ISCTE Business School
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LISBOA DESPORTO - HOW TO ATTRACT AND MAINTAIN MOTIVATED NON-PROFESSIONAL ATHLETES

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Acknowledgements

I look back now and I can clearly see everything that this journey has taught me. These two years were full of ups and downs, but mainly made of lessons, both professional and personal. This project represents a closure in my academic life but it was a pleasure to be a part of this project and work with this team for something that is meaningful to our city.

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Resumo

No âmbito do projeto do projeto Lisboa – Capital Europeia do desporto, desenvolvido pelo INDEG-ISCTE-IUL em parceria com a Câmara Municipal de Lisboa, este estudo pretende analisar quais os fatores que motivam e limitam as pessoas a praticar desporto e atividade física.

Os impactos positivos da prática de exercício físico e desporto são vastos e variam desde fatores de saúde a fatores psicológicos. Apesar dos esforços feitos nacionalmente e pela União Europeia, as taxas de população ativa a nível da prática desportiva continuam aquém do esperado.

Deste modo, visou-se perceber quais os determinantes que influenciam os diferentes géneros e faixas etárias a praticar desporto e atividade física para que, possam ser desenvolvidas e aplicas estratégias adequadas.

Após a revisão de literatura foi possível identificar os fatores mais relevantes e amplamente utilizados para estudar a participação. Na realidade, foram divididos em três grandes grupos: Motivações, limitações do indivíduo e barreiras do meio envolvente.

A informação foi recolhida junto de profissionais diretamente relacionados com a realidade desportiva em Lisboa. Através da análise estatística foi possível segmentar a informação e perceber quais as motivações e barreiras para diferentes géneros e faixas etárias.

Concluiu-se a maior taxa de abandono ocorre nos meses de Dezembro e Janeiro, independentemente do género ou idade dos participantes. Relativamente aos determinantes da prática desportiva de atividade física: encontraram-se diferenças ao nível de todos os determinantes para os géneros e ao nível de todos os determinantes com a exceção das barreiras do meio ambientes para as diferentes faixas etárias.

Abstract

As part of the application for Lisbon – European Capital of Sport 2021 developed in partnership between INDEG-ISCTE-IUL and the City Council, this study aims to analyse the determinants that people face when practising physical activity or sport.

The positive outcomes from practising sport and physical activity are vast and vary from health related factors to psychological factors. Despite the attempts made nationally and by the EU, the active population practising sport or physical activity still is lower than expected.

Therefore, this study contributes to the clarification of motivations and constraints that influence different genders and age range to practise sport and physical activity. This way, adequate policies and strategies can be developed and applied.

After the literature review, the main factors, widely used to explain participation were identified. In fact, they were divided into three main dimensions: Motivations, Individuals' limitations and environmental barriers.

Data was collected from professionals directly related to physical activity and sport participation in Lisbon. Through the statistical analysis, the information was segmented, and conclusions regarding the differences between gender and age ranges were drawled.

It was concluded that the months where the abandonment is higher, regardless age or gender, are January and February. Concerning the sport and physical activity determinants: it were found differences in gender for all determinants, it were found differences in all determinants, with the exception of environmental barriers, for different age ranges.

Keywords: Sport participation; physical activity; motivations; barriers; limitations

JEL Classification System: M31 – Marketing; M39 – Marketing and Advertising: Other

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1. Introduction

1.1. Framework and Objectives

As part of the application for Lisbon European Capital of Sport 2021 Program resulting from the partnership between the City Council and INDEG-ISCTE-IUL, this work has as its primary objective understand the motivation and barriers of sport and physical activity maintenance and participation for non-professional athletes.

Previous research has been done in order to understand what motivates and constrains people to practise sport or physical activity. Besides individuals' motivations, their participation can be influenced by limitations of the own individual and by environmental barriers, that change throughout life and differ between genders.

A crucial question imposed to marketers and sport researchers is not only to understand the consumers, their participation rates and their motives but also how to analyse it and how to use it (Rohm, Milne, & McDonald, 2006). This process is essential in order to correctly target the population and develop and apply policies and strategies in the society (Downward, Lera-López & Rasciute, 2011; Hulteen, Smith, Morgan, Barnett, Hallal, Colyvas & Lubans, 2017; Rohm *et al*., 2006; Eime, Sawyer, Harvey, Casey, Westerbeek, & Payne, 2015).

Not only is important to understand the motivations behind sport participation but also what factors prevent it (Eberth & Smith, 2010). Motivation is seen as a major factor influencing consumers when it comes to attract and maintain participation (Thomson & McAdoo, 2015).

The truth is that during the last years proves have been presented regarding the benefits of physical activity, ranging from physical to psychological, social or emotional benefits (Michaelsson *et al*., 2007 as Molanorouzi, Khoo and Morris (2015) referred; Warburton, Nicol, & Bredin, 2006; Rasciute & Downward, 2010; WHO, 2016).

There are ample researches identifying the several benefits that come from practising sport such as prevent/combat obesity, cardiovascular diseases, osteoporosis, osteoarthritis, diabetes, high blood pressure, strokes and even anxiety and depression (WHO, 2006; Warburton *et al*., 2006)

1.2. Structure

The structure of this thesis begins in the second chapter with a literature review related to the sport concepts. In chapter are provided definitions of key concepts such as physical activity, sport, exercise, sport participation, physical fitness, physical recreation and organised sport.

Next, key factors determining sport participation are identified based on the analysis of studies conducted by different authors. These factors are divided into motivations, individuals' limitations and environmental barriers. Besides, it is also provided an analysis of the effect of such factors on sport participation, based on the same authors analysed.

The chapter ends with a brief analysis of the sport participation in Europe and Portugal. The analysis of the Portuguese reality provides statistics regarding the number of sport participants and existing clubs by federation and in Lisbon.

In the third chapter, the theoretical model, composed by the main dimensions and the variables found is presented. Besides, the propositions are also constructed, based on the variables found in the literature review and in a way that allows conducting a segmented analysis of the market, by gender and age.

The methodology in the fourth chapter stars by explaining the relevance of the present study, the construction of the questionnaire and how the information was collected.

The fifth chapter is composed by the results, beginning with the sample characterisation, passing to the descriptive statistics as well the statistical analysis between genders and age ranges for the three dimensions: motivations, individuals' limitations and environmental barriers.

The study finishes with the conclusions for each dimension in the sixth chapter and the limitations and suggestions for further research in the seventh.

2. Literature Review

Firstly, and in order to have a better understanding of the sports dimension, it is necessary to define and distinguish several concepts widely used, followed by an analysis of the determinants of sport participation. This analysis aims to understand which factors motivate and constrain individuals to participate in sport and physical activity.

2.1. Definition and Distinction of Physical Activity, Exercise, Sport, Physical Recreation, Organized Sport and Sport Participation

Regarding the definition of concepts related to sport, there are authors defining the concepts in different ways. However, most definitions found in studies are based on the same literature.

Starting with physical activity and exercise, despite their similarities and the fact that they are usually interchanged, physical activity and exercise are two different concepts.

Physical activity can be defined as "*any bodily movement produced by skeletal muscles that result in energy expenditure.*" (Caspersen, Powel & Christenson, 1985: 126) This amount of energy required to move can be measured in kilocalories (kcal) or kilojoules (kJ). (Davidson, S. *et al*., 1979 as Caspersen, *et al*., (1985) referred). The amount of muscle mass used, the intensity, duration and frequency of muscle contractions are the determinants of the energy spent related to physical activity. (Taylor, H.L. *et al*., 1978, as referred by Caspersen, *et al*., (1985)). It can be performed in several forms, kinds and levels of intensity, such as walking, hiking, biking, dancing or sports (WHO, 2006).

In fact, **exercise** is considered a subcategory of physical activity once "*is a physical activity that is planned, structured, repetitive and purposive in the sense that improvement or maintenance of one or more components of physical fitness is an objective*" (Caspersen *et al*., 1985: 128). Therefore, all or almost all our daily activities are considered exercise, except for sleep (Caspersen *et al.*, 1985).

For a better understanding of sport it is important to introduce the **physical fitness** definition which is: "*the ability to carry out daily tasks with vigour and alertness, without undue fatigue and with ample energy to enjoy leisure-time pursuits and to meet unforeseen emergencies*" (President's Council on Physical Fitness and Sports: Physical Fitness Research Digest, 1971 as referred by Caspersen *et al*., (1985:128)). These definitions have been used by other authors in their studies what suggests a wide acceptance.

Although the **concept of sport** is one of the most important ones, it is also one of the most difficult to define. It evolves over time and, it is highly determined by social factors. Despite several attempts done throughout the years, researchers still did not reach a consensus in a common definition (Ruseski, Humphreys, Hallmann & Breuer, 2011; Kokolakakis, Lera-López & Panagouleas, 2012). In addition, it can assume various forms from organised/ unorganised to competitive/non-competitive (Ball, Bice & Parry, 2016; Lera-López & Rapún-Gárate, 2005; Lera-López & Rapún-Gárate, 2007). In fact, when an individual engages in a sport activity it can be organised in a **formal way or instead as a recreational activity**, so definitions of two concepts are provided.

Having this in consideration, **Australian Bureau of Statistics [ABS] (2008)** defined sport as an activity that demands physical skills and effort, rules and elements of competition. In its turn, physical recreation although involving skills and physical effort represents a slightly different form of activity once the focus is on individuals' mental and/or physical satisfaction. Finally, **organised sport or physical activity recreation** is defined as the overall activities officially developed by a club/ association that can range from organised/non-organized to competitive/non-competitive (ABS, 2008). In Lera-López & Rapún-Gárate, (2007:104) and Downward *et al*., (2011:2469) it is possible to find the **European Sports Charter definition** for sport which is "*Sport means all form of physical form of physical activity which, through casual or organized participation, aim at expressing or improving physical fitness and mental well-being, forming social relationships or obtaining result in competition at all levels*".

At last, Breuer, Hallmann and Wicker (2011:270) summarised Leslie *et al.* (2004) **sport participation** definition as "*having practised sports within the last fortnight*" and as well Humphreys and Ruseski (2009) definition as "having been physically active during the last four weeks". In addition, also provided the **Sport England definition**: "*participation in each sport is defined as the percentage of the adult population (age 16 plus) who have taken part in the sport at moderate intensity for 30 minutes or more at least once in the last week (at least four days out of the previous 28 days)*" (Breuer, *et al*., 2011:270).

Depending on whether it is assumed a narrow or a broader definition, some activities will be included or excluded from the analysis. This fact also prevents comparisons between studies. (Breuer *et al*., 2011).

In **this work we will assume the broader definitions of physical activity provided by Casperson, *et al.* (1985)** and of **sport provided by the Council of Europe's (1992)**, once it

is adequate when it is intended to study participation in general because the definitions will include activities such as walking and riding a bike (Ruseski *et al.*, 2011; Breuer *et al*., 2011).

These broader definitions will allow incorporating more accurate understandings and therefore strategies to improve physical activity and sport participation in general and are widely used in the literature.

2.2. Determinants and their Effect on Sport Participation

Regarding sport participation, when reviewing the literature on the context of sport determinants, there are three main dimensions identified: the motivations, the individual limitations and the environmental barriers.

In the same way, sport participation explanation and maintenance are addressed by several theories and frameworks, ranging from economic, social and psychological (Downward & Rasciute, 2014; Downward, 2007; Downward *et al*., 2011; Downward & Rasciute, 2010; Anokye (2010), as Anokye, Pokhrel, Buxton, & Fox-Rushby, 2012 referred). They can be divided into two perspectives: **heterodox theories** or **orthodox theories (**Downward, 2007; Downward & Rasciute, 2010).

Most of the economic and social-demographic factors affecting it are already well researched for general sport participation; however, their effect might differ for different sports (Breuer *et al.*, 2011).

From my standpoint, both perspectives are important in providing insights and explanations of consumers' behaviour and somehow complement each other. Sport participation is influenced by a wide array of factors ranging from both economic, to social and psychological.

In fact, it is evident that every individual has motivations behind their actions, including practising sport. In order to better understand individuals' choices and motivations, several studies and theories have been developed over the years.

2.2.1. Motivations

Passing now to a specific analysis of the motivations dimension, it is seen that they can be divided into intrinsic or extrinsic. Moreover, while some studies explain behaviour by generalising motivations, others address differences between genders and age ranges.

Having in mind the **heterodox** theories abovementioned, we believe that further explanation is necessary, in order to understand the motivations identified in the literature review.

It is seen that, in heterodox theories, a broader social science perspective is adopted to explain individuals' behaviour, that is sport participation is considered as a possible consequence of **more psychological and social factors** (see Downward, 2007; Downward *et al*., 2011; Kokolakakis *et al.,* 2012 for further insights).

One of the most common theories understanding and explaining the motivations behind consumer behaviour is the Self Determination Theory (SDT) (see Alexandris, Tsorbatzoudis and Grouios (2002); Thomson & McAdoo, 2015; Deci & Ryan (2000) as Teixeira, Carraça, Markland, Silva and Ryan (2012) referred). This theory assumes that individuals behave in order to satisfy wants and needs (Teixeira *et al*., 2012; Alexandris *et al*., 2002).

Two main concepts related to this theory are extrinsic and intrinsic motivations. In Teixeira *et al*. (2012) and Alexandris *et al*. (2002), it is possible to find summarised definitions of both. Starting by **intrinsic motivations**, it can be seen as the decision to behave in a determinate way because of the satisfaction inherent (such as enjoyment, excitement, accomplishment, autonomy, competence) whereas **extrinsic motivations** can be defined as motivation to do a specific activity based on the results it might produce (e.g. to avoid disapproval, external pressures, rewards) (Deci and Ryan, (1985); Deci, (2000) as referred in Teixeira *et al.* (2012) and Alexandris *et al.* (2002)).

Teixeira *et al*., (2012) suggest that extrinsic motivations are more related to the decision to participate and intrinsic motivations with the maintenance of participation.

Pertaining to a study based on the Self Determination Theory (Ryan & Deci's, 2000), it was found that sport participants had different motivations for different lifespans: the most important motivations during the childhood and adolescence are **family and friends support**, **enjoyment**, **peers** and **proximity and availability of infrastructures** and **variety of opportunities**. Whereas in adulthood the adherence to exercise is explained by **health**, **physical performance** and **social reasons** (Thomson & McAdoo, 2015).

Even though these results cannot be generalised, once the sample was specifically gym users, the abovementioned results are interesting. In fact, they are in accordance with other

studies such as the one conducted by Ball *et al.*, (2016) that concluded that adults are more influenced by competence (mastery and skills) and relatedness factors (connections made).

In another study aiming to investigate how the demand for sports is influenced by price and perceived benefits it was seen that **staying in good shape** and **improve or maintain health** were the most voted benefits perceived by individuals. However, **relaxing** and **look good** were the ones who showed an effect on influencing sport and exercise (Anokye *et al.*, 2012).

Passing to studies addressing **gender motivations discrimination**, in Molanorouzi *et al*. (2015) it is concluded that women are more motivated than men by **appearance** and **physical condition/fitness** whereas men demonstrate higher motivations than women in **competition/ego and mastery** reasons (Molanorouzi *et al*., 2015).

In addition, Molanorouzi *et al*., (2015) also analysed the **different motivations regarding age** and, it is seen that young adults are mostly motivated by mastery, affiliation and enjoyment whereas middle-aged adults reported that physical condition and others' expectations motives are more important.

Some authors generalize motivations for both men and women. In fact, it is suggested that factors such as **physical appearance**, **fun**, **relaxing**, **physical performance and fitness** and **spirit of competition** are core motivations for both men and women (Downward, Lera-López & Rasciute, 2014).

Downward *et al*., (2011) also found that **Keeping fit** and **socialising** were two motivations to participate in sport.

An additional study conducted by Rohm *et al.* (2006) analysing runners' motivations identified a set of motivations. However, they might not be adequately generalised to other activities once the sample is only composed by subscribers of a running magazine. As a result, conclusions might be limited to individuals with similar characteristics. Nevertheless, it is interesting listing these characteristics once they might provide inspiration to further investigations and are in line with findings in other studies. The motivations were the following: fitness and mental health, spiritual reasons (such as stress), weight control, social reasons, competition and self-esteem (Rohm *et al.*, 2006).

From the 2014 Eurobarometer, the most important reasons identified to influence sport or physical activity practise are improving health, improve fitness, relaxing and having fun (Eurobarometer, 2014).

Bakker, Whiting and van der Brug (1990) found that sport participation is strongly related to intrinsic motivations such as joy or pleasure. More specifically, the authors state that the most relevant factors explaining why people practise sport are intrinsic value, desire to develop competencies and the effect that sport has on health (Bakker *et al.*, 1990).

2.2.2. Individuals' Limitations

In the individuals' limitations dimension, the behaviour is explained by socio-demographic and economic variables. These variables can either have a positive impact, a negative one or even not be considered important.

In the literature, it is seen that in **orthodox theories (neoclassical theories) sport participation is explained** through models such as Becker's' (1965) **Economic theory of behaviour** in which sport participation is explained through an economic model that impose constraints such as time, income and human capital (e.g. education) (Breuer *et al.,* 2011; Wicker, Hallman & Breuer, 2013; Downward, 2007; Downward *et al*., 2011; Downward & Riordan, 2007).

The logic behind these theories is that people behave in order to maximise their utility (Gardner and Oswald 2006; Kahneman and Krueger 2006; Shields and Wheatley Price 2005, as mentioned by Downward and Rasciute (2011); Humphreys & Ruseski, 2006).

First, regarding **education** it is suggested a positive association with sport participation (Breuer *et al.,* 2011; Kokolakakis *et al.,* 2012; Wicker, Hallman & Breuer, 2012; Downward, 2007; Humphreys & Ruseski, 2006; Humphreys & Ruseski, 2009; Downward & Rasciute, 2010; Ruseski, Humphreys, Hallman, & Breuer, 2011; Eberth & Smith, 2010; Wicker *et al.,* 2013) and frequency (Lera-López & Rapún-Gárate, 2005; Lera-López & Rapún-Gárate, 2007). However, Downward *et al.* (2011) suggested that education is not important to determine sport participation.

Secondly, higher **income** increases the probability of an individual participate in sport (Breuer *et al.,* 2011; Downward, 2007; Anokye *et al.,* 2012; Humphreys & Ruseski, 2006; Humphreys & Ruseski, 2009; Downward & Rasciute, 2010; Eberth & Smith, 2010; Downward & Rasciute, 2014) as well the frequency of participation (Downward *et al.,* 2011;

Lera-López & Rapún-Gárate, 2005). However, there are studies suggesting the decrease in frequency when income increases (Downward & Riordan, 2007) or the absence of effect (Lera-López & Rapún-Gárate, 2007).

For time variable, the analysis is unclear, while it is suggested by some that **time spent working** has a positive effect on sport participation (Wicker *et al*., 2012; Wicker *et al*., 2013). **Time allocated to other leisure activities** is also seen to have a positive influence on sport participation (Downward, 2007) or no clear effect (Dallmeyer *et al.*, 2017).

Although **participating in other sport activities** is expected to prevent participation according to Downward *et al.*, (2014), Downward and Riordan (2007) suggest a positive influence.

By its turn, the individuals' **working status** also influences sport participation. On the one hand, **employed** individuals are less likely to participate in physical activities (Humphreys & Ruseski, 2006; Eberth & Smith, 2010) and with lower frequency (Lera-López & Rapún-Gárate, 2007; Lera-López & Rapún-Gárate, 2005).

In addition, some of the studies concluded that depending on the type of occupation sport participation might increase, that is, sport participation tends to be higher for skilled workers in comparison to unskilled workers (Downward, 2007; Léra-López & Rapún – Gárate, 2007; Downward & Riordan, 2007; Kokolakakis *et al.*, 2012).

Pertaining to **age** it is concluded in some studies to increase participation until a certain age (Ruseski *et al*., 2011; Breuer *et al*., 2011; Wicker *et al*., 2013) and then decline (Ruseski *et al*., 2011; Wicker *et al*., 2013) or remain stable (Breuer *et al*., 2011). By contrast others concluded that increasing age has a negative impact on participation (Kokolakakis *et al*., 2012; Downward *et al*., 2014; Downward & Riordan, 2007; Downward & Rasciute, 2010; Anokye *et al*., 2012; Humphreys & Ruseski, 2006; Humphreys & Ruseski, 2009; Eberth & Smith, 2010). In addition, there are studies suggesting that age might not be relevant in explaining sport participation (Wicker *et al*., 2012) or the effect is not clear (Downward *et al*., 2011).

When it comes to frequency, it is suggested that increases female frequency and decreases male frequency (Downward *et al*., 2014) or increase in both (Lera-López & Rapún-Gárate, 2007; Lera-López & Rapún-Gárate, 2005).

Existing studies suggest that **gender** does not play a significant role in determining sport participation (Wicker *et al.,* 2012). In contrast, other results suggest that the probability of participating in sport increases if individuals are male (Breuer *et al*., 2011; Kokolakakis *et al*., 2012; Downward *et al*., 2011; Downward, 2007; Downward & Rasciute, 2010; Anokye *et al*., 2012; Eberth & Smith, 2010; Humphreys & Ruseski, 2006; Downward & Rasciute, 2014). However, there is also evidence that being a male might be associated with a lower level of participation (Ruseski *et al*., 2011; Humphreys & Ruseski, 2009).

In addition, is seen that being a male tends to increase sport participation frequency (Lera-López & Rapún-Gárate, 2007; Humphreys & Ruseski, 2009) or have no relevant effect (Lera-López & Rapún-Gárate, 2005).

Regarding **household characteristics,** it is a complex variable, and it includes several things. On the one hand, it is suggested that being a housekeeper decreases sport participation (Downward, 2007; Downward & Riordan, 2007; Downward & Rasciute, 2010). On the other, **being married** in some studies is seen to increase sport participation (Downward, 2007) while in others is associated with a decrease of the likelihood to participate (Downward & Rasciute, 2010; Humphreys & Ruseski, 2006; Eberth & Smith, 2010). In addition, there is also the suggestion that the marital status might not be relevant in determining sport participation (Ruseski *et al*., 2011; Humphreys & Ruseski, 2009).

The number of adults and children in the house is seen to be associated with a lower level of sport participation (Downward, 2007; Humphreys & Ruseski, 2006; Ruseski *et al.,* 2011; Wicker *et al.,* 2013) especially on women (Downward *et al*., 2014; Eberth & Smith, 2010) or having no effect in the decision (Humphreys & Rusesky, 2009; Wicker *et al*., 2012). However, other studies suggest that the number of sport/leisure ratio demanded will increase with the number of children and adults in the household (Downward & Rasciute, 2010; Downward & Rasciute, 2014).

Regarding **frequency**, it is positively associated with the number of adults in the household (Downward & Riordan, 2007). Lera-López and Rapún-Gárate (2007) did not identify a link between the household size and sport participation.

As a matter of fact, the individuals' lifestyle is also analysed in some studies. Some suggest that **smoking** decrease the probability of participating in sport (Downward, 2007; Downward & Rasciute, 2010; Downward *et al*., 2014; Eberth & Smith, 2010). However, for

consuming alcoholic beverages, while some suggest that increases the probability of participating in sport (Downward, 2007; Downward & Riordan, 2007; Eberth & Smith, 2010) others suggest that decreases both participation and frequency (Downward *et al.*, 2014).

People who **consider themselves healthy** (Downward & Riordan, 2007; Humphreys & Ruseski, 2006; Downward *et al*., 2014; Downward & Rasciute, 2014; Downward & Rasciute, 2010) or have a **vehicle** (Downward & Riordan, 2007; Downward *et al.*, 2014; Downward, 2007) also are more likely to participate in sport activities.

The different conclusions taken in different studies might differ due to the sport definition assumed once the fact that a broader definition will include activities such as walking (Breuer *et al*., 2011; Downward *et al.,* 2011).

2.2.3. Environmental Barriers

As previously mentioned, individuals behaviour not only is influenced by motivations and limitations related to him but also by barriers imposed by the environment, such as the quality and quantity of facilities where participation takes place, the price or the easiness in accessing the infrastructures.

When analysing literature, it is possible to understand that Wicker *et al.* (2012) took conclusions on the influence of **infrastructures** on sport participation. Interestingly, the effect depended on the type of the facility: in their study swimming pools and parks are important whereas both outdoor and indoor sport areas are not significant or even negatively associated (Wicker *et al.,* 2012). The study conducted by Wicker *et al.* (2013) also concluded that swimming pools have a positive effect whereas gymnastics and dancing rooms a negative one.

There are studies that did not relate the availability of sport infrastructures with sport participation (Downward *et al.,* 2011), while others imply that the availability of infrastructures increases participation (Downward *et al.,* 2014; Dallmeyer, Wicker & Breuer, 2017). In fact, Dallmeyer *et al.,* (2017) suggest that for an increase in sport participation, investment in infrastructures is the most effective measure.

In line with this, **environmental factors** such as the **diversity** and **quantity of resources** and **easiness** in **accessing facilities** play an important role in determining sport participation during individuals' lifetime (for more details, see Thomson and McAdoo (2015); Dallmeyer *et al.,* 2017). Although this study drawled similar conclusions to other authors, it is limited by

the sample composition (only gym users of the male gender) and by relying on personal opinions. Therefore, generalisations to other contexts might not be totally accurate (Thomson & McAdoo, 2015). In line with this, Downward and Rasciute (2010) also concluded that having sport facilities near promotes sport participation.

In the study conducted by Anokye *et al*. (2012), although the variable price has a negative effect on sport demand and the fixed price has a positive effect, the overall effect of **price** in sport participation is more related to the context of frequency, which looks like to be negative.

Variable prices comprehend entrance, competition and classes charges and price of refreshment, equipment hire and transport ticket; fixed prices include membership and joining fees, the price of apparel, equipment, insurance, medical care or nutritional supplements (Anokye *et al*., 2012).

Finally, the **time** people **spend travelling** in order to practise sport not only has an influence on sport demand (Thomson & McAdoo, 2015; Anokye *et al*., 2012) but also on its frequency and duration (Anokye *et al*., 2012). Interestingly, Ruseski *et al*., (2011) suggested that people are more likely to participate when taking more time to arrive.

Some variables were included in the model to approximate the study to the 2014 Eurobarometer questionnaire and therefore collect more precise and adequate information, others were suggested. Other variables, even though they were not widely analysed, were included by suggestion or because there is literature regarding it. Therefore, they were considered interesting to be analysed.

2.3. Sport Participation

Even though there is an increased concern regarding health and healthier lifestyle habits, the population face many challenges. That happens because with the development of technology and the development of the societies more and more our daily routines imply less activity (Kokolakakis *et al*., 2012).

We spend a considerable of time sitting in front of the computer, either in our houses either in our work, we use cars as the primary mean of transport, and we have easy access to food (WHO, 2006). A lot has changed throughout these past years, and all contributed to change our habits (Vaz de Almeida, Graça, Afonso, D'Amicis, Lappalainen, & Damkjaer, 1999; WHO, 2006).

Prior research has documented the benefits of practising sport (Rasciute & Downward, 2010; Sherwood & Jeffrey, 2000 as Wicker *et al*., 2012 mentioned) and the increasing concern of governments to promote sport participation has also been addressed by several studies (Downward & Rasciute, 2010; Downward & Rasciute 2011; Downward *et al,* 2009; Green & Houlihan, 2005 as Wicker *et al.,* 2012 referred).

2.3.1. Sport Participation in Europe

In a more European context, there is a wide range of literature studying sport participation, especially in what concerns to the determinants (Van Tuyckom, 2013; Vaz de Almeida *et al*., 1999; Downward *et al*., 2014). However, comparisons between countries are difficult to be made once the definitions adopted and the measures used in the different studies prevent accurate conclusions (Kokolakakis, 2012).

In fact, not only the governments but also the EU has made efforts in order to raise awareness to the benefits and importance of a more active lifestyle (Tuyckom, 2013; Rasciute & Downward, 2010; WHO, 2011).

Hulteen *et al.,* (2017) analysed the types of sport practised in six different regions (Africa, Americas, Europe, Eastern Mediterranean, Southeast Asia and Western Pacific) concluded that the top five activities performed in Europe by adults (18 + years) are soccer, running, swimming, resistance training and cycling, respectively (Hulteen *et al.*, 2017).

Pertaining to participation, in 2014 Eurobarometer it is seen that the percentage of the population in Europe that do some kind of physical activity (at least once a week) is 41% while 59% never or seldom do. These results did not change significantly since the 2009 Eurobarometer although the percentage of the population that never exercise or do sports increased from 39% to 42% between 2009 and 2014 (Eurobarometer, 2014).

Moreover, it is widely known that individuals' behaviours vary with culture, that is, the lifestyle (smoking, drinking, exercising, etc) and it is seen that in general Nordic countries have higher rates of participation (Vaz de Almeida *et al.,* 1999; Eurobarometer, 2009).

In what concerns to disparities inside Europe, a clusters study grouped European countries based on the sport typology, that is, countries were grouped based on the type/intensity of exercise.

The result was six cluster divided in “non to average fitness”, “active club”, “average on-organized”, “average school”, “active multi-context” and “very active” (Tuyckom, 2013). The conclusions of this study also show that there are large disparities between the two more distant clusters in which the cluster “non to average fitness” was composed by Greece, Italy and Portugal and the cluster “very active” cluster was composed by Finland and Sweden (Tuyckom, 2013).

In line with the findings of Vaz de Almeida *et al.,* (1999), the 2014 Eurobarometer also refers that sport participation and exercise in Nordic countries generally is higher than the rest of the members, especially Southern countries, the same applies to other kinds of physical activities (Eurobarometer, 2014).

Lera-López and Marco (2018) conducted a study that analysed participation between different regions of Europe instead of comparing between countries and that divided sport participation and physical activity in three different levels, namely basic, regular and healthy.

In this study, in what concerns to healthy physical activity or sport participation, it is not identified any patterns across European regions. However, when looking at basic or regular physical activity, there are some differences between northern and southern regions. The study only identified a difference in the percentage of population practising sport between eastern and western regions (Lera-Lopez & Marco, 2018).

2.3.2. Sport Participation in Portugal

Regarding a more national comprehension of the sport dimension, according to Soukiazis & Ramos (2016), practising sport is considered an important factor when it comes down to influence the happiness of the Portuguese population.

WHO (2016) reports that 62.7% of the adult population (+18 years) achieved the recommendations for physical activity in order to extract the health benefits (WHO, 2016). However, these percentages are higher in men’s than in women’s, 66.5% and 59.2%, respectively (WHO, 2016).

The 2014 Eurobarometer concluded that the percentage of the population that never took part in exercise or sport in Portugal was high (64%), the same applies to other kinds of physical activities with a percentage of 60%. Likewise, the vigorousness of the activities is also one of the lowest (9%).

According to IPDJ, it is seen that the number of sport clubs in Portugal by autonomous regions and districts suffered a slightly decrease throughout the last decade. The number varied from 12677 to 10765 between 2006 and 2016 (Appendix 2). The existing clubs in Lisbon correspond to 18% of the total number of clubs in Portugal (See appendix 3).

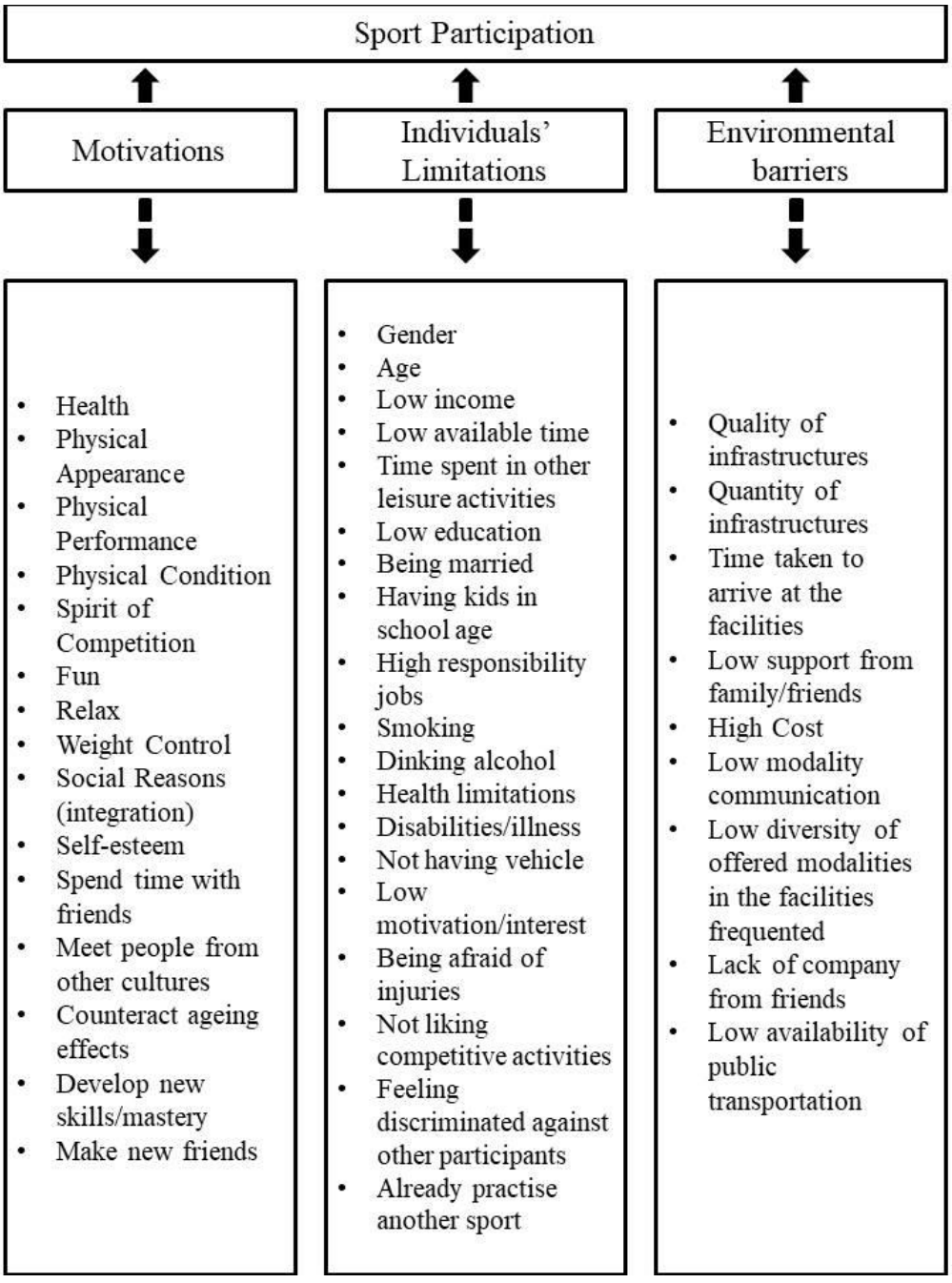
Regarding the total number of total sport participants in Portugal, the number increased 32%, from 449006 to 590668, from 2006 to 2016 (Appendix 5). Women increased by 84%, from 91496 to 168622, corresponding in 2016 to 29% of the total participants and men increased by 18%, from 357510 to 422046, what makes them 71% of the participants. (See appendix 5)

The total number of federal sport participants in Lisbon corresponds to 18% of the total national value (See appendix 3).

3. Theoretical Model

After an analysis of the literature, the variables to be used on the theoretical model were chosen once the authors widely used them on the literature review. Therefore, they are assumed to be the most relevant ones regarding sport participation and maintenance. In addition, they also provide important insights on the strategies to be developed to improve and maintain sport participation (figure 1).

Figure 1 - Theoretical Model. Source: Developed by the author



In order to study sport participation and physical activity in Lisbon, the following propositions were developed:

P1: There are differences between genders regarding motivations to practise sport and/or physical activity;

P2: There are differences between genders regarding individuals' limitations to practise sport and/or physical activity;

P3: There are differences between genders regarding environmental barriers to practise sport and/or physical activity;

P4: There are differences between age ranges regarding motivations to practise sport and/or physical activity;

P5: There are differences between age ranges regarding individuals' limitations to practise sport and/or physical activity;

P6: There are differences between age ranges regarding environmental barriers to practise sport and/or physical activity;

4. Methodology

4.1. Research problem

This study was conducted as a part of the application for Lisbon – European Capital of Sport 2021 Program in a partnership between the City Council and IDEG-ISCTE-IUL. It aimed to understand the motivations and barriers that are imposed to sport participation in Lisbon area, discriminated by gender and age.

As stated previously, the best way to promote health through active lifestyles and to increase health behaviours is to understand what drives them (Plonczynski, 2000).

In order to develop a consumer profile and apply correct policies and strategies (Downward *et al*., 2011; Hulteen, Smith, Morgan, Barnett, Hallal, Colyvas, Lubans, 2017; Rohm *et al.*, 2006; Eime, Sawyer, Harvey, Casey, Westerbeek, & Payne, 2015) an analysis of the Portuguese reality is necessary, more specifically in Lisbon.

The study segmented the questions by gender and age once it is seen in the literature that there are significant differences in men's and women's participation motives and limitations as there is for different age ranges. This provides more detailed information about each segment that allows developing policies and strategies with different aims. (Eurobarometer, 2014)

4.2. Research Method

In order to collect information, this thesis firstly started by gaining additional insights through an exploratory phase (Malhotra, 2007) by identifying the key articles and authors in the field of study. The variables to be used in the study were collected and included once they are considered, in general, the more important and appropriate after the literature review. Also, for a more precise and adequate analysis, the questions were developed, constructed and completed considering the Eurobarometer questionnaire. Afterwards, a conceptual model and a questionnaire were developed and adapted to Lisbon.

In the confirmatory phase, the variables were evaluated according to their importance using descriptive statistics and the chi-square test. The descriptive statistics are used to sample characterisation, and the chi-square test is used to test if two or more groups are independent (Marôco, 2014).

The instrument chosen to collect information was an online questionnaire, elaborated on the Qualtrics online platform and also applied online, via email. It was written in Portuguese once is the mother language of the considered universe.

The methodology was chosen since, in addition to being the primary method used to collect information about the subject on the literature, according to Shields and Rangarajan (2013) and Malhotra (2007), surveys are the most common instruments to collect data for descriptions and the problem focused on explaining the determinants of participation in general. It also allowed collecting objective information to segment the market once it asked experts about their knowledge on the subject. (Kotler & Armstrong, 2011)

Before the survey was applied, a pre-test was conducted in 6 individuals in order to understand if the questions were clear or needed improvement. None of the answers were considered in the final sample.

The final questionnaire was sent to the enquired individuals that were directors, personal trainers, coaches or other individuals directly related to sport practise of non-professional athletes. The survey was not applied to the population in general, but to a specific sample once, the first was the object of study by another study.

The first questions of the survey served to collect information about the profile of the respondents, namely what modality they trained, where they worked and how much and what was their functions. This aimed to assure that the respondents fit the main objective of the study.

Passing to the main questions on the survey, they were structured in order to select three of the several variables presented, for each of the main groups: motivations, individuals' limitations and environmental barriers. It was also segmented by age range: 15 to 24, 25 to 39, 40 to 54 and 55 or more. These sections aimed to collect the variables that were considered to be the most relevant to influence sport participation, in positive and negative directions.

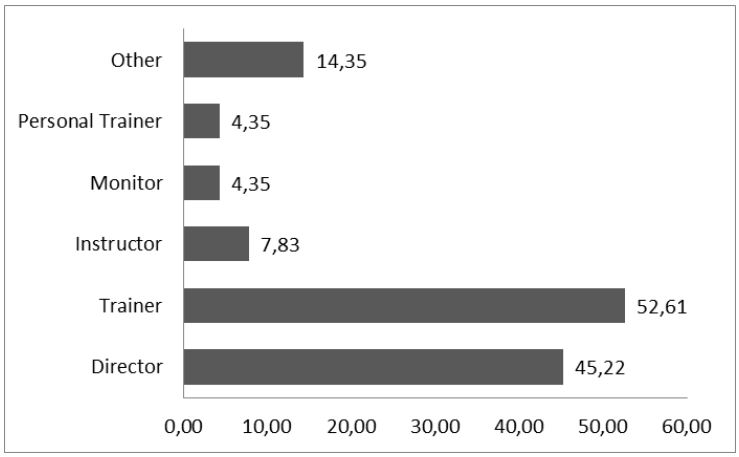
The last two sections contained open questions, the first questions to help collect clues about how to maintain adherence and avoid quitting and the last one has questions about demographic characterisation.

5. Results Analysis

Descriptive statistics were used in order to analyse de frequency and percentage of answers. In order to make comparisons between groups, the chi-square test was used.

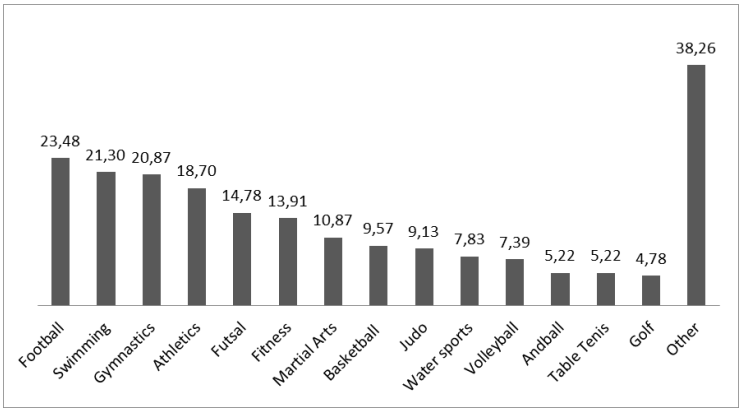
A total of n=230 questionnaires were carried out to individuals working in 129 institutions, from which 70.4% were males and 23.9% were females, with age ranges between 38 and 98 years old (M = 62.66; ST = 12.62). Their jobs varied from trainers to directors as we can see by the distribution in figure 2.

Figure 2 - Distribution of the respondents by profession (%)



From the sample, most of the respondents trained or directed football, swimming and gymnastics (Figure 3).

Figure 3 - Modalities trained/directed/coached by the respondents (%)

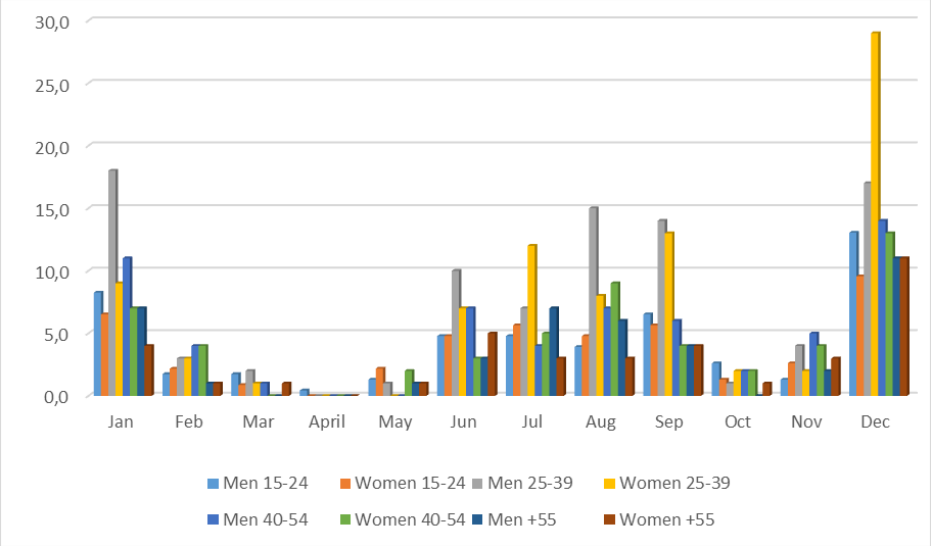


The results of the average percentage of abandonment and the month were this rate is higher are presented below (Figure 4 and 5). It is seen that the months with higher rates of abandonment are December and January, for both men and women and that the rates of abandonment are higher for lower age ranges.

Figure 4 - Average abandonment by gender and age range

	Min	Max	M	SD
15-24 years				
Men	2	82	26.68	20.15
Women	1	80	27.77	21.42
25-39 years				
Men	1	80	25.76	19.87
Women	1	80	26.19	19.42
40-54 years				
Men	1	60	22.92	18.31
Women	1	71	27.75	19.95
≥55 years				
Men	1	80	21.20	21.65
Women	1	70	27.49	17.34

Figure 5 - Month where it is verified a higher abandonment (%) by gender and age range



5.1. Motivations

Analysing the frequency and percentages of the principal motivations chosen by the respondents (Appendix 6), considering the total values, the five motivations that were most chosen were health (48.9%), physical condition (39.7%), spirit of competition (29.7%), physical appearance (29.5%) and fun (28.4%).

5.1.1. Main motivations by age and gender

In what concerns to men, the three motivations more selected as principal motives for each age range were (Appendix 6):

- 15-24 years old: Spirit of competition (55.3%), physical condition (38.2%) and fun (35.8%)
- 25-39 years old: Physical condition (47.4%), health (44.2%) and spirit of competition (37.9%)
- 40-54 years old: Health (74.2%), physical condition (54.8%) and fun (29.0%)
- 55 years old or more: Health (81.0%), fun (45.2%) and relax (38.1%)

For women, the three motivations more selected as principal motives for each age range were (Appendix 6):

- 15-24 years: Physical appearance (50.6%), physical condition (35.2%) and spirit of competition (30.3%)
- 25-39 years: Health (54.3%), physical appearance (47.1%) and physical condition (41.4%)
- 40-54 years: Health (71.7%), physical appearance (45.7%) and physical condition (39.1%)
- 55 or more: Health (86.2%), counteract ageing effects (41.4%) and physical condition (31.0%).

5.1.2. Comparison of motivations between genders

Were found significant statistical differences between genders for physical appearance with χ^2 (1) = 45.931; p < .001, for physical performance with χ^2 (1) = 5.003; p = .025, for spirit of competition with χ^2 (1) = 14.776; p < .001, for fun with χ^2 (1) = 11.105; p = .001, for weight control with χ^2 (1) = 39.770; p < .001, for self-esteem with χ^2 (1) = 3.981; p = .046 and for spending time with friends with χ^2 (1) = 4.502; p = .034 (Appendix 7).

The results show that the motivations physical performance, spirit of competition, fun and spend time with friends where the ones more frequently chosen for men than for women, whereas for women the ones more frequently selected than for men were physical appearance, weight control and self-esteem.

5.1.3. Comparison of motivations between ages

It was found significant statistical differences between the several age ranges in the variables health with χ^2 (3) = 105.221; p < .001, physical appearance with χ^2 (3) = 10.437; p = .015, physical performance with com χ^2 (3) = 8.329; p = .040, physical condition with χ^2 (3) = 10.640; p =.014, spirit of competition with χ^2 (3) = 55.954; p < .001, relax with com χ^2 (3) =

19.771; $p < .001$, counteract ageing effects with χ^2 (3) = 80.634; $p < .001$, develop new skills with χ^2 (3) = 12.707; $p = .005$, make new friends with χ^2 (3) = 18.950; $p < .001$ and for others with χ^2 (3) = 8.187; $p = .042$ (Appendix 8).

The results show that physical performance, spirit of competition, develop new skills, make new friends and others were ones most selected for the age 15 to 24; physical appearance was the one most selected for ages between 25-39, whereas physical condition was the one more selected for ages between 40-54 and health, relax and counteract ageing effects the ones for ages above or equal to 55.

5.2. Individuals Limitations

Analysing the frequency and percentages of the individuals' barriers listed by the respondents, it is possible to see that the respondents considered the low available time (65.6%), low motivation/interest (39.4%), high responsibility jobs (35.2%), having kids in school age (32.2%) and being married (21.6%) (Appendix 9).

5.2.1. Main individuals limitations by age and gender

The three most selected barriers for each age range for men were (Appendix 9):

- 15-24 years: Low available time (62.6%), low motivation/interest (58.5%) and low income (22.0%)
- 25-39 years: Low available time (78.9%), having kids in school age (57.9%) and high responsibility jobs (48.4%)
- 40-54 years: Low available time (62.9%), high responsibility jobs (62.9%) and low motivation/ interest (35.5%)
- 55 or more years: Health limitations (57.1%), low motivation/interest (45.2%) and high responsibility jobs (40.5%)

The three most selected barriers for each age range for women were (Appendix 9):

- 15-24 years: Low available time (75.3%), low motivation/interest (52.8%) and low income (22.5%)
- 25-39 years: Low available time (75.7%), having kids in school age (75.7%) and being married (38.6%)
- 40-54 years: Low available time (65.2%), high responsibility jobs (47.8%) and having kids in school age (41.3%)

- 55 or more: Health limitations (62.1%), low available time (41.4%) and being married (34.5%)

5.2.2. Comparison of individuals limitations between genders

It was found significant statistical differences between genders for the individuals barriers of being married with χ^2 (1) = 10.470; p = .001, having kids in school age with χ^2 (1) = 9.388; p = .002, high responsibility jobs with χ^2 (1) = 5.221; p = .022, low motivation/interest with χ^2 (1) = 4.577; p = .032, not liking competitive activities with χ^2 (1) = 4.998; p = .025 and already practise another sport with χ^2 (1) = 11.139; p = .001 (Appendix 10).

The results show that high responsibility jobs, low motivation/interest and already practise another sport where the ones more frequently pointed for man than for women and the barriers being married, having kids in school age and do not liking competitive activities the ones most frequently selected for women than for men.

5.2.3. Comparison of individuals limitations between ages

It was found significant statistical differences between age ranges in all limitations with the exception of drinking alcohol and feeling discriminated against other participants (Appendix 11).

The results show that the limitations time spent in other leisure activities, low education, smoking, low motivation/interest, not liking competitive activities, already practise another sport and other were the most listed for ages between 15-24 years; low available time, being married and having kids in school age were the most frequent for ages between 25-39 years, whereas high responsibility jobs is the most frequent for ages between 40-54 years and the limitations low income, health limitations, having a disability/illness and being afraid of injuries are the ones most pointed for people with 55 or more years.

5.3. Environmental barriers

Analysing the five top environmental barriers listed by the respondents were time taken to arrive at the facilities (56.3%), low support from family/friends (44.2%), high cost (39.6%), lack of company from friends (34.7%) and quality of the facilities (28.6%) (Appendix 12).

5.3.1. Main environmental barriers by age and gender

The top three most selected environmental barriers for each age range for men were (Appendix 12):

- 15-24 years: Time take to arrive at the facilities (52.8%), high cost (47.2%) and low support from family/friends (33.3%).
- 25-39 years:Ttime taken to arrive at the facilities (58.9%), low support from family/friends (40.0%) high cost (38.9%)
- 40-54 years: Time taken to arrive at the facilities (58.1%), low support from family/friends (45.2%) and lack of company from friends (32.2%)
- 55 or more: Time taken to arrive at facilities (57.1%), high cost (50.0%) and lack of company from friends (42.9%)

The top three most selected environmental barriers for each age range for women were (Appendix 12):

- 15-24 years: Time taken to arrive at facilities (58.4%), low support from family/friends (48.3%) and lack of company from friends (40.4%)
- 25-39 years: Time taken to arrive at facilities (61.4%), low support from family/friends (58.6%) and high cost (34.4%)
- 40-54 years: Low support from family/friends (54.3%), time taken to arrive at facilities (52.2%) and low modality communication (39.1%)
- 55 or more: Lack of company from friends (51.7%), low support from family/friends (51.7%) and high cost (48.2%)

5.3.2. Comparison of environmental barriers between genders

It was found significant statistical differences between genders for the barrier low support from family/friends with χ^2 (1) = 12.531; p < .001 (Appendix 13).

The results show that low support from family/friends was more frequently selected for women than men.

5.3.3. Comparison of environmental barriers between ages

It was found significant statistical differences between age ranges only in high cost with χ^2 (3) = 9.036; p = .029 (Appendix 14).

The results show that the variable high cost was more frequently selected for participants with ages equal or superior to 55 years, followed by 15-24 years.

6. Conclusions

This research focused on the difference of motivations, limitations and barriers in practising sport and physical activity between genders and age ranges.

From the sample characterisation, we can see that the respondents were mostly coaches/trainers and directors of modalities such as football, swimming and gymnastics. In their perception, on average women have a higher rate of abandonment in all age ranges than men, and December and January are the months where it is perceived that people quit more, regardless their age.

It adds contributes for a better understanding of the sports reality in Lisbon, by including variables ranging from socio-economic to motivational variables. This research proves that when strategies are being developed to increase participation in physical activity or sport, different groups must be taken in account. Therefore, different policies and strategies should be applied for each group.

6.1. Motivations

In general, the most selected motivations to adhere and maintain participation were health, physical condition, spirit of competition, fun and physical appearance.

Nevertheless, interesting conclusions can be made regarding genders. While women seem to be more motivated than men by extrinsic motivations, related to their image, once there are significantly more motivated by physical appearance, weight control and self-esteem, in contrast, men seem to care more about intrinsic motivations, related to competition and social reasons than women (Physical performance and condition, spirit of competition, fun and spend time with friends).

The rest of the variables were not considered important when explaining differences in participation between genders.

Throughout life, it is concluded that motivations change as people age. The most important motivations evolve and pass from social and competition motivations (such as physical performance, spirit of competition, acquire new skills and make new friends) in younger individuals (15-24 years) for physical appearance in individuals with 25-39 years and physical condition in 40-54 years individuals. When reaching a higher age, the motivations

transfer to a more health context, concerning mainly about health, relax and counteract ageing effects.

In conclusion, it is possible to see during the lifetime of a person motivations change, while in an early age, social and competition factors play a more important role, when reaching an older age, they lose importance and give space to concerns about health. For gender, women are more concerned about their body image and self-esteem, while men are more concerned about questions regarding competition.

6.2. Individuals' Limitations

In general, the top five selected limitations for the individual were low available time, low motivation or interest, high responsibility jobs, having kids in school age and being married.

When comparing genders, it can be concluded that men are more significantly more influenced by high responsibility jobs, low motivation/interest and already practise other sport whereas for women, limitations regard more about family structure such as being married and having kids in school age, in addition to not like competitive activities. The rest of the variables were not considered important when explaining differences in participation between genders.

For ages between 15 and 24 years, it is concluded that participation can be constrained by time spent in other leisure activities, low education, smoking, low motivation/interest, not liking competitive activities and already practise another sport. For people with ages between 25 and 39 years, low available time, being married and having kids in school age are the barriers with more importance in constraining participation. Finally, for people with ages between 40-54 years having high responsibility jobs is the variable more important and for people with 55 years or more years, the factors that forbid participation are low income, health limitations, having a disability/illness and being afraid of injuries.

Summing up, women are more constricted due to family factors, while men are more constricted because of professional reasons and factors related to the practise itself. When it comes to comparing differences in age ranges, it is possible to conclude that factors related to time management and family structure in lower ages, give space to factors relating to health while age increases.

6.3. Environmental Barriers

The environmental barriers that were most selected by the respondents were: time taken to arrive at the facility, low support from family/friends, high cost, lack of company from friends and quality of the accessible facilities.

When it comes to gender differences, environmental barriers are only seen to influence participation in women, affected by the low support from family/friends. The rest of the variables were not significant to explain differences in participation between men and women.

Only high cost was considered important in explaining participation differences between ages. More specifically, it is the environmental barrier constraining participation for people with 55 years or more and with ages between 15-24 years. For people with ages between 25 and 54 years, there are no relevant environmental barriers influencing participation.

7. Managerial Implications

In order to develop policies and communication strategies to increase participation in physical activity and sport, the City Council and sporting organisations such as gyms or clubs must understand and have in mind that not all individuals are impacted in the same way. In fact, when trying to attract participants is essential to segment the market and remind the motivational and restraining factors for each group. Namely:

For women it must be considered the following points:

- Motivational factors: physical appearance, weight control and self-esteem.
- Restraining factors: being married, having kids in school age, not liking competitive activities and having low support from family or friends.

For men, the motives and limitations change. In order to change participation, the following points must be taken into account:

- Motivational factors: physical performance, competition spirit, fun and spend time with friends
- Restraining factors: high responsibility jobs, low motivation/interest and already practise another sport.

In what concerns to different age ranges, if aiming at a lower age range, mainly students (15-24 years):

- Motivational factors: physical performance, spirit of competition and develop new skills
- Restraining factors: time spent in other leisure activities, low education, smoking, low motivation/interest, not liking competitive activities, already practising another sport and high cost

For middle-aged adults (25-39 years):

- Motivational factors: physical appearance
- Restraining factors: low available time, being married and having kids in school age

For adults with 40-54 years:

- Motivational factors: Physical condition

- Restraining factors: high responsibility jobs

For people with 55 years or more (mainly reformed):

- Motivational factors: Health, relax and counteract ageing effects
- Restraining factors: low income, health limitations, having a disability/illness, being afraid of injuries and high cost

8. Limitations and further research

In this study, it was not analysed the frequency and duration of practise, that is, professionals were only asked about the factors that constrained or motivated people and not about duration or periodicity of participation. Further research should focus on analysing these factors, once they are essential to understand the profile of the population, as well as the benefits that derive from practising sport or physical activity.

The collected information refers to the professional opinion of people who work in the sport context and not to the personal opinion of sport or physical activity participants. Besides, in the analysis it was not made segmentation by sport and it was an analysis for general participation when people could be motivated and constrained by different reasons when asked for different activities. In the future, a similar study should be conducted on practitioners in order to collect their opinion on the matter and it would also be interesting to analyse the different motivations in different sports. The segmentation of the motivations and limitations by sport would provide a more detailed analysis of the market.

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Annexes

Appendix 1 – Online questionnaire in Portuguese

No âmbito da Candidatura a Lisboa Capital Europeia do Desporto 2021, a Câmara Municipal de Lisboa vem solicitar a sua colaboração no estudo sobre a prática desportiva, que está a ser desenvolvido pelo INDEG-ISCTE, respondendo ao questionário apresentado em seguida. A sua informação será tratada no âmbito deste estudo de forma anónima. Agradecemos desde já a sua colaboração.

A. Identificação da sua atividade desportiva

A1.Que modalidade(s) treina/dirige?_____

A2.Em que instituição exerce a sua atividade?_____

A3.Que função desempenha? ❑ Dirigente (1); ❑ Treinador (2); ❑ Monitor (3); ❑ Outra (4) Qual?_____(5)

A4.Qual o número de desportistas que treina/dirige _____

B. Motivações e Condicionantes à Prática Desportiva

B.1: Na sua perspetiva, das seguintes motivações apresentadas na tabela, selecione com (x) as TRÊS em cada segmento e em cada sexo, que considera mais importantes para motivar indivíduos a praticarem desporto ou atividade física, dentro das faixas etárias apresentadas.

Segmentos/ Variáveis	**15-24 anos (sobretudo estudantes)**		**25-39 anos**		**40-54 anos**		**>55 anos (sobretudo reformados)**	
Sexo	a1) Masc.	b1) Fem.	a2) Masc.	b2) Fem.	a4) Masc.	b4) Fem.	a5) Masc.	b5) Fem.
B1. Motivações								
B1.1. Saúde								
B1.2.Aparência Física								
B1.3.Performance Física								
B1.4.Condição física								
B1.5.Espírito de Competição								
B1.6.Divertimento								
B1.7. Relaxar								

B1.8.Controlo de Peso								
B1.9.Integração na sociedade								
B1.10.Autoestima								
B1.11.Passar tempo com amigos								
B1.12.Conhecer pessoas de outras culturas								
B1.13.Contrariar os efeitos da idade								
B1.14.Adquirir novas aptidões								
B1.15.Fazer novas amizades								
B1.16.Outra. Qual?								

B.2: Na sua perspetiva, das seguintes limitações apresentadas na tabela, selecione com (x) as <u>TRÊS</u> em cada segmento e em cada sexo que considera ser as maiores barreiras à prática desportiva e atividade física.

Segmentos/ Variáveis	**15-24 anos (Principalmente estudantes)**		**25-39 anos**		**40-54 anos**		**>55 (principalmente reformados)**	
Sexo	a1) Masc.	b1) Fem.	a2) Masc.	b2) Fem.	a4) Masc.	b4) Fem.	a5) Masc.	b5) Fem.
B2. Condicionantes do indivíduo								
B2.1. Baixo Rendimento								
B2.2. Pouco tempo disponível								
B2.3. Tempo despendido em outras atividades de lazer								
B2.3.1.Em que atividades de lazer?								

B2.4. Baixo nível de escolaridade								
B2.5. Ser casado/a								
B2.6. Existência de filhos em idade escolar								
B2.7.Cargos profissionais de responsabilidade								
B2.8.Fumar								
B2.19.Consumir álcool								
B2.10.Limitações de saúde								
B2.11.Ter uma doença ou deficiência								
B2.12.Não ter acesso a veículo individual								
B2.13. Falta de motivação ou interesse								
B2.14. Medo de lesões								
B2.15. Não gostar de atividades competitivas								
B2.16. Sentimento de discriminação face a outros participantes								
B2.17. Já praticar outro tipo de desporto								
B2.18. Outra. Qual?								

B.3: Na sua perspetiva, das seguintes limitações apresentados selecione com (x) as <u>TRÊS</u> em cada segmento e em cada sexo que considera terem um efeito importante na diminuição da prática desportiva ou da atividade física.

Segmentos/ Variáveis	**15-24 anos (sobretudo estudantes)**		**25-39 anos**		**40-54 anos**		**>55 (sobretudo reformados)**	
Sexo	a1) Masc.	b1) Fem.	a2) Masc.	b2) Fem.	a4) Masc.	b4) Fem.	a5) Masc.	b5) Fem.

B3. Condicionantes do Meio Envolvente								
B3.1.Qualidade das instalações acessíveis								
B3.2.Quantidade de instalações acessíveis								
B3.3. Tempo de deslocação até às instalações								
B3.4. Falta de apoio familiar e dos amigos								
B3.5. Custo elevado								
B3.6. Falta de divulgação da sua modalidade								
B3.7.Falta de diversidade de modalidades nas suas instalações								
B3.8.Falta de companhia de amigos								
B3.9.Não haver transportes públicos para facilitar o acesso								
B3.10. Outra. Qual?								

C. Tendo em conta a sua experiência, responda às seguintes questões relativamente ao abandono da prática desportiva e atividade física em cada um dos grupos.

	1) 15-24 anos (sobretudo estudantes)	2) 25-39 anos	3) 40-54 anos	4) >55 (sobretudo reformados)
C1. Qual é a % habitual de abandono durante o ano de cada um dos grupos?				
C2. Qual é o mês em que se verifica uma % superior de abandono?				

C3. Qual é o principal motivo de abandono de cada um dos grupos?				
C4.Indique, por favor, uma sugestão de atuação para a Câmara Municipal de Lisboa para diminuir a taxa de abandono.				
C5. Indique, por favor, uma sugestão de atuação para a Câmara Municipal de Lisboa incentivar o aumento da prática desportiva.				

D. Dados Pessoais:

D1. Sexo: Masculino ❑(1) ; Feminino ❑(2); **D2.** Número de anos a exercer a sua função:_____

D3.
Nome:_____
_____

D4. Idade:_____

Agradecemos a sua colaboração. No caso de pretender aceder ao resumo das conclusões deste estudo, deixe-nos por favor o seu email.
_____

Appendix 2 – Total of clubs by district and autonomous region (2006-2016) Source: IPDJ

NÚMERO TOTAL DE CLUBES, POR DISTRITOS E RA (2006-2016)

Distritos/RA	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
TOTAL	**12677**	**12173**	**11709**	**11618**	**11291**	**10862**	**10615**	**10236**	**10455**	**10576**	**10765**
Aveiro	817	797	848	902	869	886	893	851	862	820	769
Beja	229	300	223	203	211	200	200	227	199	207	204
Braga	739	731	815	765	739	741	711	689	773	721	744
Bragança	111	109	124	114	111	106	94	90	96	106	92
Castelo Branco	792	185	178	158	160	167	170	197	175	159	168
Coimbra	679	658	615	566	521	528	523	442	476	492	527

Évora	227	234	208	214	219	223	219	225	225	231	223
Faro	625	656	641	624	626	587	574	543	544	549	567
Guarda	138	147	127	167	183	146	142	145	159	151	144
Leiria	533	532	516	505	507	503	489	476	490	491	487
Lisboa	2.431	2.371	2.241	2.159	2.072	1.999	1.996	1.858	1.856	1.959	1.988
Portalegre	174	166	167	157	160	133	121	116	116	121	130
Porto	2.259	2.284	2.046	2.021	2.019	1.907	1.847	1.681	1.701	1.778	1.799
Santarém	602	580	574	541	522	515	461	515	490	524	510
Setúbal	758	754	736	764	703	682	637	638	639	683	710
Viana do Castelo	236	244	235	244	233	231	235	233	221	247	241
Vila Real	191	253	210	215	225	194	192	179	214	198	206
Viseu	349	342	345	439	338	293	300	296	332	309	341
Açores	441	448	456	456	454	474	468	472	502	468	482
Madeira	346	382	404	404	419	347	343	363	385	362	433

Appendix 3 – Percentage of participants and clubs in Portugal (2016) Source: IPDJ

	Nr. Of participants Lisbon	**Nr. Of participants Portugal**	**% participants Lisbon/Portugal**	**Nr. clubs Lisbon**	**Nr. clubs Portugal**	**% clubs Lisbon/Portugal**
Total	105020	590668	18%	1988	10765	18%

Appendix 4 – Total number of participants by district and autonomous region (2006-2016) Source: IPDJ

NÚMERO TOTAL DE PRATICANTES, POR DISTRITOS E REGIÕES AUTÓNOMAS (2006-2016)

Distritos e RA	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
TOTAL	**449006**	**484090**	**489428**	**513005**	**522433**	**523168**	**524093**	**523995**	**543578**	**566366**	**590668**
Aveiro	34210	35686	39956	41064	39942	42199	42127	43941	45952	45272	46770
Beja	5425	6216	6372	6398	6887	6396	6686	6143	6347	7134	7497
Braga	27074	29469	32580	33207	34154	34723	36018	36457	39248	37887	37714
Bragança	2936	3466	3785	3662	4074	4130	4161	3871	4017	4056	4009
Castelo Branco	5667	5985	5665	6039	6125	6164	6206	6167	6227	6203	6966
Coimbra	22372	21902	21903	21606	21119	19640	19928	20542	21499	22685	24430
Évora	6717	7080	7615	8015	7879	8051	7946	9660	9320	10514	10239
Faro	25435	27272	27229	27380	26490	27058	26298	25942	27108	30737	33357
Guarda	4837	7154	6841	7570	8193	8919	9267	9947	11610	12168	10602
Leiria	22180	22303	22546	23215	22546	24157	24599	24298	28194	29635	32551
Lisboa	95318	103689	94370	100653	99335	102323	102836	100577	103473	102104	105020
Portalegre	4970	5292	6638	6106	6342	5326	4857	4276	4631	5507	5741
Porto	75742	82897	80980	91475	101612	97805	96856	94192	94964	108454	109760

Santarém	17244	19146	20366	20358	19822	19867	20240	21286	20407	21985	22317
Setúbal	35593	36613	36368	38915	40986	40569	40450	39974	39168	36432	39884
Viana do Castelo	10035	10737	11756	12312	12162	11188	11243	10779	10638	12226	13026
Vila Real	7316	8452	9605	8575	8414	8201	7904	7357	9299	10407	12692
Viseu	10894	14044	17874	17740	17962	17950	19136	22189	24190	23665	24970
Açores	19477	20205	20286	21634	20824	22421	22962	22918	22957	23434	23836
Madeira	15564	16482	16693	17081	17565	16081	14373	13479	14329	15861	19182
Individual / Fora do País	0	0	0	0	0	0	0	0	0	0	105

Appendix 5 – Total and % of men and women participating (2006-2016) Source: IPDJ

	2006		2016		%
Homens	357510	80%	422046	71%	18%
Mulheres	91496	20%	168622	29%	84%
Total	449006		590668		32%

Appendix 6 – Percentage and frequency of the motivations by gender and age

	Men								Women								Total	
	15-24		25-39		40-54		≥55		15-24		25-39		40-54		≥55			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Health	28	22.8	42	44.2	46	74.2	34	81.0	26	29.2	38	54.3	33	71.7	25	86.2	272	48.9
Physical appearance	21	17.1	24	25.3	10	16.1	4	9.5	45	50.6	33	47.1	21	45.7	6	20.7	164	29.5
Physical performance	31	25.2	26	27.4	10	16.1	4	9.5	18	20.2	8	11.4	5	10.9	3	10.3	105	18.9
Physical condition	47	38.2	45	47.4	34	54.8	11	26.2	28	31.5	29	41.4	18	39.1	9	31.0	221	39.7
Spirit of competition	68	55.3	36	37.9	10	16.1	2	4.8	27	30.3	15	21.4	5	10.9	2	6.9	165	29.7
Fun	44	35.8	28	29.5	18	29.0	19	45.2	25	28.1	11	15.7	7	15.2	6	20.7	158	28.4
Relax	10	8.1	14	14.7	10	16.1	16	38.1	7	7.9	17	24.3	11	23.9	4	13.8	89	16.0
Weight control	3	2.4	7	7.4	12	19.4	4	9.5	25	28.1	21	30.0	11	23.9	9	31.0	92	16.5
Integration in society	14	11.4	8	8.4	2	3.2	2	4.8	6	6.7	6	8.6	2	4.3			40	7.2
Self-esteem	25	20.3	12	12.6	8	12.9	10	23.8	25	28.1	14	20.0	10	21.7	7	24.1	111	20.0
Spend time with	22	17.9	18	18.9	9	14.5	6	14.3	15	16.9	4	5.7	2	4.3	4	13.8	80	14.4

friends																		
Meet people from other cultures	2	1.6	3	3.2					1	1.1	2	2.9					8	1.4
Counteract ageing effects	1	.8	5	5.3	8	12.9	13	31.0	1	1.1	4	5.7	7	15.2	12	41.4	51	9.2
Develop new skills/mastery	19	15.4	8	8.4	6	9.7			11	12.4	7	10.0	3	6.5			54	9.7
Make new friendships	9	7.3					1	2.4	6	6.7	1	1.4					17	3.1
Other	4	3.3							1	1.1							5	.9

Appendix 7 – Comparison of motivations between genders – Total sample

	Men		Women		χ^2	p
	N	%	N	%		
Health					1.672	.196
No	172	53.4	112	47.9		
Yes	150	46.6	122	52.1		
Physical appearance					45.931***	<.001
No	263	81.7	129	55.1		
Yes	59	18.3	105	44.9		
Physical performance					5.003*	.025
No	251	78.0	200	85.5		
Yes	71	22.0	34	14.5		
Physical condition					2.502	.114
No	185	57.5	150	64.1		
Yes	137	42.5	84	35.9		
Spirit of competition					14.776***	<.001
No	206	64.0	185	79.1		
Yes	116	36.0	49	20.9		
Fun					11.105***	.001
No	213	66.1	185	79.1		
Yes	109	33.9	49	20.9		
Relax					.131	.718
No	272	84.5	195	83.3		
Yes	50	15.5	39	16.7		
Weight control					39.770***	<.001
No	296	91.9	168	71.8		
Yes	26	8.1	66	28.2		

Integration in society					.888	.346
No	296	91.9	220	94.0		
Yes	26	8.1	14	6.0		
Self-esteem					3.981*	.046
No	267	82.9	178	76.1		
Yes	55	17.1	56	23.9		
Spend time with friends					4.502*	.034
No	267	82.9	209	89.3		
Yes	55	17.1	25	10.7		
Meet people from other cultures					.070	.791
No	317	98.4	5	1.6		
Yes	5	1.6	3	1.3		
Counteract ageing effects					.570	.450
No	295	91.6	210	89.7		
Yes	27	8.4	24	10.3		
Develop new skills					.251	.616
No	289	89.8	213	91.0		
Yes	33	10.2	21	9.0		
Make new friends					.006	.938
No	312	96.9	227	97.0		
Yes	10	3.1	7	3.0		
Other					1.010	.315
No	318	98.8	233	99.6		
Yes	4	1.2	1	.4		

* $p \leq .05$; *** $p \leq .001$.

Appendix 8 – Comparison of motivations between age ranges – Total sample

	15-24		25-39		40-54		≥55		χ^2	p
	N	%	N	%	N	%	N	%		
Health									105.221***	<.001
No	158	74.5	85	51.5	29	26.9	12	16.9		
Yes	54	25.5	80	48.5	79	73.1	59	83.1		
Physical appearance									10.437*	.015
No	146	68.9	108	65.5	77	71.3	59	83.1		
Yes	66	31.1	57	34.5	31	28.7	10	14.1		
Physical performance									8.329*	.040
No	163	76.9	131	79.4	93	86.1	64	90.1		
Yes	49	23.1	34	20.6	15	13.9	7	9.9		
Physical condition									10.640*	.014
No	137	64.6	91	55.2	56	51.9	51	71.8		
Yes	75	35.4	74	44.8	52	48.1	20	28.2		
Spirit of competition									55.954***	<.001
No	117	55.2	114	69.1	93	86.1	67	94.4		
Yes	95	44.8	51	30.9	15	13.9	4	5.6		
Fun									6.717	.081
No	143	67.5	126	76.4	83	76.9	46	64.8		

Yes	69	32.5	39	23.6	25	23.1	25	35.2		
Relax									19.771***	<.001
No	195	92.0	134	81.2	87	80.6	51	71.8		
Yes	17	8.0	31	18.8	21	19.4	20	28.2		
Weight control									3.657	.301
No	181	86.8	137	83.0	85	78.7	58	81.7		
Yes	28	13.2	28	17.0	23	21.3	13	18.3		
Integration in society									6.013	.111
No	192	90.6	151	91.5	104	96.3	69	97.2		
Yes	20	9.4	14	8.5	4	3.7	2	2.8		
Self-esteem									5.005	.171
No	162	76.4	139	84.2	90	83.3	54	76.1		
Yes	50	23.6	26	15.8	18	16.7	17	23.9		
Spend time with friends									3.320	.345
No	175	82.5	143	86.7	98	89.8	61	85.9		
Yes	37	17.5	22	13.3	11	10.2	10	14.1		
Meet people from other cultures									5.561	.135
No	209	98.6	160	97.0	108	100.0	71	100.0		
Yes	3	1.4	3	3.0						
Counteract ageing effects									80.634***	<.001
No	210	99.1	156	94.5	93	86.1	46	64.8		
Yes	2	.9	9	5.5	15	13.9	25	35.2		
Develop new skills									12.707**	.005
No	182	85.8	150	90.9	99	91.7	71	100.0		
Yes	30	14.2	15	9.1	9	8.3				
Make new friends									18.950***	<.001
No	197	92.9	164	99.4	108	100.0	70	98.6		
Yes	15	7.1	1	.6			1	1.4		
Other									8.187*	.042
No	207	97.6	165	100.0	108	100.0	71	100.0		
Yes	5	2.4								

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$.

Appendix 9 – Frequency and percentage of the individual limitations by gender and age

	Men								Women								Total	
	15-24		25-39		40-54		≥55		15-24		25-39		40-54		≥55			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Low income	27	22.0	9	9.5	10	16.1	15	35.7	20	22.5	9	12.9	6	13.0	9	31.0	105	18.9
Low available time	77	62.6	75	78.9	39	62.9	12	28.6	67	75.3	53	75.7	30	65.2	12	41.4	365	65.6
Time spent in other leisure	15	12.5	1	1.1					11	12.4	3	4.3	2	4.3	1	3.4	33	5.9

activities																		
Low education	12	9.8					2	4.8	6	6.7					1	3.4	21	3.8
Being married	5	4.1	31	32.6	14	22.6	4	9.5	13	14.6	27	38.6	16	34.8	10	34.5	120	21.6
Having kids in school age	10	8.1	55	57.9	16	25.8	6	14.3	19	21.3	53	75.7	19	41.3	1	3.4	179	32.2
High responsibility jobs	26	21.1	46	48.4	39	62.9	17	40.5	17	19.1	26	37.1	22	47.8	6	20.7	199	35.8
Smoking	7	5.7	2	2.1					2	2.2	1	1.4					12	2.2
Drinking alcohol	3	2.4	1	1.1					1	1.1	1	1.4					6	1.1
Health limitations	9	7.3	8	8.4	21	33.9	24	57.1	3	3.4	7	10.0	9	19.6	18	62.1	99	17.8
Disabilities/ illness	3	2.4	7	7.4	5	8.1	6	14.3	3	3.4	1	1.4	4	8.7	7	24.1	36	6.5
Not having vehicle	15	12.2	4	4.2	3	4.8	1	2.4	8	9.0	5	7.1	3	6.5	2	6.9	41	7.4
Low motivation/interest	72	58.5	26	27.4	22	35.5	19	45.2	47	52.8	14	20.0	9	19.6	10	34.5	219	39.4
Being afraid of injuries	6	4.9	1	1.1	6	9.7	11	26.2	7	7.9	2	2.9	5	10.9	3	10.3	41	7.4
Not like competitive activities	14	11.4	1	1.1	3	4.8	3	7.1	17	19.1	4	5.7	5	10.9	2	6.9	49	8.8
Feeling discriminated against other participants	13	10.6	7	7.4	2	3.2	2	4.8	11	12.4	4	5.7	4	8.7	3	10.3	46	8.3
Already practise another sport	24	19.5	1	1.1	2	3.2	2	4.8	4	4.5					1	3.4	34	6.1
Other	10	8.1	1	1.1	1	1.6	2	4.8	11	12.4			1	2.2	1	3.4	27	4.9

Appendix 10 – Comparison of the individuals' limitations between genders – Total sample

	Men		Women		χ^2	p
	N	%	N	%		
Low income					.002	.967

No	261	81.1	190	81.2		
Yes	61	18.9	44	18.8		
Low available time					2.300	.129
No	119	37.0	72	30.8		
Yes	203	63.0	162	69.2		
Time spent in other leisure activities					1.280	.258
No	306	95.0	217	92.7		
Yes	16	5.0	17	7.3		
Low education					.686	.408
No	308	95.7	227	97.0		
Yes	14	4.3	7	3.0		
Being married					10.470***	.001
No	268	83.2	168	71.8		
Yes	54	16.8	66	28.2		
Having kids in school age					9.388**	.002
No	235	73.0	142	60.7		
Yes	87	27.0	92	39.3		
High responsibility jobs					5.221*	.022
No	194	60.2	163	69.7		
Yes	128	39.8	71	30.3		
Smoking					1.469	.225
No	313	97.2	231	98.7		
Yes	9	2.8	3	1.3		
Drinking alcohol					.191	.662
No	318	98.8	232	99.1		
Yes	4	1.2	2	.9		
Health Limitations					1.097	.295
No	260	80.7	197	84.2		
Yes	62	19.3	37	15.8		
Having a disability/illness					.003	.958
No	301	93.5	219	93.6		
Yes	21	6.5	15	6.4		
Not having vehicle					.060	.807
No	299	92.9	216	92.3		
Yes	23	7.1	18	7.7		
Low motivation/interest					4.577*	.032
No	183	56.8	154	65.8		
Yes	139	43.2	80	34.2		
Being afraid of injuries					.007	.933
No	298	92.5	217	92.7		
Yes	24	7.5	17	7.3		
Not like competitive activities					4.998*	.025
No	301	9305	206	88.0		
Yes	21	6.5	28	12.0		
Feeling discriminated against other participants					.678	.410
No	298	92.5	212	90.6		
Yes	24	7.5	22	9.4		

Already practise another sport					11.139***	.001
No	293	91.0	229	97.9		
Yes	29	9.0	5	2.1		
Other					.428	.513
No	308	95.7	221	94.4		
Yes	14	4.3	13	5.6		

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$.

Appendix 11 – Comparison of individuals' limitations between age ranges – Total sample

	15-24		25-39		40-54		≥55		χ^2	p
	N	%	N	%	N	%	N	%		
Low income									19.828***	<.001
No	165	77.8	147	89.1	92	85.2	47	66.2		
Yes	47	22.2	18	10.9	16	14.8	24	33.8		
Low available time									42.973***	<.001
No	68	32.1	37	22.4	39	36.1	47	66.2		
Yes	144	67.9	128	77.6	69	63.9	24	33.8		
Time spent in other leisure activities									24.685***	<.001
No	186	87.7	161	97.6	106	98.1	70	98.6		
Yes	26	12.3	4	2.4	2	1.9	1	1.4		
Low education									23.715***	<.001
No	194	91.5	165	100.0	108	100.0	68	95.8		
Yes	18	8.5					3	4.2		
Being married									42.015***	<.001
No	194	91.5	107	64.8	78	72.2	57	80.3		
Yes	18	8.5	58	35.2	30	27.8	14	19.7		
Having kids in school age									133.136***	<.001
No	183	86.3	57	34.5	73	67.6	64	90.1		
Yes	29	13.7	108	65.5	35	32.4	7	9.9		
High									47.080***	<.00

responsibility jobs										1
No	169	79.7	93	56.4	47	43.5	48	67.6		
Yes	43	20.3	72	43.6	61	56.5	23	32.4		
Smoking									8.412*	.038
No	203	95.8	162	98.2	108	100.0	71	100.0		
Yes	9	4.2	3	1.8						
Drinking alcohol									3.276	.351
No	208	98.1	163	98.8	108	100.0	71	100.0		
Yes	4	1.9	2	1.2						
Health limitations									120.213***	<.001
No	200	94.3	150	90.9	78	72.2	29	40.8		
Yes	12	5.7	15	9.1	30	27.8	42	59.2		
Having a disability/illness									22.410***	<.001
No	206	97.2	157	95.2	99	91.7	58	81.7		
Yes	6	2.8	8	4.8	9	8.3	13	18.3		
Not having vehicle									6.192	.103
No	189	89.2	156	94.5	102	94.4	68	95.8		
Yes	23	10.8	9	5.5	6	5.6	3	4.2		
Low motivation/interest									45.977***	<.001
No	93	43.9	125	75.8	77	71.3	42	59.2		
Yes	119	10.8	9	5.5	6	5.6	3	4.2		
Being afraid of injuries									25.025***	<.001
No	199	93.9	162	98.2	97	89.2	57	80.3		
Yes	13	6.1	3	1.8	11	10.2	14	19.7		
Not like competitive activities									16.312***	<.001
No	181	85.4	160	97.0	100	92.6	66	93.0		
Yes	31	14.6	5	3.0	8	7.4	5	7.0		
Feeling									4.349	.226

discriminated against other participants										
No	188	87.7	154	93.3	102	94.4	66	93.0		
Yes	24	11.3	11	6.7	6	5.6	5	7.0		
Already practise another sport									31.158***	<.001
No	184	86.8	164	99.4	106	98.1	68	95.8		
Yes	28	13.2	1.6	2	1.9	3	4.2	.6		
Other									20.321***	<.001
No	191	90.1	164	99.4	106	98.1	68	95.8		
Yes	21	9.9	1	.6	2	1.9	3	4.2		

* $p \leq .05$; *** $p \leq .001$.

Appendix 12 - Frequency and percentage of the environmental barriers by gender and age

	Men								Women								Total	
	15-24		25-39		40-54		≥55		15-24		25-39		40-54		≥55			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Quality of infrastructures	37	30.1	32	33.7	19	30.6	9	21.4	28	31.5	18	25.7	11	23.9	5	17.2	159	28.6
Quantity of infrastructures	31	25.2	30	31.6	17	27.4	10	23.8	19	21.3	15	21.4	9	19.6	5	17.2	136	24.2
Time taken to arrive at the facilities	65	52.8	56	58.9	36	58.1	24	57.1	52	58.4	43	61.4	24	52.2	13	44.8	313	56.3
Low support from family/friends	41	33.3	38	40.0	28	45.2	15	35.7	43	48.3	41	58.6	25	54.3	15	51.7	246	44.2
High cost	58	47.2	37	38.9	19	30.6	21	50.0	34	38.2	24	34.3	13	28.3	14	48.3	220	39.6
Low modality communic	37	30.1	20	21.1	18	29.0	12	28.6	24	27.0	21	30.0	18	39.1	7	24.1	157	28.2

ation																		
Low diversity of offered modalities in the facilities	14	11.4	16	16.8	8	12.9	5	11.9	6	6.7	7	10.0	6	13.0	3	10.3	65	11.7
Lack of company from friends	35	28.5	31	32.6	20	32.3	18	42.9	36	40.4	22	31.4	16	34.8	15	51.7	193	34.7
Low availability of public transportation	22	17.9	11	11.6	12	19.4	4	9.5	13	14.6	11	15.7	7	15.2	6	20.7	86	15.5
Other	8	6.5	5	5.3	6	9.7	8	19.0	12	13.5	8	11.4	6	13.0	4	13.8	57	10.3

Appendix 13 – Comparison of environmental barriers between genders – Total sample

	Men		Women		χ^2	p
	N	%	N	%		
Quality of infrastructures					.874	.350
No	225	69.9	172	73.5		
Yes	97	30.1	62	26.5		
Quantity of infrastructures					3.408	.065
No	234	72.7	186	79.5		
Yes	88	27.3	48	20.5		
Time taken to arrive at the facilities					.002	.963
No	141	43.8	102	43.6		
Yes	181	56.2	132	56.4		
Low support from family/friends					12.531***	<.001
No	200	62.1	110	47.0		
Yes	122	37.9	124	53.0		
High cost					1.778	.182
No	187	58.1	149	63.7		
Yes	135	41.9	85	36.3		
Low modality communication					.561	.454
No	235	73.0	164	70.1		
Yes	87	27.0	70	29.9		
Low diversity of offered modalities in the facilities					2.050	.152
No	279	86.6	212	90.6		
Yes	43	13.4	22	9.4		

Lack of company from friends					1.967	.161
No	218	67.7	145	62.0		
Yes	104	32.3	89	38.0		
Low availability of public transports					.037	.848
No	273	84.8	197	84.2		
Yes	49	15.2	37	15.8		
Other					2.898	.089
No	295	91.6	204	87.2		
Yes	27	8.4	30	12.8		

*** $p \leq .001$.

Appendix 14 – Comparison of environmental barriers between age ranges – Total sample

	15-24		25-39		40-54		≥55		χ^2	p
	N	%	N	%	N	%	N	%		
Quality of infrastructures									3.454	.327
No	147	69.3	115	69.7	78	72.2	57	80.3		
Yes	65	30.7	50	30.3	30	27.8	14	19.7		
Quantity of infrastructures									1.230	.746
No	162	76.4	120	72.7	82	75.9	56	78.9		
Yes	50	23.6	45	27.3	26	24.1	15	21.1		
Time taken to arrive at the facilities									1.555	.670
No	95	44.8	66	40.0	48	44.4	34	47.9		
Yes	117	55.2	99	60.0	60	55.6	37	52.1		
Low support from family/friends									3.854	.278
No	128	60.4	86	52.1	55	50.9	41	57.7		
Yes	84	39.6	79	47.9	53	49.1	30	42.3		
High cost									9.036*	.029
No	120	56.6	104	63.0	76	70.4	36	50.7		
Yes	92	43.4	61	37.0	32	29.6	35	49.3		
Low modality communication									2.426	.489
No	151	71.2	124	75.2	72	66.7	52	73.2		
Yes	61	28.8	41	24.8	36	33.3	19	26.8		
Low diversity of offered modalities in the facilities									2.036	.565
No	192	90.6	142	86.1	94	87.0	63	88.7		
Yes	20	9.4	23	13.9	14	13.0	8	11.3		
Lack of company from friends									5.057	.168
No	141	66.5	112	67.9	72	66.7	38	53.5		
Yes	71	33.5	53	32.1	36	33.3	33	46.5		
Low availability of public									1.228	.746

transportation										
No	177	83.5	143	86.7	89	82.4	61	85.9		
Yes	35	16.5	22	13.3	19	17.6	10	14.1		
Other									4.663	.198
No	192	90.6	152	92.1	96	88.9	59	83.1		
Yes	20	9.4	13	7.9	12	11.1	12	16.9		

* $p \leq .05$.