2018; Theodorakis et al., 2019; Ramos et al., 2022; Teixeira et al., 2023b). More recently, issues associated with the introduction of new modalities, sustainability, preservation of the environment or adaptation to climate change have also gained particular interest (Gulak-Lipa & Jagielski, 2020; Hautbois et al., 2020; Cerezo-Esteve et al., 2022; Segui-Urbaneja et al., 2023).

In other words, the vast existing knowledge allows for a comprehensive understanding of the multiple effects and practical implications involved in organising events such as the Olympic Games in a direct way on the populations and the host country itself in the short, medium and long term (Kokolakis & Lera-Lopez, 2020; Oliveira et al., 2020; Ludvigsen et al., 2022). However, to speak of sporting legacies is also to speak of human development.

In this field, several researchers have sought to study the motivation of sports volunteers, as well as the main intentions and objectives which lead to their decision-making (Bang & Chelladurai, 2009; Lamb & Ogle, 2019; Bańbuła, 2021; Rozmiarek et al., 2023). In fact, it is possible to observe that this area of interest has grown substantially, particularly in the last decade, involving the study of sports volunteers in different types of events in various geographical regions (Holmes et al., 2018; Vetitnev et al., 2018; Kragt & Holtrop, 2019; Diop et al., 2022; Okada et al., 2022).

Broadly speaking, a substantial part of these results has identified the search for an experience that enriches personal and professional skills (Lucidi et al., 2008; Cho et al., 2020; Moradi et al., 2020; Bakhsh et al., 2021), whilst participating in an event they are passionate about, or for the global experience itself (Dickson et al., 2015; Doherty & Patil, 2019; Chen et al., 2022) are among the main reasons and motivations highlighted by various volunteers. Some of these results have enabled us to identify patterns of behaviour in different types of sporting events (Hallmann & Harms, 2012; Koutrou & Pappous, 2016; Kim et al., 2019a), thus reinforcing knowledge of the main intentions, expectations and motivations that stimulate interest in the activity of volunteers (Nedvetskaya, 2020; Won et al., 2021; Okada et al., 2022).

Therefore, the results of this study make it possible to reinforce some of the patterns and knowledge already identified and demonstrated by other authors (Dickon et al., 2013; Homes et al., 2018; Groschl, 2021; Diop et al., 2022). First of all, the high number of volunteers involved (>25,000) in an estimated total of over 50,000 applications, which demonstrates not only the interest in participating and sharing this unique experience, but also reinforces the growing importance of volunteers throughout the operational chain. The unique and fundamental role of volunteers has been widely mentioned, not only as a guarantee for the holding of large-scale events (Wilks, 2014; Okada et al., 2022), but also in the very intention of promoting the best possible event for all those involved (Koutrou et al., 2016; Lachance et al., 2021).

On the other hand, the profile of the volunteers involved in the 2016 Olympic Games also reinforces an international pattern of participation in major sporting events (Okada et al., 2022), i.e. the majority of volunteers were in the 16–35 age group (63.4%), with greater participation from 16–25 (38.6%), and the dispersion between female and male gender (53.7% and 46.3%, respectively) was quite uniform. The duality of participation of volunteers with and without experience should be another point of interest, due to the prevalence of the group without previous experience (52.4%), while those with previous experience in sports volunteering represented only 28.8% of the sample. This scenario reinforces the concern and appreciation attributed to the need for a strong focus on the design and planning of recruitment strategies (Nichols et al., 2019; Cuskelly et al., 2021), particularly with regard to the importance of understanding what volunteers are actually looking for when they apply (Nagel et al., 2020; Chen et l., 2022).

Considering that most volunteers had a higher level of education (74.0%) when compared to the remaining lower levels (26.0%), the possibility of different motivations and/or expectations arising from participation would be expected, but the main reasons indicated do not express this assumption, i.e. volunteers highlighted the feeling of pleasure in participating (20.0%), the possibility of improving their personal and professional skills (17.0%), their passion for the Olympic Games (16.8%) and their passion for sport (15.6%) as the main reasons for their involvement. These results demonstrate that, regardless of the level of education, there is a pattern as to what volunteers essentially seek, thus confirming results previously verified by other authors (Koutrou et al., 2016; Holmes et al., 2018; Gang et al., 2023).

If we take a deeper look at the results of this research, we verify that even when divided into different groups, the most relevant indicators point in two directions, i.e. on the one hand, the satisfaction and positive expectations inherent to participation in the event and, on the other hand, the

opportunity for growth and learning that translates into more personal and professional competences, a situation that has already been identified in similar studies (Lucidi et al., 2008; Nichols et al., 2019; Thomson et al., 2019; Won et al., 2021). These data tell us that volunteers seek not only an experience that translates into strong emotions and increases their levels of motivation and satisfaction, but also that their commitment and dedication produce gains that may help them in the future at various levels in their daily lives (Dickson et al., 2015; Hautbois et al., 2020; Rozmiarek et al., 2023).

The discussion on the motivation of sports volunteers and what leads them to their desire to participate in major sporting events has been the object of successive investigations, mainly since the beginning of the 2000s (Bang et al., 2008; Lucidi et al., 2008; Bang & Chelladurai, 2009). Several authors have addressed this issue, allowing some of their main assertions in this field to be confirmed today (Bang et al., 2008; Li et al., 2016), in which the vast majority of volunteers perceive these opportunities as something unique in their lives, and expectations and motivations take precedence over knowledge about the role they may play, given that the vast majority do not usually have any experience in this field (Bańbuła, 2017; Vetitnev et al., 2018; Ahn 2018).

The paradox that is created with the increase and diversity of knowledge about the behaviour and intentions of sports volunteers, as well as the recognition of the complexity and demand in the organisation of sports mega-events (Doherty & Patil, 2019; Bang et al., 2019) and the pressing need to recruit motivated and dedicated volunteers with greater skills and knowledge, is how to guarantee a continuity of previous volunteers, while simultaneously defining stimulating and tempting strategies to attract the best candidates, even those with no previous experience (Alexander et al., 2015; Ahn, 2018).

We therefore defend the idea, and the results of the study point in this direction, that sport legacies are also of human development, i.e. the level of interaction and involvement of volunteers has gained tremendous relevance in the last decade, covering candidates from different social strata and professional contexts, age groups, nationalities, level of qualifications and academic skills, most of whom seek the experience that enables their personal growth at various levels. For this reason, it is also necessary to evaluate and study the strategies developed by the competent entities, their characteristics and impact, in order to understand if we are effectively moving towards a comprehensive dimension of development and learning through participation in sports mega-events such as the Olympic Games (Bang et al., 2019; Doherty & Patil, 2019; Bakhsh et al., 2021; Dickson & Darcy, 2022).

The atmosphere created at events such as the Olympic Games is unique and unparalleled, where their simple realization promote and enhance diverse emotions and intentions, rich in learning, that can leave their mark on anyone (Oliveira et al., 2020). However, the lived experience versus expectations created should and must be nurtured so as to ensure that this feeling lasts over time. In the specific case of the 2016 Olympic Games in Rio, the results point towards a quite significant feeling of nostalgia (6.0 out of 7.0), reflected in the fact that 92.0% of the 828 volunteers stated that they would take part in similar events again.

Subsequent editions of the Olympic Games and other major sporting events occur in different regions, which in itself is a barrier to volunteers wishing to participate on a regular basis, just as the fact that they occur over time may discourage intentions of future participation. However, this should clearly be a concern of the organizing entities, as well as of each host country, as each event enhances not only new infrastructures, increased tourist flows and international visibility (Segui-Urbaneja et al., 2022; Dickson & Darcy, 2022; Teixeira et al., 2023b), among other things. Above all, it enables volunteers to gain skills and dynamics that are reflected in society and in more active and participative citizens, especially when most of the volunteers come from the organizing country itself. An example of this was the fact that 90.1% of the total number of volunteers were residents of Brazil, a situation that has already been seen in other sporting events (Kokolakis & Lera-Lopez, 2020; Okada et al., 2022).

The overall results allow us to infer that most volunteers approached this experience with concrete expectations and motivations and that, according to the analysis carried out by groups, these changed little, as the positive final assessment was clear and unequivocal. In relation to the starting questions, which aimed to draw specific conclusions regarding the motivation and satisfaction of the volunteers, it seems evident that we not only found answers, but that they reinforce the purpose of the study.

The volunteers unanimously highlighted the importance of participation in improving their personal and professional skills and knowledge (Q1), a finding that was possible through the analysis of different indicators. On the other hand, expectations were exceeded when analysing the pre- and post-event evaluation, translating into the prediction that they would repeat their participation (Q2), when 92.0% of the volunteers confirmed this desire and intention. Finally, and once analysed globally and subsequently by different groups, the data point towards a uniformity of the main indicators that allow us to support the statement that, regardless of gender, age or academic qualifications (Q3), the vast majority of volunteers saw their expectations exceeded, thus influencing their perception and global evaluation in terms of motivation and satisfaction with the experience lived at the 2016 Olympic Games.

In conclusion, the data obtained with this research allowed us to reinforce the scientific field of Olympic studies and sports volunteers at the level of motivation and expectations involving their decision making. With the approach of Paris 2024 and the experience of Tokyo 2020, held only in 2021 due to the Covid-19 pandemic, which did not allow a deepening in this field, we believe that these results remain useful and timely, and constitute a reference for future comparative studies that explore this theme in the context of sporting events and their volunteers. The study was limited by the impossibility of reaching a larger number of responses, which would have been interesting and would eventually strengthen the conclusions of the study.

## Conclusions

The design of this study made it possible to develop and strengthen the field of knowledge regarding the motivations and expectations arising from the participation of sports volunteers in the Rio 2016 edition of the Olympic Games. This is an emerging field of study, especially in recent years, not only due to the growing relevance of sports volunteers in the organization and execution of sports mega-events and their important multidisciplinary role, but also due to the curiosity and interest of several researchers in understanding the reasons that lead to decision making and consequent expectations and satisfaction levels.

The data obtained through this research unequivocally express the value attributed to this type of experience in the acquisition of more personal and professional skills and knowledge, regardless of gender, age or academic qualifications, and this opportunity was valued by most volunteers. The deepening of this thematic area continues to be essential within the scope of research in sports management, as it not only allows a greater comprehensiveness in the study of sporting events, and in particular sports mega-events, but also reinforces the importance of better understanding the role of volunteers, both in terms of their motivation and their practical performance during each event.

In this sense, we may conclude with the elaboration of this study that there is in fact scientific evidence that is reinforced in relation to the intentions and expectations of the volunteers, regardless of the type of sporting event, while we move towards the consensus that we are facing another perfectly consolidated dimension of sport legacy resulting from the holding of and participation in sporting events.

We believe that future studies should continue to analyse motivation, satisfaction and expectations before and after participation to strengthen this thematic area, while at the same time deepening the volunteers actual involvement. In other words, we seek to understand more about what this gain in competences translates into and what implications it has directly in their personal and professional lives after participation. In this way, it will be easier to adapt future recruitment strategies, as well as to form stronger, more dynamic and participative units and groups of volunteers.

## Practical implications for Olympic volunteering

The development of this research and the results obtained allow us to identify three practical implications, not only for future studies on Olympic/sports volunteers, but also for multilevel sports organisations that regularly require their contributions, for which they must invest in recruitment strategies of excellence to attract the best candidates.

Firstly, the results reinforce evidence already found by other authors on the importance the motivation and interest of volunteers related to personal and professional gains. The available knowledge shows that in the modern age of sport volunteers seek to acquire specialized knowledge and skills that enrich their CV and personal skills, this being their key motivation and expectation when volunteering for a given sport event. In this sense, it would be important for future studies to focus particularly on the types of gains and benefits that volunteers intend to acquire, not in a global, social or cultural way, but especially in professional terms and specific skills gains.

Secondly, and following on from the reinforcement of some of the main motivations and expectations of Olympic volunteers, a well-defined strategy for recruiting future volunteers must necessarily consider the profile of the candidates and, as far as possible, allocate them to functions to which they can attach particular importance. In other words, if organizations pay special attention to the experiences, skills and knowledge of candidates, they will be able to maximize the value of their contribution, thus increasing the likelihood of higher rates of motivation and appreciation of the experience gained before, during and after the event, which will transfer to the intention and motivation to participate in future similar events.

Finally, it seems clear to us that it is the strategic combination of the above findings that reinforces the importance of the concept of legacy in relation to Olympic volunteering, that is, at a time when volunteers are more demanding and well-defined in their purpose, the demands and complexity of organising mega-sporting events also increase, and the importance that volunteers represent in the success of events is indisputable. In this sense, the greater the commitment of organizations in attracting and recruiting candidates, supported and directed by the expectations of management and volunteers, the more likely they will show commitment to active and regular participation, and high levels of motivation.

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