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## **The Impact of Covid-19 on the German Online Home Sports Industry: An Analysis based on S-O-R and Structural Equation Modeling**

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Master in Marketing

Supervisor:

Daniela Langaro da Silva do Souto Ph.D, Assistant Professor, Department of Marketing, Strategy and Operations (DMOG), ISCTE Business School

October, 2020



**BUSINESS  
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## Resumo

A indústria do desporto online tem crescido nos últimos anos e especialmente desde o surto de Covid-19. Uma melhor compreensão dos fatores que levam as pessoas a praticar desporto através de plataformas online, e a continuar com esta prática no futuro, seria um grande benefício para os comerciantes e fornecedores desta área. Até à data, nenhum modelo empírico testado produziu relações objetivas entre o estímulo de atletas de desportos online e variações no comportamento dos mesmos. Com base no modelo SOR, este estudo investiga a forma como cinco estímulos diferentes de aulas de desporto online afetam o organismo dos utilizadores em termos de emoção e atitude, e como influenciam ainda mais a satisfação e intenção dos utilizadores de continuarem. Foram recolhidos dados de 303 participantes. As hipóteses foram testadas utilizando modelos de equações estruturais. Adicionalmente, foi realizada uma análise multigrupo para observar se existem diferenças significativas no modelo estrutural entre os participantes das aulas de desporto online síncronas e assíncronas. Os resultados revelaram que o valor hedónico e a reputação do treinador online têm maior efeito indireto sobre a intenção dos participantes de continuar. O prazer foi avaliado como sendo a dimensão emocional mais importante para a intenção final contínua, enquanto que a dominância não teve impacto significativo, nem na satisfação nem na intenção de continuar. A atitude e a satisfação tiveram também uma influência direta significativa e os resultados da análise multigrupo indicaram que os dois grupos diferem apenas na relação entre o valor hedónico e a excitação.

**Palavras-chave:** Indústria do desporto online, Classes síncrona, Classes assíncrona, Modelo SOR, Modelos de equações estruturais

**JEL:** M31 – Marketing and Advertising: Marketing

**JEL:** M39 – Marketing and Advertising; Other





## Abstract

The online home sports industry grew tremendously in the last years and especially since the emergence of quarantine measurements and new restrictions caused by the outbreak of Covid-19. A better understanding of what drives practitioners to participate in online sports classes and to further continue with them in the future would benefit sport marketers and sport classes providers greatly. To date, no empirically tested model has proposed predictive relationships among the online sports athletes' stimuli and behavioral variables. Based on the SOR model, this study investigated how five different stimuli of online video sports classes induces the users' organism in terms of emotion and attitude, and how it further influences users' satisfaction and intention to continue doing online classes. Data from 303 respondents were collected. The hypotheses were tested using structural equation modeling and an additional multigroup analysis was conducted to observe whether there exist significant differences in the structural model between synchronous and asynchronous online sports classes participants. In general, the results revealed that hedonic value and online coach reputation have the largest indirect effect on the participants' intention to continue. Pleasure was evaluated to be the most important emotional dimension for users to continuous following online classes, whereas dominance had no significant impact, neither on satisfaction nor on the intention to continue. Attitude and satisfaction had a significant direct influence as well and the results of the multigroup analysis indicated that the two groups (synchronous and asynchronous classes) only differ in the relationship between hedonic value and arousal.

**Keywords:** Online home sports, Synchronous classes, Asynchronous classes, Stimulus-Organism-Response model (SOR), Structural Equation Modeling (SEM)

**JEL:** M31 – Marketing and Advertising: Marketing

**JEL:** M39 – Marketing and Advertising: Other



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## List of Abbreviations

BCA	Bias-Corrected and Accelerated Bootstrap
CoV	Coronavirus
CoVs	Coronaviruses
H	Hypothesis
HTMT	Heterotrait-Monotrait Ratio
MICOM	Measurement Invariance of Composites
MGA	Multigroup Analysis
MVFA	Mobile Virtual Fitness Apps
O	Organism
PT	Persuasive Technology
R	Response
RNA	Ribonucleic Acid
RQ	Research Question
S	Stimulus
SEM	Structural Equation Modeling
S-O-R	Stimulus-Organism-Response
SRQ	Sub-Research Question
SWB	Subjective Well-being



# 1. Introduction

Nowadays, it is generally known and proven by many studies that sport positively influences our well-being (Kohl, 2001). Different sports are practiced satisfying different necessities, which can reach from the desire for communication and socialization to more primary needs such as maintaining health. However, despite of the type of sports conducted, it all contributes in fulfilling and enhancing a person's life in sustaining not only a physical, but also a psychological and social development (Pomohaci & Sopa, 2018).

This year, in the beginning of 2020, the COVID-19 pandemic turned the world upside down. On the 29<sup>th</sup> of May, already 6,909,081 coronavirus cases worldwide have been recorded and the number is still growing (Worldometer, 2020). Most industries are highly affected by this crisis, including the sports industry, which is experiencing a high loss of revenue. The pre-COVID-19 projections for the worldwide revenue were approximately 135.3 billion U.S. dollars, whereas the now adjusted estimations are about half the size of it with only 73.7 billion U.S. dollars (Two Circles, 2020). With many sport events being cancelled and new upcoming restrictions regarding the gathering of large groups, an increasing number of people globally is concerned about the situation and believes that COVID-19 will seriously affect their personal health (Ipsos, 2020).

Recent studies indicated that the exercise habits of people are changing (YouGov, 2020). Not only caused by the rigid restrictions but also due to the growing concern of the society about visiting a gym (Morning Consultant, 2020a). Thus, new methods of practicing sports from home are needed, such as the use of video conferencing for fitness classes, which is gaining a fast-growing popularity. Right at the beginning of the COVID-19 pandemic, 15 percent of respondents in the United States, aged between 18-29, were using this method already to participate in sport lessons (Morning Consultant, 2020c). Consequently, the in-home media consumption increased radically worldwide and people tend to spend more than double the time than before on Social Media, especially the Generation Z as well as the Millennials (GlobalWebIndex, 2020). The media is covered with articles and news about online sports offers as an increasing number of fitness fans it switching to online services (Becker, 2020). With the new restrictions, the easy access to Internet, and the fast-growing interest in taking online sports classes, many companies have to adapt their offers to the situation and this new uprising trend.

However, for marketers the consumer behavior plays an important role in adapting their strategies (Dooley et al., 2012). Those organizations first have to understand their customers behavior to fulfil their needs and wants as well as to be profitable in return. Only by knowing the effects of their marketing activities on the target group, they can be successful (Schiffman et al., 2010; Young et al., 2010). Thus, a better understanding of what drives practitioners to participate in online sports classes and to further continue with them in the future would benefit sport marketers and sport classes providers greatly. To date, no empirically tested model has proposed predictive relationships among the online sports athletes' stimuli and behavioral variables. Therefore, the S-O-R model is a scientifically highly acclaimed model, which helps to analyze the consumer behavior. The framework is based upon environmental psychology and presumes that every environment restrains certain stimuli (S), which evoke an organismic change of state (O) and consequently lead to an either approach or avoidance behavior as a response (R) (Mehrabian & Russell, 1974). As a matter of fact, based on this model the aim of this study is to investigate how different stimuli of online video sports classes induces the users' organism in terms of emotion and attitude, and how it further influences the users' satisfaction and intention to continue. Therefore, the research question of this study is the following:

*RQ: How can sports companies positively influence the continuous intention of their customers to keep them further engaged in online video sports classes in the long-term?*

To answer the research question, the following three sub research questions were proposed:

- a. Which are the most important stimuli (S) influencing the cognitive and emotional states (O)?*
- b. Which are the most important cognitive and affective states (O) influencing satisfaction and continuous intention (R)?*
- c. Are there any significant differences between the participants of synchronous classes and asynchronous classes?*

## 1.1 Structure of Dissertation

The dissertation is structured in six distinct parts, which are partially split up into various sub-chapters. The first chapter introduces the topic and presents a general overview of it including its relevance, the research gap as well as the objectives and final research question. The subsequent chapter presents the literature review of this research. It assesses the current literature and uses it as a foundation for the establishment of the research model, which is presented in the third chapter, also known as empirical study and methodology chapter. For the process of data compilation, primary research was conducted in form of a quantitative survey. Therefore, it includes a description of the specific measurement and research instruments, the sample and data collection. The fourth part concentrates on the data analysis and the results. A structural equation modeling paired with a multigroup analysis was carried out through SmartPLS to analyze the gathered data and to test the established hypotheses. The chapter therefore encompasses the descriptive results, the structural equation modeling consisting out of a measurement and structural model, a multigroup analysis and a final summary of all hypotheses at the end. The last part comprises the conclusion and recommendations. Here one can find a summary of the findings and discussion, theoretical and practical implications as well as limitations and further research.

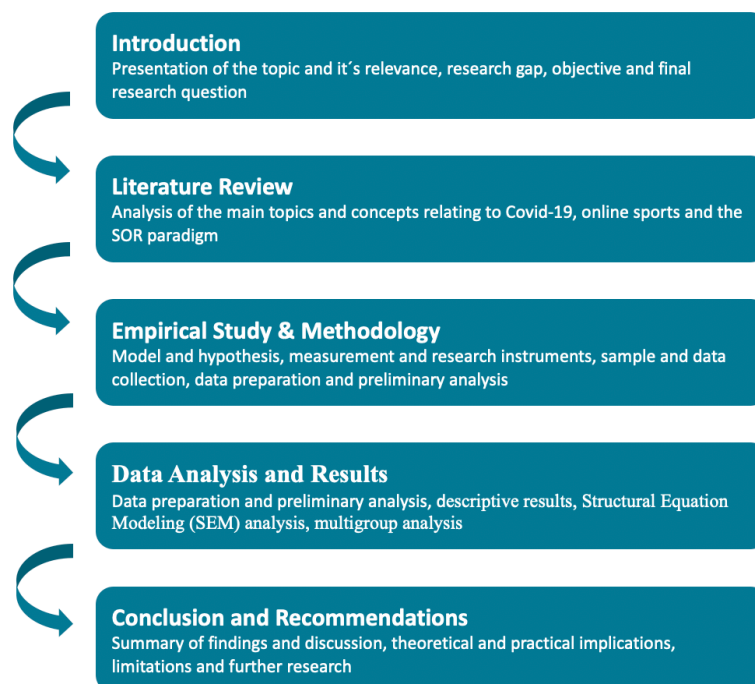


Figure 1.1 Structure of the Dissertation

(Source: own elaboration)

## 2. Literature Review

The present chapter will summarize the most relevant subjects, concepts and frameworks for this research. All the information is based upon scientific and academic literature and current statistics with a high credibility, which are mostly retrieved from Statista.

The first chapter of the introduction (2.1) gives a brief insight into the sports industry and the general benefits of pursuing sports. This topic will lead into the second one, Covid-19 and its impact on this industry (2.2). Thus, here one can understand how the pandemic has influenced the sports industry and led to an increased adaption of online home sports. The third chapter (2.3) will then define the term ‘online home sports’, as there is a lack of existing literature, and furthermore present the two types of online sports classes with an emphasis on which this research is focusing on. To better understand the nature of online sports classes, the fourth chapter (2.4) is focusing on the online behavior of sports participants, including online group dynamics and the influence of a virtual coach on the participants behavior. The fifth chapter (2.5) explores the main motivations of people to participate in sports classes and transfers the outcomes to the online context. The motivations can be seen as stimuli to take part in classes, which will help to define the stimuli for the S-O-R model at the end. Next to the main motivations, the main barriers will be defined in addition to the latter, as the main outcomes can be used as control variables for the model in the end. Last but not least, the S-O-R model and the corresponding PAD typology will be presented with its studied dimensions. All in all, the literature review will offer a first insight into this new exploratory topic so that afterwards a research model with hypotheses can be developed.

### 2.1 A Brief Introduction to Sports

#### 2.1.1 General Information on the Sports Industry

An industry is reflected by a range of economic activities of enterprises, which share similar attributes (W. Zhang et al., 2016). Defining the sports industry itself is more difficult. There exists no consensus yet on a single general definition for the sports industry and scholars do not agree on one view of this topic (Humphreys & Ruseski, 2009.; W. Zhang et al., 2016). However, one can broadly distinguish it between the broad and the narrow sense. The broad sense is considered to include all the activities, which are executed to provide these services together with all the actions it is related with. The narrow sense only includes the service sector

itself, which is contributing the sport service to society (W. Zhang et al., 2016). For this paper, as it refers to the marketing background, the broad sense of definition is applied. Despite the lack of one universal definition it is clear to state, that sport is more than a leisure activity itself and quickly turned into an organized commercial activity (Jovanovic, 2011). Today, it is an own independent industry and through globalization it resulted in international sport markets (Goldman & Johns, 2009). It is one of the industries which gained the largest benefit out of the consequences of globalization, opening up new markets and driving development (J. J. Zhang et al., 2017). New coaching opportunities overseas, the establishment of affiliate companies in foreign countries and promoting products internationally positively influences the expansion and progression of the sport industry in terms of economies (J. J. Zhang et al., 2018). However, next to all the advancements and benefits the globalized sport marketplace offers through its foreign capital and new technology, it also contributes new risks to developing economies such as poor working conditions or injustice (Sage, 2015; Van Tulder and Kolk, 2001).

The countries, which benefitted the most from the globalization are Canada and the United States, representing the world's biggest sports nations. They are equipped with a broad range of sport facilities, good infrastructure and organize large events. The industry is very important for the country's economy as it increases the GDP very quickly (Dezsényi et al., 2019). Therefore, the U.S. almost hold one third (32.5%) of the entire share of the global sports market value in 2018 (Footwear News, 2019a). In general, the market size from the global sports market grew a lot in the past decade. In 2011, the international sports market was valued at 324 billion U.S dollars and in 2018 it was already estimated at approximately 471 billion U.S. dollars (Footwear News, 2019b). By comparing leagues worldwide, Germany is with 'Bundesliga' on fifth place with the highest revenue (\$2.8B) after some American and Canadian football, baseball, soccer, basketball and hockey leagues (Dezsényi et al., 2019). Moreover, it is the country with the fourth highest sports market share after the United States, China and Japan (Footwear News, 2019a). Therefore, it can be seen as a major sports nation as well and its revenue in the sports segmented is projected to be approximately 3,517 million U.S. Dollar in 2020 and 4,469 million U.S Dollar by 2024 (Sports & Outdoor, n.d.). To conclude one could say that the global as well as the German sports industry is looking like a promising industry in the long-term.

### 2.1.2 Benefits of Physical Activity

Today, the performance of an active lifestyle is indispensable for health-conscious societies. It is proven, by scientific evidence, that sport on a regular basis, is positively influencing the general well-being (Bize et al., 2007; Kohl, 2001; Pomohaci & Sopa, 2018; Powell et al., 2011). A systematic review conducted on adult-based studies indicated a positive association between the physical activity level and the health-related quality of life (Bize et al., 2007). Depending on the volume of activity practiced, it is promoting different physiologic- and health outcomes (Powell et al., 2011). As everyone has their own reason to be active, different sports are practiced satisfying different necessities. These can reach from the desire for communication and socialization to more primary needs such as maintaining health (Pomohaci & Sopa, 2018). Another study with university students showed that besides to the before mentioned main benefits, another motive for the participation in sport activities is the mental and physical relaxation, as well as building a strong motivation (Sopa & Pomohaci, 2018).

However research has shown that despite of the type of sports performed, it contributes in fulfilling and enhancing a person's life in sustaining not only a physical-, but also a psychological and social development (Pomohaci & Sopa, 2018). The US Department of Health and Human Services recommends adults to exercise for at least 150 minutes of moderate-intensity or 75 minutes if it is a vigorous-intensity per week. It will increase the cardiovascular health as well as the overall well-being. Therefore, a small amount of time spent on practicing sports is better than none and the more time spent on physical activity, the higher the positive outcomes (Piercy Katrina L. & Troiano Richard P., 2018). Thus, even a light-intensity activity is leading to positive changes and improves health (Powell et al., 2011).

Nonetheless, an insufficiently active lifestyle increases the risk for chronic diseases. Research suggests the support and promotion of physical activity programs (Haskell et al., 2009). Moreover, studies indicate a bidirectional relationship between sport participation and adolescent mental health and suggest the promotion of youth sport programs especially for people with a poor psychosocial health (Vella et al., 2017). Thus, supportive sport programs would be psychologically and physiologically beneficial for the practitioners.



## 2.2 COVID-19 and its Impact on the Sports Industry

### 2.2.1 General Information on COVID-19

Coronaviruses, also known as *Coronaviridae*, were determined as a new virus family in the 1960s (Holmes, 1999; Yang et al., 2020). This virus family differentiates from other RNA viruses due to their intracellular budding and virion morphology (Holmes, 1999) and can cause respiratory infections to humans (WHO, 2020).

The coronavirus SARS-COV-2 is the most recent discovered coronavirus and the responsible cause for the new disease that was named as COVID-19 (Steinacker et al., 2020; Wackerhage et al., 2020; WHO, 2020). The existence of this virus was not known until the outbreak in Wuhan City, Hubei Province, China in December 2019. It is most likely that the coronavirus SARS-COV-2, similar to most other viruses in this family, originated from animals (WHO, 2020). Multiple types of CoVs are existing among different animals species and through interaction between these species, a recombination is possible, which in turn can lead to a new virus generation: the next CoV (Su et al., 2016). However, animals being the source for the new coronavirus is not finally scientifically proven yet. Research only reveals that COVID-19 can be transmitted from human-to-human (WHO, 2020).

One of the greatest dangers of this virus is that it can be easily transmitted by infected people, while some of these people do not show any symptoms. As a consequence, even people who do not seem to be affected by the virus can be transmitters and spread the virus to others without being aware of it (Steinacker et al., 2020; WHO, 2020). Indicators for the infection with the virus and the resulting disease COVID-19 are a cough, fever, changes in the sense of smell or taste, “bloodshot” eyes, and even a light diarrhea. Moreover, these symptoms can be accompanied by the feeling of tiredness and a shortness of breath (Steinacker et al., 2020). It is common that the symptoms are not very strong in the beginning of the infections, but then increase gradually. Around 80% of the infected people do not become seriously ill and recover quickly. For the other 20%, the disease can develop more dangerously and might result in a hospital treatment (WHO, 2020).

One major basic behavioral rule to prevent people from turning sick is an adequate routine for hygiene. People are recommended to wash their hands regularly for at least 30 seconds under warm water and with soap. Contact of the hands with the face as well as the contact with other people should be highly reduced. The avoidance of crowds, including group sports, is

fundamental for the own health and if there are other people in the area a minimum distance of 2 meters should be kept at all times (Steinacker et al., 2020).

Nevertheless, the possible threat of a new upcoming coronavirus was already known for a while. Already in the past, research indicated that there is a high potential of another coronavirus outbreak in the human population (Su et al., 2016) and that it will be a great possible danger for the human population in the future (Yang et al., 2020). Thus, after the emergence of SARS-CoV, MERS-CoV, and now SARS-CoV-2 it is of great importance to develop specific measurements to prevent similar outbreaks as the latter hereafter (Yang et al., 2020).

### **2.2.2 Consequences & Recommendations for Physical Activity**

The SARS-CoV-2 epidemic is an international crisis with no foreseeable end and it is the biggest threat to human health, which the world has experienced in the last 100 years (Cascella et al., 2020; Wackerhage et al., 2020; Yang et al., 2020). It cannot be yet predicted at what point everything will go back to “normal” and with the lack of a new vaccine, there is no specific antiviral treatment available at the market. Thus, a secure solution to stop the spread of the pandemic does not exist yet (Cascella et al., 2020).

As a consequence, many countries have to regulate the spread of the virus with new restrictions and quarantine, which is not only affecting the global economy, but also the lifestyle of the society (Yang et al., 2020). Specific regulations such as lockdowns are used to regulate the spread of the virus and to minimize the infection rate. This does not only influence the work, but also brings along many changes in the lifestyle and behavior as well as the sports and exercise habits of people (Aktuğ et al., 2020; Wackerhage et al., 2020). Due to the curfews in most countries, the amount of sport offers and opportunities has radically reduced. Outdoor activities such as running or bicycling are possible in some countries whereas in other regions people have to concentrate solely on the sports at home (Claussen et al., 2020). Many sport facilities internationally are closed and especially the use of shared intimate spaces such as changing rooms and showers should be strictly limited. The same counts for the use of shared equipment. It is recommended to avoid group sports and to focus on single-athlete types of sports (Steinacker et al., 2020). This change can lead to a decrease in sport activities or even an insufficient level of movement. Too less physical activity can danger the health by evoking conditions from diabetes to respiratory diseases. Therefore, it is necessary to keep moving and stay active to maintain a physical - but also mental health. Practicing sports at home and

keeping active is essential for it (Aktuğ et al., 2020). An adequate amount of sleep and some moderate exercise will decrease the risk of a virus infection. Thus, the practice of sports at home will help to prevent society from the negative effects of the lack of appropriate sports and health routines (Wackerhage et al., 2020).

To develop appropriate health routines, the society cannot be seen as a whole in this pandemic. Different people are facing individual problems and require specific exercise recommendations to stay healthy. Wackerhage et al. (2020) distinguish people into three different “fitness” groups. For healthy adults, especially the closure of gyms and fitness clubs in combination with the restrictions to exercise outside is causing difficulties. For them it is necessary to concentrate on their fitness at home by focusing on resistance and endurance exercises to maintain their fitness level and to strengthen their immune system. Therefore, especially online exercise classes are recommended. Another recent study from Aktuğ et al. (2020) about the effects of exercises on the immune system in the case of COVID-19 supports the recommendations given above. The authors agree to the fact of only participating in moderate-intensity exercises during quarantine to maintain the fitness level and to nourish the immune system. To stay active and to exercise a minimum of four to five days a week is therefore important. Aerobic and strength exercises are recommended. Moreover, another recent study summarized the recommendations for doing physical activity and also came to the conclusion that for healthy or asymptomatic persons only low-to moderate-intensity exercises are beneficial. These exercises should be preferably conducted in a private space with a good ventilation (Halabchi et al., 2020). Moderate physical activity is beneficial to strengthen the immune system and to increase the health during corona. The effect and recommendations regarding high intensity exercises cannot be given yet and demand further research. However, the ‘open window’ theory and the ‘J Curve’ indicate, that the workout intensity is of high importance for a good immune system. A moderate-intensity exercise leads to a low infection risk, which is below average. On the other hand, an intense exercise results in an above-average infection risk. An intense exercise leads to a high immune stimulation, followed by the suppression of the immune system, also known as open window. For moderate-intensity exercises the immune stimulation is much lower and therefore it has no immune suppression as a consequence (Rahmati-Ahmadabad & Hosseini, 2020). Thus, all the accumulated research agrees in the importance of practicing moderate-intensity level activities for healthy adults to stay fit during Covid-19.

For athletes, the biggest challenge is the lack of competitions as well as the indoor- and outdoor training. They should pursue their training regularly but not over train to weaken the

immune system and to be more susceptible to diseases (Wackerhage et al., 2020). In the case of no restriction to go outside, sports should be done outdoors. In contrast to Wackerhage et al. (2020), Aktuğ et al. (2020) encourage athletes, specifically contestant athletes, to continue with high-intensity exercises. While Wackerhage et al. (2020) stated that it would be good to avoid exhaustive training to not weaken the immune system, Aktuğ et al. (2020) see the importance of performing on a high-intensity level but only in combination with the right isolation measurements as they agree with the fact of weakening the immune system and causing higher chances of being infected. High-intensity exercises and competitive sports are not recommended and should be postponed. If this option is not possible, a secured environment with all protection measurements and without fans should be provided (Halabchi et al., 2020).

Especially, elderly people are more likely to not leave the house to expose themselves coronavirus, which can cause serious issues (Wackerhage et al., 2020). According to a recent study, their sports activity is immensely affected by the quarantine as their participation in group physical activities reduced significantly and therefore, they feel the need to practice sports at home. For this generation Wackerhage et al. (2020) recommend a mixture of different training exercises, balancing and strength, and additional social support to keep the mental health in balance (Wackerhage et al., 2020). However, no exercises, too many exercises or physical activity while being infected with the coronavirus can lead to an immune suppression and increase the risk for diseases and should therefore be avoided (Nieman, 2020).

### **2.2.3 Impact on the Growth of Online Sports**

The novel coronavirus, known as COVID-19, has emerged as a concerning public health issue globally (Casella et al., 2020; Wackerhage et al., 2020; Yang et al., 2020). The missing discovery of a vaccine and the uncertainty of how long this situation will last for is leading to many changes for society (Casella et al., 2020). People have to adapt their usual routines and behaviors to the new circumstances. One of them is the way of conducting sports. Going to the gym or another class together with friends or colleagues is almost nowhere possible anymore (Steinacker et al., 2020). Socializing in times of the Covid-19 pandemic is a threat for public health and therefore social distancing is more important than ever before (Yang et al., 2020). Especially, when conducting sports (Steinacker et al., 2020; Wackerhage et al., 2020). A recent study from April 2020 in the U.S. showed, that the exercise habits of people are changing. 27% of respondents in the USA stated to exercise less often than usual, while on the other hand 17% practiced sports more often than before (YouGov; 2020). Three further studies from April this

year underline the growing concern of going to a gym. 68% of respondents are less likely to go to the gym based on their current knowledge about the coronavirus (Morning Consultant, 2020a) and 18% of the respondents stated that they will not return to the gym for the next six months at least (Morning Consultant, 2020b). As it is important for oneself and the rest of the community to stay at home, it can lead to a decrease in physical inactivity, which can result in depression and anxiety as a consequence. To prevent society from this physical and mental health issues, a good routine in exercising in a safe environment at home is necessary. Practicing sports at home is important for strengthening the immune system and being more resistant to the virus. Thus, exercising is the key to stay healthy during this pandemic (Aktuğ et al., 2020; Chen et al., 2020)

To ensure the well-being of the society, the government should play an important role during the pandemic in educating people about the importance of physical activity for maintaining healthy. They should raise awareness for this issue and provide sport offers through the establishments of communication networks. The society should have the opportunity to access exercise programs tailored on their fitness level, age and gender (Aktuğ et al., 2020). Therefore, the public health policy should integrate physical exercises at home as a part of their policies to support the society in staying healthy and remaining physically active during times of isolation (Souza Filho et al., 2020). Especially the sports activity of older adults is affected by the quarantine as their participation in group physical activities reduced significantly. This generation expressed the urgent demand for home sports. Support for physical activities at home for older adults is necessary and should be promoted globally (Goethals et al., 2020). Moreover, for people suffering from diseases for which it is crucial to move daily, it is recommended to keep physically active from home with online streams from gyms or other providers. Exercising and a balanced nutrition are the key to stay healthy during these times (Mobasheri, 2020). However, to find the right choice of sports at home, practitioners should choose one, they are already familiar with. This could be any type of sports from gymnastics and stretching to some training with light weights. Especially the sports offers online are increasing, with apps offering instructions and guidance for exercises at home with the own body weight (Claussen et al., 2020).

Thus, new methods of practicing sports from home are needed and many people already use online alternatives to traditional exercise. According to a recent study, the use of video conferences for fitness classes is gaining a fast-growing popularity. Already in April, 15 percent of respondents in the United States, aged between 18-29, are using this method to participate in sport lessons during the COVID-19 pandemic (Morning Consultant, 2020c).

Another study regarding the in-house media consumption showed, that with the emerge of COVID-19 the in-home media use increased radically worldwide and people tend to spend more than double the time than before on Social Media, especially the Generation Z as well as the Millennials (GlobalWebIndex, 2020). This could be related to the fact, that many gyms and sport facilities now offer videos and classes online, including on social media. To sum it all up, with the new restrictions, the easy access to Internet, and the urgent need for sport alternatives from home, taking online sports classes is gaining a fast-growing interest.

## 2.3 Online Home Sports

### 2.3.1 Definition

Until now, a widely accepted universal definition for online home sports does not exist yet, as it is a fairly new way of conducting sports, which is gaining extensive popularity. This trend could only evolve with the rise of the Internet and through Social Media and apps of well-known brands it received increasing attention. Especially now, in times of COVID-19, it is a good alternative to do sports for everyone, who is locked at home. Exercising online is flourishing and an increasing amount and variety of offers is provided (Claussen et al., 2020). Influencers are able to more than double their number of followers within just a few months by providing workout plans and exercise classes on Social Media (Reif, n.d.). One can read on various media about this new trend, from recommendations in sports and health related scientific journals to Social Media posts and newspaper articles (Becker, 2020). However, even if it is so popular these days, the term ‘online home sports’ is not clearly defined itself. ‘Online sports’ sounds very similar to the term of ‘E-Sports’ or ‘Online Sports Viewing’, which defines a completely different activity such as the act of arranged online video game competitions (Jenny et al., 2017) or watching sports games with various television providers while communicating with other viewers online (Ko et al., 2016). However, in literature many variations of the term are offered, which are nonetheless describing the same activity of practicing sports at home with the guidance of online classes and apps. It is described as “sport offers online” (Claussen et al., 2020), “online exercise-based sports” (Mącznik et al., 2019), “online-exercise classes” / “exercise programs (...) supported by the Internet” (Wackerhage et al., 2020) and many more. Consequently, defining online home sports is very difficult as there is the lack of one precise term and definition for this new way of conducting sports. Nevertheless, literature provides already existing terms for “sports” and “online services”.

In the national sport and active recreation policy framework, the department of health from the Australian government defined sport as “A human activity involving physical exertion and skill as the primary focus of the activity, with elements of competition where rules and behavior governing the activity exist formally through organizations and is generally recognized as a sport.” (Australian Government - Department of Health, 2011, p.7). The practice of sports is therefore of a physical nature while on the other hand the sports classes online are virtual services. With only a quarter of a billion Internet users worldwide in 2003 (Keaveney & Parthasarathy, 2001) and almost 4,57 billion active users in April 2020 (We Are Social,& DataReportal, & Hootsuit, 2020), the development of the online industry has grown exponentially. The global revenue, generated through Internet services, increased significantly from 225 billion Euros in 2013 to 554 billion Euros in 2019 (IDATE DigiWorld, 2016) and is highlighting the importance of this services. However, the definition of online services vary across the scientific literature, but as they all rely on the Internet as the foundation for the service, Kvasnicova et al. (2016) summarized these and define it as “activities provided by provider to a recipient; these services are non-material; they are provided by means of information and communication devices and the result of their consumption can be a benefit, service or acquisition of property” (p.193).

Thus, applying the given definition of ‘sports’ and ‘online services’ and referring it to the fact of being accessed from home, it provides a solid foundation for the definition of ‘online home sports.’ In conclusion it can be stated, that practicing online home sports is the execution of a physical activity at home using an online service, which provides classes and guidance for the exercises through the Internet. However, for the future it would be useful to agree upon one universal definition of the latter, to be clear about the range of the activities and services included, without the need of an explanation.

### **2.3.2 Implications**

Online home sports classes can be practiced in many different forms and variations. This can be amongst other options though the guidance of synchronous or asynchronous videos. One example for this type of classes is the influencer Pamela Reif. The 24-years year old fitness coach became very popular in the past few months by creating weekly training plans for various sport levels and sharing them on Instagram. Participants could follow her YouTube videos or additionally take part in some of her live video classes as well (Reif, n.d.). Next to this form of online classes, there are also many apps offering different kind of services. Asynchronous apps,

such as the Nike (Nike, Inc., 2020) or Adidas app (Runtastic, 2020), provide different instructions for exercises and workouts explained through photos, short video clips or animations. Furthermore, there are also a few ‘social’ apps on the market, which especially target the users of smartwatches or tracking devices. The latter can then connect the app with the wearable device and afterwards upload the data to share the success with other athletes. The Garmin Connect App (Garmin, 2020a) as well as the Strava App (Strava Inc., 2020) are two well-known applications for this niche sector and in general lead to interaction and social exchange.

As online sports classes are a relatively new topic, which is just gaining an increase of popularity through Covid-19, there is no scientific research defining a clear guide or a differentiation between their main types. Due to this lack of existing literature, the researcher had to investigate different areas of online classes, such as for example the educational environment, to adapt these findings to the online sports context and create some clear delimitations. On the other hand, previous literature stated that an online class with synchronous communication, which takes part in real time, reflects more the nature of a traditional physical class. It enables more interaction (Mabrito, 2006; Skylar, 2009) and creates a virtual classroom (Latchman et al., 2001). On the other hand, are the synchronous classes as a non-real-time type. The course content can be accessed at any time from anywhere, which also has the advantage for students to increase their time investment if it is needed. It therefore reflects a self-paced learning. (Latchman et al., 2001; Mabrito, 2006; Skylar, 2009). Moreover, more space to reflect leads to and increased time spent on the actual objective of the class (Mabrito, 2006). Thus, referring to the previous literature figure 2.1 presents a reference and framework for this study. It focuses on the two different types of online video sports classes, which will be later on assessed in the methodology part.



<b>Types of online video classes</b>		
	<b>Synchronous</b>	<b>Asynchronous</b>
<b>Features</b>	real-time	non-real-time
	not time flexible	very flexible
	supervised	self-paced
	interactive	little interactive
<b>Example</b>	Zoom videoconferencing	YouTube videos

*Figure 2.1 Types of Online Sports Video Classes*

*(Source: own elaboration based on Latchman et al., 2001; Mabrito, 2006 and Skylar, 2009)*

## 2.4 Online Sports Behaviors

Every individual behaves differently from one another. The same counts, when it comes down to sports. Sport preferences and participation can often vary between participants and many factors can have an influence on sports participation. Therefore, different profiles of the participants have to be considered. A recent survey from 2017 discovered that different profiles prefer different sport activities. According to this study, sport viewer as well as people and volunteers involved in an organization or club have a higher chance of participating in an organized sport activity. On the other hand, highly educated people, handicapped people or the typical urban/ metropolitan people are most likely pursue their own sporting activity (Eakins, 2018). Hence, people are different to one another and change behaviors, also in regard to physical activity. As it would be outraging the size of the present thesis to research on different demographics influencing the sports behavior of people, the next two sub chapters will therefore solely focus on the effect of group behavior and virtual fitness coaches on the sports behavior of individuals.

### 2.4.1 Online Sports Group Behavior

Groups and their dynamics play not only an important role in social or business life, but also in the practice of sports. Group dynamics are “the influential interpersonal processes that occur in and between groups over time. These processes not only determine how members relate to

and engage with one another, but they also determine the group's inherent nature and trajectory: the actions the group takes, how it responds to its environment, and what it achieves." (Forsyth, 2018, p.18). Exercising in groups fulfils the need for belonging and social integration for many people. It is rooted in the human characteristics to interact with each other, which can be done by practicing physical activities in groups. Therefore, group dynamics in general, thus the social environment in which a sport is exercised, should always be considered as an important influential factor in the studies of sports and behavior (Eys et al., 2019). Not only in group sports itself, but also in the fitness industry in which practitioners exercise for themselves, the dynamics of a group are fundamental. A study showed that for example for CrossFit classes, shared beliefs, values, experiences and goals as wells as the social integration and the feeling of unity are very important for participants. Those team dynamics including the sense of belonging and social connection of an organizational culture go beyond the pure act of practicing sports and are considered to be the driving power for the success of a CrossFit organization (Bailey et al., 2019).

For the practice of online sports, people are physically separated from each other. While some definitions of a group set the physical togetherness as a determinant factor for it (Hogg, 1992), other researchers outline that a common social identity is a satisfactory reason to form a group. The sense of belonging and togetherness is therefore sufficient and puts the psychological feeling received from being a group member over the physical state of presence (Turner, 1982). Thus, it is not required to be physically together to be defined as a group and is therefore integrating the virtual groups within this group definition.

However, online sport groups change the social environment in which a sport is exercised in comparison to traditional group sports. Instead of actual physical groups, online communities build the environment to exchange information and share experiences together. These social groups on the Internet allow society to build productive relationships (Ludford et al., 2004). Already since 2006, social networks are a way to communicate and collaborate for society. It fulfills the desire for social connection and helps to manifest relationships (Lai & Turban, 2008). In contrast to physical groups, online groups have many similarities in common but also highlight some major differences, which can reach from the lack of real-world counterparts to different time constraints. However, virtual groups are real groups and mostly depend on the behavior and participation of its members to be successful. Only a good sufficient participation will lead to a positive experience and benefits derived from this togetherness. Online groups can have compelling social influence on the members, open up new social networks and establish long-lasting relationships. Therefore, a strong group salience

and the success and determination in following and achieving a common goal, tasks and fulfilling social needs is the requirement (McKenna & Green, 2002). Hence, referring these outcomes to online sports highlights, that exercising in online groups can have a positive effect on the participant but depends as in the traditional groups on the motivation and the effort of the individual itself.

#### **2.4.2 Effects of a Virtual Coach on the Sports Behavior**

Even if the practice of sports at home is often more convenient than exercising at a gym, practitioners still like to track their activities and fitness plans as well as to receive some guidance. Therefore, virtual fitness assistants and wearable mobile devices could be a good solution (Zhu et al., 2019).

One of the first studies in the home fitness experience investigated the effects, which technology can have on the intrinsic motivation of practitioners in the home fitness experience. Therefore, the training of participants on an indoor cycling exercise with a virtual racetrack was either supported by an additional virtual coach or without. The experiment revealed that through a virtual immersive environment the presence and motivation of the participants increased; they had fun and cycled faster. Unexpectedly, the guidance through the virtual coach did not influence the level of enjoyment or training intensity. This result could be explained by the fact of the coach being more of an extrinsic factor and therefore affecting the extrinsic motivation more than the intrinsic one. However, benefits of the use of the virtual coach were the reduced feeling of tension and pressure. Furthermore, a limitation was the perceived decrease in control, which one would expect to increase instead as the coach helps with guidance during this training. The study pointed out that various information regarding the trainings intensity could have led to this outcome and counteracted with the expected results (IJsselsteijn et al., 2004). Moreover, the need for a more health conscious society, the steadily growing advances in technology and the herewith increased use of mobile devices has resulted in the emerge of a high number of mobile virtual fitness apps (MVFA). A study conducted in 2011 pointed out, that MVFA's are still not an adequate replacement for real human sports coaches. The apps are only of an additional benefits for the practitioners to gain an overview and further insights of their training or for trainers in improving the training effects (Kwok Chi-Wai et al., 2011).

However, after the first critical views on the effectiveness of virtual coaches and apps in the past, technology advanced quickly and recently a high number of scientific articles and

research papers emerged regarding virtual fitness assistant based training and wearable enhanced exercises (Chang et al., 2007; Guo et al., 2017; Zhu et al., 2019). The increasing offers of sport products to monitor the own fitness activities such as smartwatches from Apple (Apple Inc., 2020), Garmin (Garmin Ltd., 2020b) and Fitbit (Fitbit Inc., 2020) reflect the new trend of an automated fitness control. These smartwatches can track various sport activities of the users, provide workout plans in combination with apps on the smartphone and even offer virtual expert coaches such as for example Garmin Coach for running (Garmin Ltd., 2020c). A recent study of a virtual fitness assistant, which was based on WIFI, was able to provide tailored workout assessment to the athletes. The technology identified the exercises as well as the users and could provide personalized recommendations and feedback. Thus, the effectiveness of the virtual coach was proven and confirmed by all participants in this experiment (Zhu et al., 2019). Furthermore, another recent study compared the resistance exercise session efficacy of a virtual coach through a fitness app or a professional coach in reality with a self-directed training. The outcomes showed that the perceived effort and satisfaction received as well as the improvements in mood are greatest when the exercises are practiced with a fitness coach or a virtual fitness app. However, perceived enjoyment was the greatest in self-directed workouts, which could be explained by the practitioner choosing less challenging exercises to perform (Limoges, 2019). Hence, recent research is indicating a rising trend in exercising with fitness coaches and wearable enhanced trainings, but there is not a sufficient amount of literature yet to point out how virtual sport coaches and apps effect the human behavior in comparison to traditional fitness coaches. Thus, about the effectiveness of virtual coach and fitness apps on the physical activity outcomes but especially on the motivation and behavior of the individuals little is known, and further research is necessary.

## **2.5 Motivators for the Adaption and Use of Online Sports**

“To be motivated means to be moved to do something” (Ryan & Deci, 2000, p.54). Motivation is “the concept we use when we describe the forces acting on or within an organism to initiate and direct behavior.” (Petri & Govern, 2012, p.4). Consequently, a person, who is working towards an end while being active and full of energy is considered to be motivated, whereas someone without a thrive, no energy, no input and a lack of inspiration can be defined as being unmotivated (Ryan & Deci, 2000). In general, one can broadly distinguish motivation in two types: extrinsic and intrinsic motivation. On the one hand, extrinsically motivated behaviors

are characterized by being of a specific service to someone, thus contribute to a specific consequence. They either follow external influences and stimuli or proper self-regulation. Intrinsically motivated behaviors are on the other hand fully executed through the own interest and reflect the human affection to learn. These motivations fulfil the inner desire for sovereignty and competence and reflect a self-determined behavior (Ryan & Deci, 2000). As for any activity, motivation also plays a big role for sports. Diverse scientific studies and statistics have been conducted globally to understand the main motives of individuals for the participation in sports. All of the latter mention the same major reasons for physical activity, but with slight differences in the order of importance. However, as some motivations are named repetitively in several studies to be the most important ones, these ones are considered as the main reasons for the practice of sports:

- *pleasure, fun, enjoyment* (Rodríguez-Romo et al., 2009; Seippel, 2006; Skille & Østerås, 2011).
- *health, fitness and well-being* (Clearinghouse, & ASC., 2019a; Hoare et al., 2017; I&O Research, 2018; Seippel, 2006)
- *social relations* (Allen, 2003; Allender et al., 2006; Clearinghouse, & ASC., 2019a; Seippel, 2006)
- *appearance and weight* (Clearinghouse, & ASC., 2019a; Hoare et al., 2017; Recours et al., 2004; Seippel, 2006)
- *competition and exhibitionism* (Clearinghouse, & ASC., 2019a; Kilpatrick M et al., 2005; Seippel, 2006; Sport New Zealand, 2018a)

These personal motivations are not always the same for every individual and can vary depending on the age and gender or the type of sports activity itself (Seippel, 2006). In the following sub-chapters, the five major sport reasons will be defined, analyzed and applied to the online context.

### **2.5.1 Pleasure, Fun and Enjoyment**

“‘Pleasure’ is basically a feeling, which is normally a direct and immediate response without deliberation. So it covers only a small area of human desire-satisfaction and is usually associated with low-level sensual desires.” (Sheng, 1998, p.30). In comparison to happiness,

pleasure is more of a direct response and does not reflect a state of satisfaction (Yang et al., 2020). Hence, pleasure in sports is the direct, happy feeling one receives from practicing a physical activity.

Fun is the most important reason for adults and adolescents to do sports (Rodríguez-Romo et al., 2009; Seippel, 2006; Skille & Østerås, 2011). The joy associated with the sports activity itself is the driving force behind the sports participation. However, a study showed that the age is relevant for the level of enjoyment. Younger people seem to enjoy sports more than the elderly (Seippel, 2006). A recent statistic from New Zealand revealed, that especially for the youth, fun is the most important objective when it comes to sport participation. 76% of the respondents, aged between 5-17 years, stated to do it for enjoyment (Sport New Zealand, 2018a). For adults, sport is important for the simple reason of enjoyment but also for a sense of achievement, recognition, skill development, the development of new networks or medical reasons. Older adults participate in sports to find social connections, have fun and to increase their health. (Allender et al., 2006). Two further study from 2018 in the Netherlands and Australia highlighted the same result for adults. 40% of Dutch respondents (I&O Research, 2018) and 45.8% of Australian respondents do sports solely for the fun of it (Clearinghouse, & ASC., 2019a). Moreover, a study from 2008 revealed, that especially for action sports participants the main motivations for taking part in these physical activities are fun, enjoyment and risk-taking. (Yong Jae Ko et al., 2008). If one considers that not every sport is an action sport involving a high level of risk, the remaining main motive for practicing sports is clearly for fun.

As fun is the main motive for the participation in traditional offline sports, it will be interesting to explore how the level of fun and enjoyment, in other words the hedonic value, will change in the online home sports world. If the sensation of pleasure and fun is simply related to the execution of the activity itself, which could be done at home through online classes, it could be a similar result than in offline sports. In the case of fun being related to other factors, such as the environment, social interaction and physical group activities it could be difficult to receive the same level of enjoyment and pleasure through the exercise of online home sports. Therefore, the level of fun could be strongly linked to the personal definition and preferences of the practitioner oneself as well as the type of sports conducted (group- or individual sports) and its practicability for home sports.

## 2.5.2 Health, Fitness & Well-being

Nowadays, it is generally known that the participation in physical activity will increase the health-related quality of life (Bize et al., 2007). Depending on how much sport is practiced, it can impact various physiologic- and health outcomes (Powell et al., 2011) and therefore, exercising with a regular routine is positively influencing the practitioners well-being (Bize et al., 2007; Kohl, 2001; Pomohaci & Sopa, 2018; Powell et al., 2011).

Hence, to keep fit is one of the main reasons for many adults to participate in sports (Seippel, 2006). A recent statistic from 2019 in Australia showed, that the main motive for 78% of respondents to participate in sports is their physical health or fitness (Clearinghouse, & ASC., 2019a). The same results were approved in two further surveys from Japan in 2018 and New Zealand in 2017. Both statistics reflect the same main motives of the participants. The drive for physical activity is the goal of maintaining or even improving the health and the physical wellbeing. In Japan 74 % (Rakuten Insight, 2018) and in New Zealand 73% of adults exercise for this reason (Sport New Zealand, 2018b). In the Netherlands, the great majority of adult sport participants is as well exercising to maintain fit and healthy (75%) and furthermore for the relaxation, which accompanies the execution of the activities (I&O Research, 2018). One further study from 2017, exploring the motivations and barriers to physical activity, supports the before mentioned findings by highlighting that to maintain or even to avoid health conditions is the main motivation for physical activity (Hoare et al., 2017). Summing up the recent studies and statistics from various countries worldwide, one can conclude, that a major motivation for adults is the maintenance and improvement of their health, fitness and well-being.

For people, whose main motivation for doing sports is to keep fit and healthy, online home sports can offer a good alternative to traditional sports. A recent pilot study from 2018 measured the motivation of older adults to take part in wearable-enhanced fitness programs from home. The goal was to encourage this generation to be more active and participate in the program, which was supported by a smartphone app and an activity-tracking device. As a result, the adults increased their health level and time of daily activities considerably. Hence, the online fitness program with an additional wearable device increased the motivations of older adults to exercise significantly and is therefore a good option for people with the aim to increase their fitness and well-being through the practice of sports from home (Steinert et al., 2018). The offer of more online sport programs online, with or without additional fitness

tracking devices, and tailored for different fitness- and age groups could be beneficial for many individuals, who would like to improve their health and fitness.

### **2.5.3 Social Relations**

Empirical evidence has proven that social relationships are one of the major variables for the subjective well-being (SWB). The existence of relationships with a great value increases life satisfaction (Lamu & Olsen, 2016). Therefore, another important reason for sports participation in sport organizations is the social aspect. Sport is more than just an activity, it is perceived as a way to connect and socialize and to develop relations with others (Seippel, 2006).

A statistic from 2018 in the Netherlands explored that one of the main reasons for Dutch adults to participate in sports is to socialize. Making new contacts and building new relationships is one of their main motivations after the aspect of health and fun. 25% of the respondents exercised for the sole reason of sociability (I&O Research, 2018). In Australia, even 30,5% of adults practice sports for social reasons (Clearinghouse, & ASC., 2019a). Moreover, another study from New Zealand in 2017 points out, that one quarter of the respondents participates in sports to spend time with friends or family (Sport New Zealand, 2018b). Thus, for adults, sport also contributes to the development of new networks and also older adults cannot be excluded from this reason. They participate in sports to find social connections (Allender et al., 2006). Another study researching on the social motivation in youth sport pointed out, that especially younger people have social reasons for the involvement in sports (Allen, 2003).

Nowadays, not only relationships in the real physical world exist, but they are even possible online. In 2006 social networking became popular and already one year later it influenced the private and business life of the global society. The endless possibilities and advantages of the Web 2.0 for co-working, communication, and many more advancements encouraged people all over the world to participate in it and new technologies were now the alternative way of satisfying desires. The foundation of social groups on the Internet was promising, as it fulfills the primary need for a social community and relationships. Sustainable social networking groups developed out of this trend and are manifested in our society until now. The main benefit of social groups and networks is the flexibility, especially in terms of establishing relationships, communication and collaboration (Lai & Turban, 2008). Hence, referring the motive for social relations to the new possibilities of communication and



connection online, one could assume that for some people, one reason for the participation in online sports could be the belonging of being part of a community to satisfy the social needs.

#### **2.5.4 Appearance and Weight**

Weight and appearance play an important role for many people in society. Especially for women, concerns regarding their weight and appearance are very common these days (Keating et al., 2016). Hence, for many people the practice of sports is beneficial to reach their desired weight goal and, in their opinion, positively change their appearance.

One of the leading motivations for sports participation in Australia is the weight management and the goal to look lean and tone. 15.3% of adults stated this as their reason to exercise in a recent survey from 2018 (Clearinghouse, & ASC., 2019). Moreover, 17% of adults in NZ do sports for the same motivation (Sport New Zealand, 2018b) and in the Netherlands even 24% (I&O Research, 2018). In an Australian study, 36 % of participants, aged between 25-34 years, mentioned the weight control as their main personal reason for physical activity. Further 12,8% stated the improvement of their appearance as main motivation. Thus, next to the maintenance of their health condition, these two reasons are their major motives for physical activity. However, a difference in these ones can be identified regarding the gender. Similar to the other studies, especially the female respondents chose 'to maintain weight' as their most frequently selected answer. Among the males, the proportion of participants practicing physical activity for this motive was much smaller (Hoare et al., 2017). Another study on the expressed motives for informal and club/ association sports participation highlighted, that the intrinsic motivations are more essential than the extrinsic ones. Especially for women, the intrinsic motives were of much higher importance than for men (Recours et al., 2004). The study also showed, that especially women do not favor motives such as competition and exhibitionism as they often do not have a high self-esteem regarding their body weight (Recours et al., 2004). For this reason, practicing sports to improve the body and appearance is more important for women than for men and especially for the people who pursue individual sports (Seippel, 2006). Moreover, another study conducted with college students differentiates between the motives for sport participation and exercising. This study pointed out that the goals of these two physical activity categories differ significantly. For sports, the main objective is more referred to intrinsic motivations such as fun, enjoyment, competition and challenge. For exercising the motivation is more extrinsic. It is primarily linked with health- and appearance-related motives – from weight control and appearance to strength and fitness. Furthermore, the

study revealed that the activity of exercising is stronger linked to the goal of weight control than the sports participation itself, especially for women. The results of the survey indicate a stronger concern and insecurity regarding their body weight for women while men are therefore more motivated by performance, competition and strength. Thus, they prefer activities in which they can measure themselves with others (Kilpatrick M et al., 2005).

In summary, one could state that appearance and weight control are a main motive to do sports, but relate especially to women, who are in general less satisfied with their appearance than men. Transferring these outcomes to the online home sports world with its increasing offers of online guided classes and workouts (Claussen et al., 2020), it could be assumed that for people with this motive similar exercises but in a safer environment without the social judgement of others could be provided. Thus, especially women who are not satisfied with their appearance could eventually prefer a guided class at home over one in a fitness center.

### **2.5.5 Competition and Exhibitionism**

Competition plays an important role in sports and can be differentiated in external and internal competition. For some people, competition has the power to strengthen the performance and contribute with excitement while for others it is not always beneficial (Warner & Dixon, 2015).

A statistic research on the youth participation in sports found out that one of the major reasons is competition. 28% of the respondents stated to either challenge themselves or to win as their own motivation to do sports (Sport New Zealand, 2018a). The same study conducted with adults, showed similar results. Even if it is the least important one out of the six motivations, it is still one of the main drivers for sports (Sport New Zealand, 2018b). Moreover, also for adults in Australia performance and competition is one of the ten major reasons for sports participation, even if with 6.3% the share of participants with this response is much lower than for many other motivations (Clearinghouse, & ASC., 2019a). Another study on the expressed motives for informal and club/ association sports participation highlighted, that men cared more about the exhibitionism and competition as a motive for sports participation than women (Recours et al., 2004). Depending on the surrounding environment, the motives of competition and exhibitionism change. The more informal and self-set-up the place for sports is, the more redundant the motives of competition and exhibitionism become (Recours et al., 2004). Thus, sport as competition and achievement is of higher interest for men than for women (Seippel, 2006). The results of another survey indicate a stronger concern and insecurity regarding their body weight for women while men are therefore more motivated by

performance, competition and strength. Thus, they prefer activities in which they can compete and measure themselves with others. (Kilpatrick M et al., 2005). This could be a possible reason, why competition and challenge are always mentioned as a main reason for sports participation in the statistics, but always with a relatively low share between the participants. It could be assumed that mostly men reply with this answer.

Summing up all the scientific evidence, one can clearly see that the extrinsic motive for exhibitionism and competition are mainly relevant for men. Referring this to the online home sports context, one can see that these motives could be very difficult to be achieved in a home environment. As the surrounding environment is mostly very private and self-set-up, there is a physical lack of other practitioners, competitors or spectators. Therefore, it could be difficult to adjust online home sports for men who train for the reason of exhibitionism and competition. However, some online social apps such as Garmin Connect or Strava could provide a solution for this. These apps enable the possibility to share the training development and success in form of numbers, pictures and videos with a community online (Garmin, 2020a; Strava Inc, 2020). If practitioners are open to use the online world as a platform to share training results and compare oneself with each other, it could be a way to achieve recognition, respect and acknowledgement in a different way. Thus, the whole competition and exhibitionism process is just moved from the offline to the online world, whereas one can also connect with friends from the physical world in the Internet.

## 2.6 Barriers for the Adoption and Use of Online Sports

Unfortunately, barriers have a great influence on the sports participation. Even with a high level of motivation to participate in sports, there are many reasons, which can hinder individuals from being active. According to multiple scientific articles and statistics, the most often named barriers for sports participation are:

- *time constraints* (Anokye et al., 2012; Eakins, 2018; Hardy et al., 2010; Rodríguez-Romo et al., 2009)
- *price* (Anokye et al., 2012; Eakins, 2018; Hardy et al., 2010)
- *anxiety and lack of confidence* (Smith & Smoll, 1990; Allender et al., 2006; Seippel, 2006; Kilpatrick M et al., 2005)

In the following sub-chapters, the three different main barriers will be defined, analyzed and applied to the online context.

### **2.6.1 Time Constraints**

In today's world, time is more important than ever before. However, in many people's opinion, they are too short on it. Not only for work and family duties, but also for the participation in many recreational activities, such as sports, a great amount of time is needed. Research has proven, that for the majority of society the main barrier for sports participation is time. This can be time needed for business, education or other commitments (Anokye et al., 2012; Eakins, 2018; Hardy et al., 2010; Rodríguez-Romo et al., 2009).

An illustrative survey, interrogating the determinants of the need for exercise and sports, shows that the demand for practicing sports is negatively associated with time, which can be the travel or access time (Anokye et al., 2012). The time as well the responsibilities such as family and work are therefore some of the main barriers for the cancellation of sport classes or physical activities in general. For people, who never exercise, the main barrier next to the simple reason of not enjoying it, is as well the lack of time (Eakins, 2018; Rodríguez-Romo et al., 2009). A recent statistic from 2018 in Australia underlines the before mentioned statements by emphasizing that the leading barrier for people who do not exercise sports is the lack of time or the overload of other commitments (Clearinghouse, & ASC., 2019b). The same result was positively validated in another survey in New Zealand. 58 % of respondents stated the work and family as a barrier for sport and activity participation and consequently not having enough time for the practice of sports (Sport New Zealand, 2018c). Moreover, the findings from two further independent statistics from Spain and Northern Ireland agree upon the before findings of time and commitment being the major barriers for sport participation (NISRA, & Department of Culture, Arts and Leisure (Northern Ireland), 2017). Another study investigating the barriers of sport participation in university students revealed that especially for international students, time is together with convenient facilities and information regarding available activities the main reason for them not to join the sports offers (Hashim, 2012). Thus, even for students, who most likely have more time than adults working in a full-time job and often taking care of a family as well, perceive time as one of the greatest challenges for sport engagement.

Hence, time plays an important role in the engagement in sports and a high amount of time can have a decreasing effect on the motivation of sports participation. Contrary to the latter,

an insufficient amount of time can lead to a reduction in sport activities or in the worst case hinder the participation in physical activities at all (Rodríguez-Romo et al., 2009). In general, participants who take part in sports classes, spent an average of 19.8 min travel time to the different sport locations for every single participation or class (Anokye et al., 2012). However, time is not only a determinant for the sport participation of adults, but also for their children. The parents' time can be the main barrier for the children's sport participation. If the sports classes require a high level of the parents time commitment, for example the time spent on the transportation to the sports classes, the chances of allowing their children the participation is lower (Hardy et al., 2010). For families living in more abandoned, rural areas, the variety of sports offers is a barrier for parents. The lack of different types of physical activities is influencing their decision to let their children join classes. The study accordingly points out the urgent need for financial support and initiatives to promote sports for families with a lower household income and living far away from cities to offer more and cheaper sport varieties to them (Hardy et al., 2010).

As already identified before, it can be difficult in the real world to balance jobs, family and free time to find space to be an active part in a group, such as a sports team or class. A solution could be the virtual world. The difficulty of the immense amount of time needed for the actual time spent on a group meeting, but also the travel time or even the time involved of finding a childcare for this event can be overcome or at least reduced with online meetings. Group meetings with fixed time frames can be difficult to manage for people with a busy lifestyle whereas online groups provide more flexibility in terms of time. It gives participants the freedom to often choose the time for the meeting as in a virtual group one can often meet up more flexibly (McKenna & Green, 2002). Consequently, online sports classes provide more timely flexibility to people in regard of travel and access time and can encourage the sports participation for people with time concerns in their daily life.

### **2.6.2 Price**

Even if the right motivation to do sports exists, most offers are not for free. For some parts of the society, economic reasons can be a barrier for sports participation and hinder people to be active. Study shows that next to the time, the price is relevant for the practice of sports. £27.41 is the average amount of money spent on sport activities per month for every occasion they participate in, which includes the fees as well as the costs covered for equipment and clothing (Anokye et al., 2012). A recent study from 2018 in Ireland highlighted that one of the main

determinants of sport participation is the income (Eakins, 2018). Moreover, a statistic from the Spanish ministry of education, culture and sport highlighted that one important reason of people being limited to the practice of sport in Spain are economical barriers. The lack of time is clearly the main reason, as shown in many other studies before, followed by lack of interest, health reasons and age. If one only considers the reasons which are not based upon a missing motivation or physical condition, the economic reasons are the second highest rated barrier. (The Ministry of Education, Culture and Sport, 2016). The same results were confirmed by the NISRA, & Department of Culture, Arts and Leisure in Northern Ireland (2017). The indicated that the time constraint is by far the most important barrier followed by various physical reasons which hinder the sport participation such as a medical condition, disability, overweight. With 6% the high price is the seventh most important barrier but can be considered as the most important one after time if one leaves out the reasons with a lack of motivation or physical condition. If one considers only the part of the society, which is motivated and in the right physical state to practice sports.

An Australian study that focused on the barriers of children sports participation from a parental point of view highlighted the most important decision factors. Sporting costs, variety and time commitments are the biggest decision factors for parents to allow their children the engagement in sport classes. Their pilot study showed that the lower the participation costs of the classes is the higher is the likelihood to let their children participate in the sports classes and the lower is the entry barrier, especially, for families with a lower household income. The sportswear as well as the fees for the sport facilities are the highest sports-related expenses and therefore a barrier (Hardy et al., 2010).

Online sports could be a solution for those, who cannot participate in sports due to the high price of many classes. One can find many free classes, programs and apps on the Internet, which do not cost any money as they often generate revenue through other ways such as advertising for example (Garmin, 2020a, Reif, n.d.; Strava Inc, 2020) The classes, which cost money are often, in comparison to traditional physical sports classes, cheaper as they do not have many expenditures. The fixed costs, such as the rent for a studio or employees are often reduced, and therefore it often results in a lower price.

### **2.6.3 Anxiety & Lack of Confidence**

Anxiety and a lack of confidence can be caused by many reasons and eventually be a barrier to people from pursuing specific activities. For example the concern about the body appearance

can have negative emotions as a consequence, which could furthermore results in anxiety (Keating et al., 2016). Therefore, not only in daily life, but also in sports, the role of anxiety can be a determinant factor for participation in physical activity nowadays. Psychological aspects such as motivations and emotions can influence the performance of practitioners. It can cause people to quit their involvement in sports classes as it seems to be neither fun nor enjoyable for them. For people being affected by anxiety, sports groups and classes can be threatening (Smith & Smoll, 1990). A study pointed out, that for adults one of the main barriers to participate in sport activities are anxiety and the lack of confidence. In a new environment, such as a gym, they often feel insecure and uncomfortable (Allender et al., 2006). Especially for women, these environments can be un motivating as they have in general less interest in competition and comparing oneself with another (Seippel, 2006). They are much stronger concerned about their bodyweight and appearance than men, which results often in a high level of insecurity in diverse surroundings (Kilpatrick M et al., 2005).

Depending on the surrounding environment, the motives of competition and exhibitionism change. The more informal and self-set-up the place for sports is, the more redundant these motives become. (Recours et al., 2004). Therefore, online home sports could have a positive effect on people with a low self-esteem, a lack of confidence or anxiety. To minimize the fear of interaction and social involvement, the Internet provides a 'safer environment' for these people and an easier entry to overcome their anxiety barriers. They will be able to participate in online group activities and build new relationships without the face-to-face interactions from the real world. A lower level of commitment and confidence is required to take part in these social online groups and therefore it is an environment, in which the latter can increase their self-efficacy (Bandura, 1977). Thus, the participation in online home sports could be easier to overcome for people with anxiety and confidence issues than the participation in a physical sports group or a physical social surrounding and is therefore a major opportunity.

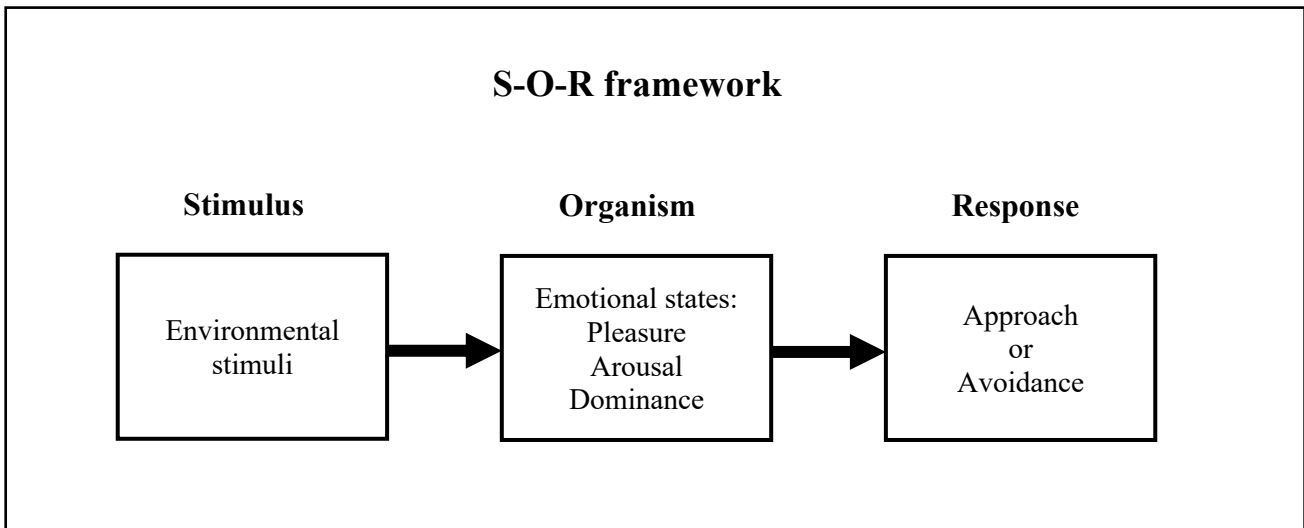
## **2.7 The Stimulus-Organism-Response Paradigm (SOR)**

### **2.7.1 The S-O-R Model and PAD Typology**

The S-O-R paradigm was developed by Mehrabian and Russell in 1974. They developed the model after identifying various problems in the studies of environmental psychology. Until then this area was only researched in regards of the emotional influence of different, tangible stimuli as well as the impact of specific stimuli on the behavior of people. However, this led to

many problems regarding control and integration in research caused by the high amount of independent and dependent variables. Thus, many studies failed due to the lack of information on the relationship of the many different measures and no generalizations could be drawn as a result. Hence, an adequate theory was needed. Therefore, Mehrabian and Russell proposed the S-O-R model as a framework for the studies of environmental psychology and simplified the research by emphasizing the most important variables, which occur in most occasions (Mehrabian & Russell, 1974). According to the latter, a person's emotional state can always be defined by one of the three dimensions: pleasure, arousal or dominance. These feelings are directly affected by the sum of the environmental stimuli, the individual's characteristic emotions associated with personality as well as the temporary condition such as for example thirst (Bakker, Van der Voordt, et al., 2014; Eroglu et al., 2001; Huang et al., 2017; Mehrabian & Russell, 1974). The three primary emotional responses are a mediating variable leading to an either approach or avoidance behavior as a response, which can reach for example from verbal- to nonverbal behavior to performance or physical approaches (Mehrabian & Russell, 1974). The three emotional dimensions - pleasure, arousal and dominance (PAD) – are perceived as the basic responses to describe an individual's state of feelings (Bell et al., 1996; Gifford, 1997; Mehrabian & Russell, 1974; James A. Russell, 1980). Various researchers confirmed the usefulness and amplitude of the PAD typology already years ago (Baker et al., 1992; Sherman et al., 1997), however, for many studies only pleasure and arousal were used due to a recommendation of Russell (1979). He suggested that the first two dimensions are able to appropriately represent the extent of emotions evoked by the environmental stimuli and psychologists are discussing the role of dominance since then (Bakker, Van der Voordt, et al., 2014; James A. Russell, 2003; James A. Russell & Carroll, 1999). Regarding the interpretation by Mehrabian and Russell (1974), pleasure can be explained as the extent to which an individual perceives unhappiness or happiness. It is a mood state and described by using adjective pairs such as unsatisfied-satisfied, annoyed-pleased or unhappy-happy. Arousal was related to mental activities, hence, the degree to which a person feels sleepy or excited and was linked to adjectives such as calm – excited or relaxed – stimulated. The conceived dominance was measured as a continuum ranging from dominance to submissiveness. Thus, describing feelings of control and the extent to which the individual believes to control an event with adjectives such as autonomous or influential (Bakker, Van der Voordt, et al., 2014; Huang et al., 2017; Mehrabian & Russell, 1974; Vieira, 2013).





*Figure 2.2 S-O-R Framework*

*(Source: adapted from Mehrabian and Russell (1974))*

## 2.7.2 Studied Dimensions

The S-O-R paradigm was developed in 1974 by Mehrabian and Russell and is in line with the widely accepted PAD dimensions an already well-established model to research the environmental influence on a person's emotions and behaviors in many different contexts. At first, the SOR framework was mainly developed for the analysis of the environment in traditional retail stores and scholar literature on store environment refers to its theory (Turley & Milliman, 2000). Many studies in the past researched on the consumer shopping behavior in the traditional stores and on the influence the various stimuli such as colors, sounds, words, images, smell and other features have on the organism. Furthermore, they investigated how these cognitive and emotional states of the consumers consequently lead to the final response, in other words, a behavior (Buckley, 1991; H.-J. Chang et al., 2011; Koo & Kim, 2013; Teh et al., 2014; Turley & Milliman, 2000; Vieira, 2013; Xu, 2007) .

The more recent studies, which evolved with the progress of technology, mostly focused on the influence of the online shopping environment on the emotions and final behavior of the consumers. Many different studies, which are emphasizing different fields of the model, have been conducted regarding the online shopping behavior (Eroglu et al., 2003; Faryabi et al., 2012; Kawaf & Tagg, 2017; Mo et al., 2015; Moon et al., 2017; Njeguš et al., 2016; Park & Lennon, 2009; Peng & Kim, 2014). They investigated amongst other criteria in how far the online environment in form of a webpage effects the consumers. This can be determinants such

as the online design, content, product presentation, responsiveness and many other influential factors (Njeguš et al., 2016). Also, the influence of the hedonic or utilitarian shopping value on the consumers attitude towards online shopping or emotional purchase was explored (Peng & Kim, 2014), and further research was conducted regarding the influence of the brand name and promotion in online shopping (Park & Lennon, 2009). Many more studies researched regarding the role of motivations, environmental cues and aesthetic stimuli in the online environment (D.-M. Koo & Ju, 2010; McKinney, 2004; O'Brien, 2010; Richard, 2005; Wang et al., n.d.). Thus, the SOR paradigm was already extensively studied in the online context and provides good insight into the consumer behavior in this area.

Next to the online environment, the SOR framework was also researched in the context of sports. However, research in this field is very limited and was mostly done regarding the influence of the sports environment on the spectators than the athletes themselves. The studies revealed that the atmosphere in a sport stadium has a high impact on the levels of pleasure and arousal (Uhrich & Benkenstein, 2010). Another very recent study highlighted a meaningful relationship between emotional experiences and sport tourist behaviors and recommended the effective use of the SOR framework for this sector (Jeong et al., 2020). In addition to this, another study from this year investigated the role of social media on the most popular non-cricket sports league in India and pointed out its importance for increasing the engagement of the online community, the attendance at games and the intention to purchase sponsored products (Trivedi et al., 2020). Thus, one can say that at first, the S-O-R model was mainly related to in-site shopping activities, but nowadays, it evolved to a recognized theory and its use and application became considerably more diverse (Eroglu et al., 2001) More recently, more studies in the sports context are applying the SOR paradigm to try and understand the customers behavior. Nevertheless, no research regarding the online sports was conducted yet.

## **3. Empirical Study and Methodology**

### **3.1 Research Model and Hypotheses**

Based upon the results of the above literature review in combination with the S-O-R model by Mehrabian and Russell (1974), nine main hypotheses were proposed. Counting the sub-hypotheses, the present research will test 12 hypotheses in total. Eight major hypotheses are assessing the relationships within the S-O-R model and the last one is focusing on examining whether there are significant differences in the structural model relationships between the two major online sports groups.

#### **3.1.1 The User Experience (S) on the Internal States (O)**

The current study suggests five different main stimuli for the online sports classes. In this model one can see the utilitarian value, social value and hedonic value, which represent the worth the practitioner experiences by using the online sports classes. Moreover, the atmospherics are added as one stimulus, as they represent the physical environment in which the sport can only be performed in and the reputation of the coach as both can motivate people to participate in the classes. All of these stimuli have an effect on the organism, including emotions. The emotions are captured with all three dimension from the PAD typology from Mehrabian and Russell (1974), even though Russell recommended that the first two dimensions (pleasure and arousal) alone are an adequate representation of the emotions (Russell, 1979). Dominance can be described as the degree to which a person feels to be in control of events, rather than to be controlled by them (Bakker, Van der Voordt, et al., 2014; Huang et al., 2017; Mehrabian & Russell, 1974). In the online sports environment, however, dominance might be an important emotional response, as the increased control could be a reason for some individuals to choose online sports over traditional sports. Thus, even if the role of dominance is still discussed and used to a least extent than pleasure and arousal for measuring emotions, it will be used for this research (Bakker, Van der Voordt, et al., 2014; James A. Russell, 2003; James A. Russell & Carroll, 1999). The following sub chapters will explain the different variables in more detail and propose different hypotheses.

## Utilitarian and Hedonic Perceived Value

The hedonic value of products and services is described as the experiential value, whereas the utilitarian value could be defined as the functional value (Lin et al., 2018). In general, one can say that these two values are either intrinsic or extrinsic. The hedonic value reflects intrinsic motives such as leisure or enjoyment while on the other hand the utilitarian value focuses on the extrinsic and more functional related attributes of a service (Peng & Kim, 2014). Both values, the hedonic and utilitarian one, have an influence on positive emotions (Song & Kim, 2015). Pleasure can be evoked by a stimulus, which is perceived by an individual organism as functional and beneficial (Cabanac, 2002). Thus, a perceived utilitarian value in a stimulus can lead to pleasure as well. Studies in the online store environment revealed a significant relationship between hedonic value and the resulting emotional dimensions of pleasure and arousal (Fiore et al., 2005). However, results highlighted that pleasure had a greater impact on satisfaction in the service industry if it related to hedonic services, rather than to utilitarian services. Arousal solely significantly influenced satisfaction in the hedonic service context, whereas the utilitarian service had no impact through arousal (Jiang & Lu Wang, 2006). Therefore, the following two hypotheses are suggested:

*H1: The perceived hedonic value of online sports video classes will influence the users' emotions, namely H1a) pleasure and H1b) arousal.*

*H2: The perceived utilitarian value of online sports video classes will influence the emotional dimension pleasure.*

## Social Value

Social relationships are important for the subjective well-being (Lamu & Olsen, 2016) and therefore sports is more than just an activity for many individuals. Moreover, it is used as a way to connect and develop social relations (Seippel, 2006). Therefore, participants often report the social value as a reason for their involvement in sports classes (Allen, 2003; Allender et al., 2006). Hence, one could assume that also during the participation in online sports the belonging of being part of a community to satisfy the social needs is influencing the consumers' emotion and especially the feeling of pleasure. Therefore, the following hypothesis is proposed:

*H3: The perceived social value of online sports video classes will influence the emotional dimension pleasure.*

## **Atmospherics**

Agreeing to the underlying assumptions of the S-O-R model that emotions in the organism mediate the effect of store atmosphere and future behavioral intentions, various recent studies confirm these findings (Ladhari et al., 2017). The physical as well as the online atmospherics can influence the consumers' attitude (Palmero & Price, 2019). Moreover, research shows that ambience has a positive effect on customer emotions and suggests that one should focus on enhancing atmospheric elements to evoke positive emotions in customers, which can lead to increased behavioral intentions (Bigdeli et al., 2014). Perceived dominance can be defined as the degree to which the individual is convinced to be free, in control or independent of the environment (Mazaheri et al., 2011; Mehrabian & Russell, 1974) and for sports participation it plays an important role. Recent studies have identified the lack of confidence and anxiety to be one of the biggest barriers in sports participation (Allender et al., 2006). Especially for female participants unpleasant environments can be unmotivating and they often feel a high level of insecurity in diverse surroundings (Kilpatrick M et al., 2005; Seippel, 2006). Thus, the atmosphere is influencing the practitioners' feeling of dominance. In this context, the following hypotheses are assumed:

*H4: The surrounding atmospherics in which the online sports video classes are practiced will influence the organisms affective and cognitive internal states, namely H4a) dominance and H4b) attitude.*

## **Reputation of the Coach**

Next to the before mentioned stimuli, there is also brand reputation as a possible influential factor on the organism. Studies have shown that corporate reputation affects emotions (Ravaja et al., 2015). Thus, the firm's reputation has a significant positive effect on the consumers' emotion. In other words, if consumers regard the reputation of a company as high, they will perceive more positive emotions (Kim & Lennon, 2013). Furthermore, research suggests that a company's negative reputation has a negative effect on consumers brand attitude (Jung & Seock, 2016). Similar findings could be expected for the influence of the coach's reputation in the online sports context. Instead of the brand itself, the coach is the one offering the service

and therefore the one whose reputation is expected to be influential. Based on the before mentioned literature findings, the following hypothesis is presented:

*H5: The perceived reputation of the online coach will influence the users' attitude towards online sports video classes.*

### **3.1.2 The Affective and Cognitive Internal States (O) on the User's Response (R)**

The emotional and cognitive states of users play a big role in the intention to continue with an activity (Lin et al., 2005; Thong et al., 2006). Recent studies regarding the influence of emotion on consumer satisfaction and future behavioral intentions recommend the use of cognitive and emotional measures in the service industry and for sporting events venues (Martin et al., 2008). Especially for sports participation, the integration of emotional processes is suggested (Mohiyeddini et al., 2009). Therefore, the organism of the proposed research model includes both; the affective and cognitive internal states of the consumers.

#### **Organism on Satisfaction**

Research has already proposed years ago that the emotional and cognitive states of users influence the satisfaction level (Oliver, 1993; Yu & Dean, 2001). The literature offers an extensive theoretical support for the link between emotions and satisfaction (Erevelles, 1998; Mano & Oliver, 1993; Phillips & Baumgartner, 2002). The cognition-emotion interplay linked with satisfaction has already been studied between e-service customers with the result that negative emotions in customers lead to complaints (Chea & Luo, 2008a). Hence, positive emotions in the e-service industry should increase the satisfaction level and more studies in the online environment highlighted that the feeling of perceived control has a positive impact on the users satisfaction (van Dolen et al., 2007; Weathers et al., 2007). A study investigating on the role of emotions on consumers' satisfaction within the fitness context found out that positive emotion positively influence the overall satisfaction of the customers (Pedragosa et al., 2015). Moreover, in the sports event context, arousal is seen as the most important driver for satisfaction (Caro & García, 2007). All in all, research suggests the use of cognitive and emotional measures for the satisfaction evaluation in the service industry and especially for sports venues (Pedragosa et al., 2015). In line with previous research, the following hypotheses are suggested:

*H6: The emotions, namely H6a) pleasure, H6b) arousal and H6c) dominance will influence the perceived satisfaction of the practitioner.*

## **Organism on Intention to Continue**

The relationship of cognition and emotion has been extensively studied in multiple consumer behavior literature (Chea & Luo, 2008). According to Mehrabian and Russell (1974), consumer emotions result in different behavioral responses, which can be for example a specific approach behavior (Eroglu et al., 2003; Menon & Kahn, 2001). Multiple studies have highlighted various factors effecting users' continuance intentions directly or indirectly regarding new services, including satisfaction (Bhattacharjee, 2001; Bougie et al., 2003; Hsu et al., 2006; Liao et al., 2007), emotions (Lee & Kwon, 2011; Martin et al., 2008) and attitude (Bhattacharjee & Sanford, 2006; Shih, 2004). Especially, the emotional and cognitive states of users, in other words the cognitive and affective factors, are closely related to the intention to continue with an activity (Lin et al., 2005; Thong et al., 2006) and past studies recommend the use of cognitive and emotional measures for future behavioral intentions in the service industry and a sporting events venue (Martin et al., 2008). Moreover, research has shown that attitude has a significant influence on the user's intention to continue with a service in an e-learning environment (Lin, 2011; Stoel & Hye Lee, 2003). Other studies in the technology field underlined the importance of the users' attitude towards technology as a determinant for the continuance intention in the World-Wide-Web context (Moon & Kim, 2001). Based upon these findings, the following hypothesis is proposed:

*H7: The attitude towards online sports video classes will influence the practitioners' intention to continue with it.*

## **Satisfaction on Intention to Continue Following Online Classes**

Satisfaction is a primary driver for various post-adoption responses of customers. One of them is the 'continuance intention' as a significant consequential behavior (Bhattacharjee, 2001; Bougie et al., 2003). According to more recent studies in the field of e-services there also exists a positive relationship between customer service satisfaction and the intention to continue the service. Thus, satisfaction is a determinant for continuation and therefore satisfied e-service

customers are most likeable to continue with the use of the service. (Chea & Luo, 2008; Cheung & Lee, 2011; Chiu et al., 2005; Pereira et al., 2015). Based upon this literature findings, the following hypothesis is suggested:

*H8: The perceived satisfaction will influence the practitioners' intention to continue with online sports video classes.*

### **Synchronous and Asynchronous Classes**

Next to the before mentioned relationships within the research model, the relationship among the model constructs is expected to be different between the two different groups; synchronous and asynchronous classes users. Synchronous classes take part in real time and therefore participants have to be online at the same time as their coach. Therefore, a whole other atmosphere and group dynamic is created than in asynchronous classes, which can be done every time. Thus, the practitioners are completely independent from the sports coach and the rest of the group, which means that group dynamics can rarely be established. Group dynamics can be best described as “the influential interpersonal processes that occur in and between groups over time. These processes not only determine how members relate to and engage with one another, but they also determine the group’s inherent nature and trajectory: the actions the group takes, how it responds to its environment, and what it achieves.” (Forsyth, 2018, p.18). As the group dynamics will be completely different in both classes, differences in the perceived stimuli and organism could occur, which have an effect on the behavior. Therefore, the last hypothesis is the following:

*H9: There is a significant categorical moderating effect of the classes type on the relationship among model constructs.*

### **3.1.3 Research Model**

Drawing on the S-O-R model by Mehrabian and Russell (1974), the above literature review, and the proposed hypotheses, Figure 3.1 represents the research model of this thesis. The model was adapted to investigate the impact of online video classes on the organism and its consequent behavior.



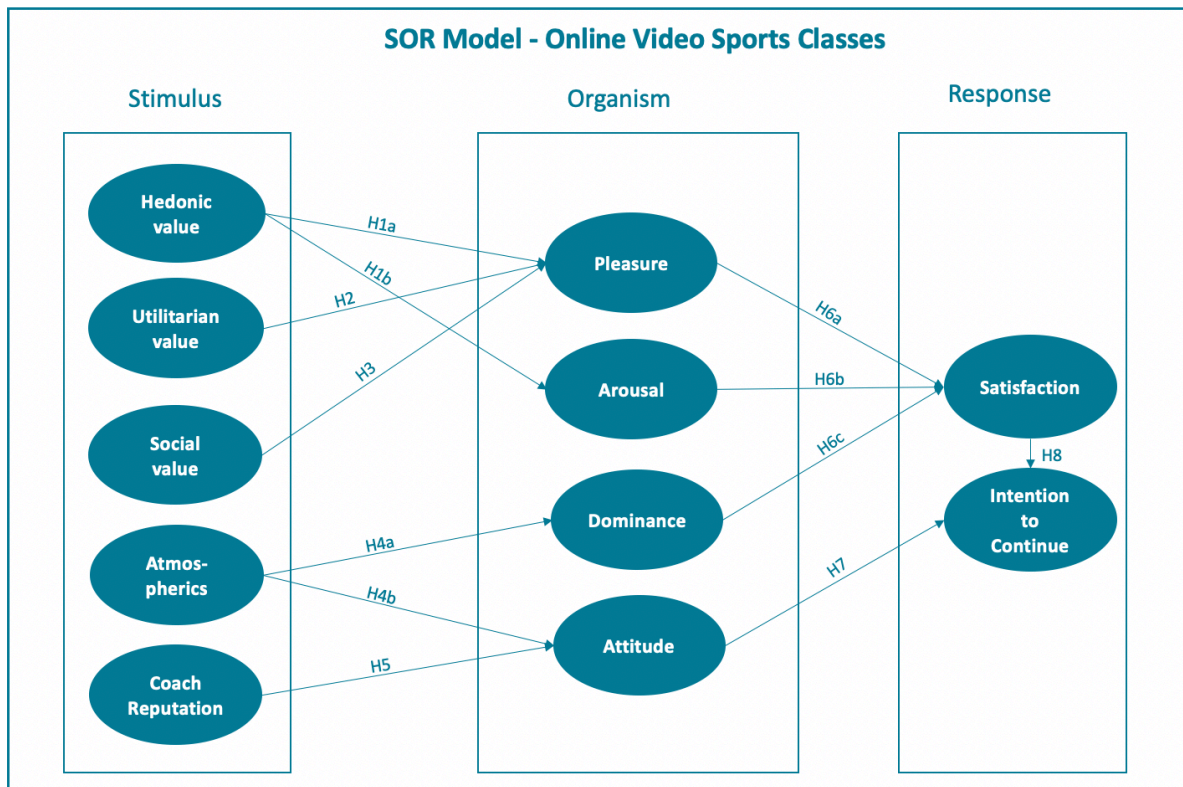


Figure 3.1 S-O-R Framework for the Online Sports Video Classes

(Source: own elaboration)

## 3.2 Methodology

### 3.2.1 Measurement and Research Instruments

The instrument for this study is a quantitative, self-administered online questionnaire. Items from already established scales were used as well as based on previous literature to ensure the validity of the methodology. First, respondents were asked for their nationality and country of residence. If they did not match the target group of this research, which only focuses on Germans living in Germany, they were led to the end of the survey. Moreover, the third question asked the participants for the type of online video sports classes, which they practice most often. They could choose between asynchronous classes, which take not part in real time such as for example YouTube sports videos, and synchronous video classes, which are taking place in real-time. Therefore, the students as well as the coach have to be online at the same time. As a ‘way out’ for the respondents, who do not participate in any of these two types of lessons, the option “others” was added. Choosing this one forwarded them to the end of the

survey. Thus, the first three questions of the survey were functioning as filters and assessed if the participants do match the target group.

The second part was aiming on measuring the different constructs of the research model. The initial items were developed based on the scales of multiple empirical studies (Allen, 2006; Bhattacharjee, 2001; Henning-Thurau, 2004; Kulviwat et al., 2007; Lee, 2007; Sherman et al., 1997; Veloutsou & Moutinho, 2009; Voss et al., 2003). An academic expert in the marketing field supervised the appropriateness of the research instruments for the methodology. In total 44 items were used to capture the 11 constructs of the research model. The measurement of all construct items used a seven-point-Likert-type scale with 1 “*strongly disagree*” to 7 “*strongly agree*”. To measure the different stimuli for the synchronous online classes, different scales for the functional-, social- and emotional value as well as for the atmospherics were needed. To measure the perceived functional and emotional value of online classes, the utilitarian value scale as well as the hedonic value scale of Voss et al. (2003) was applied. For the measurement of the social value, the perceived belonging in sport scale from Allen (2006) was used and adapted. For the atmospherics, the ambient scale from Sherman et al., (1997) was used. Moreover, the brand reputation scale from Veloutsou & Moutinho (2009) was adapted to measure the reputation of the online sports coach. Furthermore, to measure the emotional impact of the synchronous online sports classes on the organism of the practitioners, the scale from Kulviwat et al. (2007) was used, who attributed it to Mehrabian and Russell (1974) and their original pleasure-arousal-dominance (PAD) scales. The scale from Kulviwat et al. (2007) is already validated and was used to examine the emotional impact on the organism in various recent studies (M. C. Hall et al., 2017; M. Hall & Elliott, n.d.). The scale is often applied for research in the field of environmental psychology and represents the dimensions of an individual’s organism response instead of a specific type of an emotional response (Eroglu et al., 2003). For the cognitive aspect, attitude, the four-item scale from Lee (2007) was chosen. It was already validated and applied in many other studies (Peng & Kim, 2014). The items were adapted to the online sports context. Afterwards, the different constructs for the response to the online sports classes had to be measured. Therefore, the customer satisfaction scale from Henning-Thurau (2004) was used to measure satisfaction. This four-item-scale was already used in other sport participation related studies and is therefore already proven to be valid in this context (Javadein et al., 2008; Pedragosa et al., 2015). For the final intention to continue with synchronous online sports classes a three-items-scale from Bhattacharjee (2001) was taken, who adapted them from Mathieson’s (1991) two-item IS use intention scale and added a third one to increase reliability. The scale was adapted and reworded to suit to the online

sports context. In table 3.1 a detailed table presenting all measurement scales and items can be found.

For the final part, in which the concentration of respondents often decreases, simple questions regarding the demographics and their general online sports classes behavior for example regarding frequency and spending were asked. The estimated duration of the survey was only five minutes, with the aim to keep it short and therefore decrease the number of dropouts during the survey. Additionally, previous research has shown that differences in the participants' gender, time and price have an impact on the sports behavior. Thus, these will be the control variables for the research model. Moreover, the internet access will be added to the latter as a good functioning of it is a preconditioning for a successful online class participation.

Measurement of Constructs		
Construct	Item wording	Source
<b>Hedonic Value (HV)</b>	Not fun/ fun Dull/ exciting Not delightful/ delightful Not thrilling/ thrilling Enjoyable/ unenjoyable	Voss et al. (2003)
<b>Utilitarian Value (UV)</b>	Effective/ ineffective Helpful/ unhelpful Functional/ not functional Necessary/ unnecessary Practical/ impractical	Voss et al. (2003)
<b>Social Value (SV)</b>	I feel like a part of an online sports group. I can really be myself on this group. People in my online sports group are friendly to me. I feel proud of belonging to this online sports group.	Allen (2006)
<b>Atmospherics (ATM)</b>	Pleasant/ unpleasant Relaxed/ tense Dull/ bright Pleasant smelling/ unpleasant smelling	Sherman et al. (1997)
<b>Reputation of the Coach (REP)</b>	This coach is trustworthy. This coach is reputable. This coach makes honest claims.	Veloutsou & Moutinho (2009)
<b>Pleasure (PLS)</b>	Happy/ unhappy Pleased/ annoyed Satisfied/ unsatisfied Hopeful/ despairing	Kulviwat et al. (2007)
<b>Arousal (ARS)</b>	Stimulated/ relaxed Excited/ calm Wide-awake/ sleepy Aroused/ unaroused	Kulviwat et al. (2007)
<b>Dominance (DOM)</b>	In control for/ cared for Controlling/ controlled Dominant/ submissive Influential/ influenced	Kulviwat et al. (2007)
<b>Attitude (ATT)</b>	I enjoy using online sports classes. I prefer using online sports classes. Using online sports classes generally benefits the practitioner. Online sports classes are a good thing.	Lee (2007)
<b>Satisfaction (SAT)</b>	I am fully satisfied with my online sports classes. My online sports classes always fulfill my expectations. My online sports classes have never disappointed me so far. My experiences with my online sports classes are excellent.	Henning-Thurau (2004)
<b>Intention to Continue (ITC)</b>	I want to continue using online home sports classes rather than discontinue its use. My intentions are to continue using my online home sports classes rather than any alternative means. If I could, I would like to discontinue the use of my online home sports classes.	Bhattacharjee (2001)

*Table 3.1 Measurement of Constructs*

*(Source: own elaboration)*

### 3.2.2 Sample and Data Collection

An online survey was used to gather the quantitative data. The survey was distributed online on Social Media channels such as Facebook, Instagram and WhatsApp in September 2020. Only those participants who had previously participated in synchronous online sports classes were eligible to conduct the survey to ensure the respondents' familiarity towards the subject matter. Furthermore, the age of online sports class participants can vary a lot as everyone who has Internet access can participate in these. Thus, Internet adoption is a primary condition for the use of online sports classes. Especially generation Y is known as being very technologically competent (Gursoy et al., 2008; Spiro, 2006) and being the most affine group of the population with this medium (Weingarten, 2009). However, through Corona and the social distancing restrictions the society had to adapt to many changes in their private and business life (Steinacker et al., 2020). Working out of the home office is a normal situation these days and therefore the Internet is more important than ever before (Nagel, 2020). With a majority of population working from home and relying on the Internet, it leads to the consequence of even "older" generations turning more familiar with it. Therefore, this research will not set an age limit for the target group. The only prerequisite is that they are Germans living in Germany to focus the target group on one nationality and one country to achieve more predictive results as the sample size is not considered as large enough to study various nationalities. Since the data collection focused on Germany, a back-translation method was used to ensure the consistency of it. The original English version survey was translated by the author of this thesis to German and a certified translator was asked to translate the German version back to English. The two different English versions of the survey were extensively compared, and no significant differences could be observed. Moreover, an already validated German translation of the PAD scale, which was the most complex scale for translation due to the high number of peculiar adjectives, was used (Hildebrandt, 2017). Afterwards three fellow Master students, who are more familiar with the research context, as well as three friends conducting online sports classes were asked for feedback on the survey and minor corrections were made. Last but not least, a pilot test with 15 participants was conducted to proof the reliability of the survey.

Before finally distributing the survey, the aspired sample size had to be determined. The most often applied and cited sample size estimation method in PLS-SEM is the rule of thumb (Hair, 2017; Kock & Hadaya, 2018). According to this rule, the sample size should be 10 times larger than the maximum number of structural paths pointing at a particular construct in the model (Hair, 2017). Applying this method to the research model of this thesis, the calculated

minimum sample size should be 30 (Barclay et al., 1995). However, as larger sample sizes increase consistency and lead to more precise results (Hair, 2017) as well as the sample size recommendation in PLS-SEM for a statistical power of 80% were also higher (Cohen, 1992), the suggested sample size was increased by 10. Thus, the aim was to collect around 300 valid responses. The questionnaire was distributed, and 520 responses were recorded in total.

## 4. Data Analysis and Results

### 4.1 Data Preparation and Preliminary Analysis

After the collection, the data had to be cautiously cleaned. In total, 520 recorded responses were recorded. Out of the 520 collected responses, unfinished responses, which were either still in progress or filtered out by one of the first three questions, were subtracted. 303 valid responses remained. The data was assessed for suspicious and inconsistent response pattern such as straight lining, missing data, outliers. As none of it was a problem, the distribution of the data was analyzed. Even if PLS-SEM does not necessarily require the data to be normally distributed it is of great importance to ensure the data is not highly nonnormal (Hair et al., 2019). Therefore, the skewness and kurtosis values of the indicators were measured. The acceptable range of skewness and kurtosis can differ slightly from author to author. Especially when normality is critical, the range of -1 to +1 is preferred (Hair, 2017; Sarstedt et al., 2017). Otherwise, a skewness and kurtosis range from -2 to +2 considered as normal distribution and applied to this research (Garson, 2012). A kurtosis range of -3 to +3 as a more indulgent version is also used by many authors (Byrne, 2010; Garson, 2012) and even kurtosis ranges from -7 to +7 can be accepted (Byrne, 2010). In addition to this, Kline stated that as a rule of thumb a value greater than 3 in skewness and a value greater than 10 in kurtosis can be the indication for a severe problem (Kline, 2011). However, Tabachnik and Fidell (2013) argued that with a large enough sample size (>200) the deviation from normality do not affect a significant difference. The valid sample size of this research is with 303 valid responses significantly higher than 200. Moreover, the majority of variables is within the -1 to +1 range and the remaining ones are all within the -2 to +2 range. Solely, the variable UV5 had a kurtosis value of 2.552 and therefore exceeded the +2 range (see table 4.1). As it is only slightly over the acceptable range determined for this study and it is only one out of the four indicators for utilitarian value this deviation is not considered a problem for this research. The indicator will remain, and the data is considered as good for the analysis.

Construct	Indicator	Excess Kurtosis	Skewness
Atmosphere	AM1	1.292	-1.138
	AM2	0.607	-0.974
	AM3	0.355	-0.944
	AM4	0.569	-0.928
Arousal	ARS1	-0.434	-0.569
	ARS2	-0.641	-0.200
	ARS3	0.049	-0.716
	ARS4	0.055	-0.763
Attitude	ATT1	-0.173	-0.905
	ATT2	-1.163	0.051
	ATT3	0.240	-0.952
	ATT4	1.710	-1.416
Dominance	DOM1	-0.465	-0.122
	DOM2	-0.207	0.080
	DOM3	0.236	0.073
	DOM4	-0.796	-0.006
Hedonic Value	HV1	0.649	-1.045
	HV2	-0.417	-0.324
	HV3	1.195	-0.978
	HV4	-0.048	-0.388
	HV5	0.742	-0.940
Intention to Continue	INT1	-0.340	-0.830
	INT2	-1.146	0.077
	INT3	-0.943	-0.527
Pleasure	PLS1	1.827	-1.152
	PLS2	1.045	-0.931
	PLS3	1.115	-1.112
	PLS4	0.401	-0.718
Reputation of the Coach	REP1	1.350	-1.157
	REP2	0.866	-1.043
	REP3	0.305	-0.876
Satisfaction	SAT1	0.345	-0.975
	SAT2	-0.216	-0.502
	SAT3	-0.706	-0.179
	SAT4	0.124	-0.747
Social Value	SV1	-1.314	0.193
	SV2	-0.382	-0.637
	SV3	-0.110	-0.203
	SV4	-0.287	-0.251
Utilitarian Value	UV1	0.721	-0.953
	UV2	1.570	-1.272
	UV3	1.180	-1.101
	UV4	0.173	-0.546
	UV5	<b>2.552</b>	-1.638

Table 4.1 Distribution – Skewness and Kurtosis Values of the Indicators.

(Source: own elaboration based on SmartPLS results)



## 4.2 Descriptive Results

The demographic and online sports profiles of the respondents are shown below in table 4.2 and 4.3. Assessing the demographic results of the respondents, one can clearly see that the great majority is female. Almost  $\frac{3}{4}$  of the online sports classes' participants are women. Regarding the age, the largest group is 25- 34. Thus, more than half of the participants are in this age range (55.8%). The second largest group is 18- 24 (27.7%) and all the other groups are much smaller in size compared to these two. However, practitioners of all ages participated from under 18 till 65-74. The diverse age of online sports class participants can be explained by the easy access. Everyone who has Internet access can participate in this. Thus, Internet adoption is a primary condition for the use of online sports classes. Generation Y, also known as Millennials, is the first generation, who grew up with digital technologies as a part of their daily and social life. They are digital natives, who are very familiar with this medium (Palfrey & Gasser, 2011). This group has been identified to be very technologically competent (Gursoy et al., 2008; Spiro, 2006). They are the most Internet-affine part of the population and as heavy internet users they are likely to have easier or more frequent access to it than other age groups in the population (Weingarten, 2009). There is no general consensus with a specific timeframe regarding this period and literature often differs slightly in years: 1978 - 1994 (Sheahan, 2005), 1980 - 2000 (Weingarten, 2009), 1982 - 2005 (Howe & Strauss, 2007). However, one can see that the majority of respondents lies in between these timeframes and can be described as Millennials. Moreover, most of the respondents were students (43.4%) or employed full time (36.6%). Summing up the participants who are employed full time and part time it reflects that in total almost half of the participants are employed (48.8%).

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## Demographics of Respondents

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Category		Frequency	Percentage (%)
<b>Gender</b>	Male	78	25.7
	Female	225	74.3
<b>Age (years)</b>	< 18	5	1.7
	18-24	84	27.7
	25-34	169	55.8
	35-44	22	7.3
	45-54	14	4.6
	55-64	8	2.6
	65-74	1	0.3
<b>Occupation</b>	Employed full time	111	36.6
	Employed part time	37	12.2
	Unemployed looking for work	19	6.3
	Unemployed not looking for work	1	0.3
	Retired	3	1.0
	Student	131	43.3
	Disabled	1	0.3

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*Table 4.2 Demographics of the Respondents.*

*(Source: own elaboration based on SmartPLS results)*

Regarding the respondents' profile related to sports, especially online sports, it can be highlighted that most of them take part in asynchronous video classes (73.9%). Thus, almost ¾ of respondents use formats such as for example YouTube or Instagram videos more often than live videos such as for example Zoom. Furthermore, more than 50% of them engage 2-3 times every week in online sports classes, followed by 22.8%, who do it once a week and 21.8% who participate less than once a week. Only 3.6% use online sports video classes daily. The most popular type of sports practiced in these classes is definitely in the category fitness and exercising (54.8%). On second place is Yoga (28.1%), and the other types of sports differentiate a lot in variety from boxing to Zumba. A major difference between online classes in comparison with traditional classes can be seen in the monthly expenditure. Respondents spent in general much less for online classes than for traditional classes. 70 % stated to not spend any money for online classes, whereas only 30 % stated the same about traditional

classes. Moreover, only 25.7% of the sample spend money on online classes whereas 82.2% do so on traditional classes and on average a higher amount. Furthermore, participants are in general also more experienced with traditional classes (72%) than online classes (50.8%). However, time is sometimes (38.3%) or often (31.7%) a barrier for many people to participate in traditional sports classes, which indicates that in total 70% of respondents sometimes do not participate in offline sports classes due to time issues. Last but not least, a great majority of the sample stated to have slightly good to extremely good Internet access (84.5%).

Online Sports Profile			
Category		Frequency	Percentage
<b>Type of classes</b>	Synchronous video classes	79	26.1
	Asynchronous video classes	224	73.9
<b>Frequency</b>	Less than once a week	69	22.8
	Once a week	66	21.8
	2-3 times a week	157	51.8
	Daily	11	3.6
<b>Type of online sports</b>	Yoga	85	28.1
	Fitness/ Exercising	166	54.8
	Pilates	11	3.6
	Boxing	1	0.3
	Cycling	5	1.7
	Stretching	10	3.3
	Dance workout	12	4.0
	Zumba	3	1.0
	Others	10	3.3
<b>Expenditure (monthly) for traditional classes</b>	I am not sure.	14	4.6
	0	88	29.0
	1-10	36	11.9
	11-20	57	18.8
	21-30	50	16.5
	31-40	22	7.3
	> 40	36	11.9
	<b>Expenditure (monthly) for online classes</b>	I am not sure.	13
0		212	70.0
1-10		38	12.5
11-20		20	6.6
21-30		15	5.0
31-40		4	1.3
> 40		1	0.3
<b>Experience with traditional classes</b>	None at all	8	2.6
	A little	15	5.0
	Rather a little	30	9.9
	A moderate amount	32	10.6
	Rather a lot	70	23.1
	A lot	85	28.1
	A great deal	63	20.8
<b>Experience with online classes</b>	Almost none	4	1.3
	A little	34	11.2
	Rather a little	58	19.1
	A moderate amount	53	17.5
	Rather a lot	87	28.7
	A lot	49	16.2
	A great deal	18	5.9
<b>Time is a barrier</b>	Yes	96	31.7
	No	91	30.0
	Sometimes	116	38.3
<b>Quality of Internet access</b>	Extremely bad	1	0.3
	Moderately bad	4	1.3
	Slightly bad	20	6.6
	Neither good nor bad	22	7.3
	Slightly good	66	21.8
	Moderately good	126	41.6
	Extremely good	64	21.1

Table 4.3 Sports Profile of the Respondents

(Source: own elaboration based on SmartPLS results)

## 4.3 Structural Equation Modeling

SmartPLS Version 3.3.2 was used for the estimation of the measurement and structural parameters of the research model. It is one of the main software tools for partial least squares structural equation modeling (Ringle et al., 2015). One of the major advantages of using PLS-SEM is the ability to estimate complex path models, which consist of a high amount of constructs and structural model relations (Sarstedt et al., 2017). Moreover, the sample size can be relatively small and allows the researcher to still achieve a high level of statistical power (Hair, 2017). Therefore, PLS-SEM is a popular method to apply for measurement in many disciplines, including marketing (Hair et al., 2012). A two-step analytical procedure was applied. In the first stage the measurement model was assessed to examine the underlying theory. The second stage covered the structural theory to assess the relationship among latent variables and to test the proposed hypotheses (Hair et al., 2019).

### 4.3.1 Measurement Model

First of all, the quality of the measurement model had to be evaluated. As the model for this research is a reflective measurement model, the internal consistency, convergent validity and discriminant validity had to be assessed (Hair, 2017). First, the discriminant validity was assessed to ensure that the different constructs are unique and distinct from each other. Therefore, the cross-loadings as well as the Fornell-Larcker criterion were examined. The cross-loadings analysis assesses if the outer loadings of the different indicators are the highest with the specific construct they are assigned to. In annex B.1 one can see that the loadings referring to its specific construct always exceed the loading, which it has on any other construct (cross-loading). Thus, according to this rule, the discriminant validity of this model is ensured. Another method, the Fornell-Larcker criterion was applied, to test if the square root of every individual construct is higher than the correlation of this construct with any other construct. Through this, the method is assessing that every construct is measuring a distinctive idea (Hair, 2017). This is the case for the research model (see annex B.2) and concludes that the constructs are valid measures. A third and more reliable method is the heterotrait-monotrait ratio (HTMT) (Henseler et al., 2015a). The threshold for this criterion is 0.85 or 0.90 if some constructs share similar concepts. As seen in annex B.3 the constructs ‘intention to continue’ and ‘attitude’ slightly exceeded the threshold of 0.90. Therefore, discriminant validity for these two constructs had to be established through eliminating an item from ‘attitude’, which was highly

correlated with an item of 'intention to continue'. The item 'ATT2' was very similar to the item 'INT2' and was furthermore also the indicator with the lowest outer weights for the construct 'attitude'. As the construct 'attitude' was measured by four different indicators and 'ATT2' was not specifically necessary for the content validity of this construct, it was eliminated. The PLS algorithm was run one more time and the HTMT results showed that the threshold was not exceeded. The value of 0.908 was decreased to 0.809 (see annex B.4). Moreover, none of the confidence intervals included a 1. Thus, discriminant validity was now also established through the HTMT criterion.

Afterwards the convergent validity was assessed. Therefore, the researcher had to examine the outer loadings of the indicators and the average variance extracted to see how the different measures of the same construct positively correlate with each other. Therefore, the indicators outer loading, also known as indicator reliability, should be above 0.7. In the model 39 out of the 43 variables fulfill this criterion (see table 4.3). Most of them have a very satisfactory value, which is greater than 0.80. Only four indicators fall below the threshold of 0.7. The two indicators with an indicator reliability of 0,6951 (ARS1) and 0,6916 (UV4) were so close to the threshold that they were considered as sufficient for this research. The other two indicators below the threshold had a loading of 0.628 (ARS2) and 0.662 (INT3). As researchers often receive weaker results in studies related to social science, the respective indicators and their effect on the composite reliability should be examined if the outer loading is between 0.40 and 0.70. The composite reliability of the other two item constructs 'attitude' with 0.86 and 'intention to continue' with 0.84 was already very high and only slightly increased with their removal. If the deletion does not increase the measure above the threshold much more and the indicators are considered as important for the content validity they should stay. Thus, all four indicators were retained. As another criterion the average variance extracted (AVE) was assessed. If the AVE value is equal to 0.50 it reflects that the specific constructs explains more than 50 per cent of the variance of its indicators (Hair, 2017). With a value range from 0.62 to 0.81 all the constructs were far above the threshold of 0,5 and very satisfactory (see table 4.4). Thus, the research model fulfills all the criteria for convergent validity.

Lastly, as a criterion for the internal consistency reliability two methods were used; Cronbach's alpha and the composite reliability. Both values should be higher than 0.70. It is always recommended to do both measures as these two methods represent the upper and lower bound of reliability and usually the accurate reliability value is represented in between those two (Garson, 2016; Hair, 2017). For this research model, all values exceed the 0.7 criteria significantly and are thus is highly satisfactory. As shown in table 4.4, the Cronbach's' alpha

values range from 0.71 to 0.90, whereas the composite values are slightly higher with a range from 0.83 to 0.93. To sum it all up, the measurement model confirmed that the constructs measures fulfill all the criteria regarding reliability and validity and below the final measurement model summary is presented:

Results Summary for Reflective Measurement Model						
Latent Variable	Indicators	Convergent Validity		Internal Consistency Reliability		Discriminant Validity
		Loadings	AVE	Composite Reliability	Cronbach's Alpha	
		>0.70	>0.50	0.60-0.90	0.60-0.90	HTMT confidence interval does not include 1
Atmospherics (AM)	AM1	0.883	0.7200	0.9107	0.8693	Yes
	AM2	0.893				
	AM3	0.895				
	AM4	0.708				
Arousal (ARS)	ARS1	0.695	0.6156	0.8623	0.8120	Yes
	ARS2	0.628				
	ARS3	0.896				
	ARS4	0.884				
Attitude (ATT)	ATT1	0.875	0.7599	0.9047	0.8425	Yes
	ATT3	0.846				
	ATT4	0.816				
Coach Reputation (REP)	REP1	0.869	0.8068	0.9260	0.8806	Yes
	REP2	0.921				
	REP3	0.905				
Dominance (DOM)	DOM1	0.783	0.6686	0.8894	0.8342	Yes
	DOM2	0.855				
	DOM3	0.867				
	DOM4	0.760				
Hedonic Value (HV)	HV1	0.863	0.7214	0.9282	0.9031	Yes
	HV2	0.864				
	HV3	0.881				
	HV4	0.834				
	HV5	0.802				
Intention to Continue (INT)	INT1	0.923	0.6331	0.8356	0.7086	Yes
	INT2	0.781				
	INT3	0.662				
Pleasure (PLS)	PLS1	0.894	0.7688	0.9300	0.8990	Yes
	PLS2	0.910				
	PLS3	0.888				
	PLS4	0.812				
Satisfaction (SAT)	SAT1	0.860	0.7283	0.9145	0.8764	Yes
	SAT2	0.890				
	SAT3	0.776				
	SAT4	0.884				
Social Value (SV)	SV1	0.812	0.6794	0.8944	0.8429	Yes
	SV2	0.782				
	SV3	0.834				
	SV4	0.867				
Utilitarian Value (UV)	UV1	0.878	0.6997	0.9204	0.8908	Yes
	UV2	0.885				
	UV3	0.886				
	UV4	0.692				
	UV5	0.826				

Table 4.4 Summary for the Reflective Measurement Model

(Source: own elaboration based on SmartPLS results)



### 4.3.2 Structural Model and Hypotheses Testing

After the assessment of the measurement model demonstrated a good quality, the next step is the assessment of the structural model to focus on the predictive capabilities of the model (Hair, 2017; Sarstedt et al., 2017). Therefore, the structural model is first assessed for collinearity issues. If tolerance values are below 0.2 or VIF values are greater than 5, collinearity issues among constructs are indicated (Hair, 2017). In annex B.5 one can see that all the predictor constructs have a VIF value in the range of 1.00 to 2.74. Thus, all constructs are far below the threshold of 5 and there are no existing collinearity issues. Next, the  $R^2$ , also known as coefficient of determination, of the endogenous latent variables were assessed. The values can range from 0 to 1 with a higher value reflecting a higher level of predictive accuracy (Sarstedt et al., 2017). Generally one can say that a  $R^2$  value of 0.25, 0.5 or 0.75 can be interpreted as weak, moderate and substantial (Hair, 2017; Sarstedt et al., 2017). Nevertheless, the interpretation of the  $R^2$  always depends on the research field and another common but lower cutoff level is 0.19, 0.33 and 0.67, which can again be described as respectively weak, moderate and substantial (Garson, 2016). Referring to first guidelines, the  $R^2$  value of ‘pleasure’ can be considered as moderate whereas all the other constructs (arousal, attitude, intention to continue and satisfaction) are rather weak even if many of them are close to the cutoff border. According to the second rule of thumbs from Garson (2016), all the constructs can be described as moderate except for ‘arousal’, which is weak and ‘dominance’, which falls below the threshold again (see annex B.6). Afterwards, the  $f^2$  square was assessed to find out in how far an endogenous latent variable is adding to the  $R^2$  of the endogenous construct, in other words; how large the effect of the variable on the respective construct is (Hair, 2017). Values of 0.02, 0.15 and 0.35 can be interpreted as a small, medium or large effect. Applying this guideline to the  $f^2$  values of this research one can see that the largest effect size has ‘coach reputation’ on ‘attitude’ with 0.3637. Very close to a large effect size value of 0.35 was also ‘hedonic value’ on ‘arousal’ (0.3457) and ‘hedonic value’ on ‘satisfaction’ (0.3158). Moreover, ‘attitude’ on ‘intention to continue’ (0.1519) and ‘hedonic value’ on ‘pleasure’ (0.2700) had clearly a medium effect. For the remaining ones, the effect size was small except for ‘dominance’ on ‘satisfaction’, which was still below the 0.02 threshold (see annex B.7). After the  $f^2$  square, the path coefficients were analyzed, which allows the researcher to see which exogeneous driver constructs are most important for one specific construct. Looking at the table below (4.5) one can see that for the organismic state of ‘pleasure’, the participants hedonic value of the online sports classes is the most important one. In contrast to the latter, the utilitarian value is less

important and the social value the least important one. Moreover, the 'hedonic value' of the online sports classes' user is important for the feeling of 'arousal' and the atmospherics are important for the feeling of 'dominance'. Looking at the 'attitude' of the practitioner one can clearly see that the reputation of the online coach is important, followed by the atmospherics. The 'attitude' is then important for the 'intention to continue' of the sports practitioner. Moreover, the feeling of 'pleasure' during the online sports classes is very important for the individual's satisfaction (SAT) whereas the feeling of 'arousal' is important but not that much and Dominance is almost not important at all for the satisfaction with the online sports classes. Thus, pleasure is the most important driver for a satisfied online sports classes' user. Last but not least, the satisfaction with the online sports classes is important for the intention to continue with it.

Afterwards the total effects were examined, which are the sum of the direct and indirect effects. Thus, the researcher can find out which one of the predecessor constructs has the largest impact on the target construct. In this model one can see that in regard to satisfaction, 'hedonic value' is the most important exogeneous driver construct. Moreover, the 'coach reputation' followed by the 'hedonic value' is the most important exogenous construct for the intention to continue (see table 4.5). Therefore, it is important for sport companies such as gyms to focus on the hedonic value of their online sports classes as it firstly has a large influence on satisfaction and secondly on the intention to continue as well. Moreover, it is important for them to hire good, reputable coaches as it is highly influencing the participants intention to continue with the classes.

The assessment of the structural model revealed that at least one of the path coefficients indicated a rather low value. To analyze the significance level of these, the complete bootstrapping procedure was applied. A Bias-Corrected and Accelerated (BCA) Bootstrap, two-tailed testing, 5,000 bootstrap samples and a significance level of 0.05 were chosen. The results indicate that all the relationships are significant except for one, which is dominance on satisfaction. Thus, H1a (0.0000), H1b (0.0000), H2 (0.0089), H3 (0.0078), H4a (0.0000), H4b (0.0000), H5 (0.0000), H6a (0.0000), H6b (0.0005), H7 (0.0000), H8 (0.0001) are supported as all of their p values, which are displayed in the brackets behind the corresponding hypothesis, are smaller than 0.05. The only hypothesis with a higher p value than 0.05 is H6c (0.4020). Thus, it is the only hypothesis, which is not significant and therefore not supported. In other words, there is no significant relationship between 'dominance' and 'satisfaction'. Otherwise, the results indicate that all the other relationships are significant. A summary of these can be seen in table 4.5. In total, this outcome recommends to rather focus on pleasure

and arousal as emotional dimensions and enhance these to increase the final satisfaction of the online sports classes' users. Thus, companies should concentrate their marketing efforts on stimuli which increase the levels of perceived pleasure and arousal such as for example the hedonic value to achieve higher levels of satisfaction, which increase the final intention to continue as well.

Model Path Coefficients						
	Path Coefficients	t Values	p Values	95% Confidence Intervals	Significance ( $p < 0.05$ )?	Hypothesis
Hedonic Value -> Pleasure	0.5442	7.8417	0.0000	[0.4099, 0.6798]	Yes	H1a (supported)
Hedonic Value -> Arousal	0.5069	10.8873	0.0000	[0.4062, 0.5894]	Yes	H1b (supported)
Utilitarian Value -> Pleasure	0.2017	2.6151	0.0089	[0.0371, 0.3426]	Yes	H2 (supported)
Social Value -> Pleasure	0.1194	2.6638	0.0078	[0.0317, 0.2084]	Yes	H3 (supported)
Atmospherics -> Dominance	0.3313	7.0118	0.0000	[0.2266, 0.4128]	Yes	H4a (supported)
Atmospherics -> Attitude	0.2766	5.2875	0.0000	[0.1711, 0.3760]	Yes	H4b (supported)
Coach Reputation -> Attitude	0.5000	9.9911	0.0000	[0.4007, 0.5940]	Yes	H5 (supported)
Pleasure -> Satisfaction	0.5190	10.8053	0.0000	[0.4225, 0.6097]	Yes	H6a (supported)
Arousal -> Satisfaction	0.1928	3.4643	0.0005	[0.0775, 0.2943]	Yes	H6b (supported)
Dominance -> Satisfaction	0.0365	0.8381	0.4020	[-0.0445, 0.1260]	No	H6c (not supported)
Attitude -> Intention to Continue	0.4306	6.2868	0.0000	[0.2905, 0.5568]	Yes	H7 (supported)
Satisfaction -> Intention to Continue	0.3057	3.9723	0.0001	[0.1475, 0.4479]	Yes	H8 (supported)

*Table 4.5 Structural Model Path Coefficients*

*(Source: own elaboration based on SmartPLS results)*

After analyzing the significance for the path coefficients, it is inevitable to look at the results for the total effects as well. In table 4.6 one can see the total effects of all the exogenous constructs on the target constructs as well as the emotional constructs (pleasure, arousal, dominance) on the intention to continue. In total, all effects, except for four, are significant. 'dominance' on 'satisfaction' and 'intention to continue' is not significant. Moreover, 'atmospherics' on 'intention to continue' as well as 'utilitarian value' on 'intention to continue' neither.

<b>Significance Testing Results of the Total Effects</b>					
	<b>Total Effect</b>	<b>t Values</b>	<b>p Values</b>	<b>95% Confidence Intervals</b>	<b>Significance (p &gt; 0.05?)</b>
<b>Arousal -&gt; Intention to Continue</b>	0.0589	2.4792	0.0132	[0.0207, 0.1128]	Yes
<b>Atmospherics -&gt; Intention to Continue</b>	0.1228	4.3318	0.0000	[0.0719, 0.1828]	Yes
<b>Atmospherics -&gt; Satisfaction</b>	0.0121	0.7937	0.4274	[-0.0138, 0.0454]	No
<b>Coach Reputation -&gt; Intention to Continue</b>	0.2153	5.4630	0.0000	[0.1433, 0.2990]	Yes
<b>Dominance -&gt; Intention to Continue</b>	0.0111	0.7911	0.4289	[-0.0117, 0.0450]	No
<b>Dominance -&gt; Satisfaction</b>	0.0365	0.8381	0.4020	[-0.0445, 0.1260]	No
<b>Hedonic Value -&gt; Intention to Continue</b>	0.1162	3.5299	0.0004	[0.0581, 0.1844]	Yes
<b>Hedonic Value -&gt; Satisfaction</b>	0.3802	8.7065	0.0000	[0.2936, 0.4631]	Yes
<b>Pleasure -&gt; Intention to Continue</b>	0.1587	3.7417	0.0002	[0.0807, 0.2448]	Yes
<b>Social Value -&gt; Intention to Continue</b>	0.0190	2.1396	0.0324	[0.0053, 0.0408]	Yes
<b>Social Value -&gt; Satisfaction</b>	0.0620	2.5288	0.0115	[0.0171, 0.1130]	Yes
<b>Utilitarian Value -&gt; Intention to Continue</b>	0.0320	1.9459	0.0517	[0.0075, 0.0722]	No
<b>Utilitarian Value -&gt; Satisfaction</b>	0.1047	2.3745	0.0176	[0.0199, 0.1935]	Yes

*Table 4.6 Significance Testing Results of the Total Effects*

*(Source: own elaboration based on SmartPLS results)*

After the Bootstrapping procedure, the next one applied is Blindfolding. Therefore, an omission distance between 5 and 10 should be chosen carefully as the number of observations divided by the omission state cannot be an integer (Garson, 2016; Hair, 2017). As the sample size is 303 divided by the default omission distance of 7 it cannot be evenly divided and is therefore valid to be used for the number of blindfolding rounds. The omission distance D was set to 7 and the procedure was run. For the construct cross validated redundancy estimates the  $Q^2$  value was assessed. All values larger than 0 indicate that the endogenous constructs are important for the prediction of the endogenous constructs (Hair, 2017). Looking at the results, all the  $Q^2$  values of the endogenous latent variables values are above 0. In detail, 'pleasure' has

the highest Q values (0.4531), followed by ‘attitude’ (0.3367), ‘satisfaction’ (0.3099), ‘intention to continue’ (0.2886) and ‘arousal’ (0.1365). The only value which is much lower than the others is ‘dominance’ with 0.07 (see annex B.8). It is just slightly above the threshold of 0 and therefore the model only has a low predictive relevance for it. However, for all the other endogenous constructs the model has a much higher predictive relevance. With respect to the control variables, our results indicate that ‘gender’ and the ‘quality of Internet access’ do not have a significant influence on the endogenous variable intention to continue (see annex B.9). However, ‘price’ and ‘time’ have a significant influence on the intention to continue of the online sports participants and should be assessed in some further studies in more detail.

## 4.4 Multigroup Analysis

Multigroup analysis is an advanced method in in partial least squares structural equation modeling and provides insight into the path coefficients from two different samples. It allows the researcher to see whether there are significant differences between specific groups. Research has proposed several approaches for this, some are non-parametric, others are parametric (Hair et al., 2017). For this research the multigroup analysis was paired with the measurement invariance of composites (MICOM) procedure. Thus, before the multigroup analysis can be executed the researcher has to ensure that that measurement invariance has been established. Otherwise, comparisons between groups are not valid.

The permutation test (MICOM procedure) consists out of three steps: the measurement of the configural invariance, compositional invariance and equality of the composite mean values and variances (Hair et al., 2017). The data contains two groups of people, who are participating in online video sports classes, the synchronous classes (classes= 1;  $n^{(1)} = 79$ ) and asynchronous classes (classes= 2;  $n^{(2)} = 224$ ). These two groups will be compared with each other to see if any specific effects in the model differ for them. First of all, the minimum sample size has to be met for each group. Referring to the 10 times rule, which was already explained in chapter 7.2, one would need at least 30 observations in every group ( $3 \times 10$ ). Referring to the recommended sample size from a power analysis, the sample size should be 54 for each group to observe  $R^2$  values of 0.25 at a 5 % significance level and a 80 % power level (Hair, 2017). With group sizes of equal or larger than 79, both of the groups are sufficiently large. However, Hair et al. (2017) state that large differences of the sample size between two groups can lead to unpropitious consequences, especially if one group is twice as large as the other one. As in this case, one group is even three times as large as the other one it is not comparable with each

other. Therefore, a random sample should be created of the larger group, so that both groups obtain a similar sample size. SPSS was used to withdraw a random sample of the asynchronous class, so that both groups have a sample size of 79. Afterwards, the permutation procedure was run for these two groups. A number of 5,000 permutations with two-tailed testing at a 5 % significance level is specified. As the data treatment, the model as well as the algorithm settings are the same for both groups, configural invariance is confirmed (Henseler et al., 2015b; Hair et al., 2017). Next, the compositional invariance has to be established to assess if the c values do significantly differ from each other or not. It can also be examined by focusing on the permutation p-values of the different composites, which have to be higher than 0.05. All the constructs had significantly higher values except for Arousal, which was only weekly significant with 0.05 (see annex B.10). However, as all constructs are equal or above 0.5 compositional invariance has been established. For step three, the researcher has to assess the composite means and variances to know if full measurement invariance has been achieved. In annex B.11 one can see that a great majority of the composites do not have equal mean values and variances, which indicates that no measurement invariance is established. Thus, there exists only a partial measurement invariance and for the comparison between the groups only the standardized coefficients can be used (Henseler et al., 2015b; Hair et al., 2017; Wong, 2019). Afterwards, to examine the results of the multigroup analysis, which is based on the permutation test, the path coefficients can be compared. As can be seen in table 4.6, all of the structural model relationships do not significantly differ between the two groups except for the relationship between ‘hedonic value’ on ‘arousal’. This relationship differs significantly between participants of synchronous ( $p^{(1)} = 0.68$ ) and asynchronous classes ( $p^{(2)} = 0.40$ ) on a 5 % level (see annex B.12), with a mean difference of 0.28 (see table 4.7). Thus, for participants of synchronous classes there is a higher correlation between hedonic value and arousal than for participants of asynchronous classes.

Permutation - Path Coefficients					
	Path Coefficients Original Difference ( S - AS)	2.5%	97.5%	Permutation p-Values	Hypothesis 10
Arousal -> Satisfaction	0.02	-0.28	0.27	0.91	
Atmospherics -> Attitude	0.02	-0.31	0.30	0.88	
Atmospherics -> Dominance	-0.02	-0.23	0.22	0.89	
Attitude -> Intention to Continue	-0.26	-0.38	0.38	0.20	
Coach Reputation -> Attitude	0.04	-0.29	0.29	0.78	
Dominance -> Satisfaction	-0.22	-0.22	0.23	0.06	
Hedonic Value -> Arousal	0.28	-0.21	0.21	0.01	Partially supported
Hedonic Value -> Pleasure	0.19	-0.40	0.39	0.36	
Pleasure -> Satisfaction	0.16	-0.28	0.28	0.26	
Satisfaction -> Intention to Continue	0.27	-0.47	0.47	0.27	
Social Value -> Pleasure	-0.17	-0.28	0.28	0.24	
Utilitarian Value -> Pleasure	0.07	-0.45	0.44	0.75	

\* the table is reduced to the categories above and the full table including the original path coefficients (S - AS) and the path coefficients permutation mean difference can be found in Annex B.12

Table 4.7 Permutation Results.

(Source: own elaboration based on SmartPLS results)

To analyze the group-specific effects more in detail, another multigroup approach can be applied. For the multigroup analysis (MGA) the same two groups are chosen again for a comparison. After using the recommended standard settings from Hair (2017), the MGA procedure in SmartPLS was run. Then, the path coefficients were analyzed to assess if the path coefficients of the first group (synchronous) are larger than the ones in the second group (asynchronous). Assessing the path coefficients highlights one more time that only for ‘hedonic value’ on ‘arousal’ there exists a significant difference between the groups (see table 4.8). Moreover, it can be assessed whether there exists also a significant difference between two constructs in the other direction by calculating  $1 - p$ . However, the only significant relationship, which differs between the two groups, is the effect of ‘hedonic value’ on ‘arousal’.

MGA - Path Coefficients				
	Path Coefficients-diff (S - AS)	p-Value original 1-tailed (S - AS)	p-Value new (S vs AS)	Hypothesis 10
Arousal -> Satisfaction	0.02	0.47	0.93	
Atmospherics -> Attitude	0.02	0.44	0.88	
Atmospherics -> Dominance	-0.02	0.56	0.89	
Attitude -> Intention to Continue	-0.26	0.90	0.21	
Coach Reputation -> Attitude	0.04	0.39	0.77	
Dominance -> Satisfaction	-0.22	0.96	0.07	
Hedonic Value -> Arousal	0.28	0.00	0.01	Partially supported
Hedonic Value -> Pleasure	0.19	0.16	0.31	
Pleasure -> Satisfaction	0.16	0.12	0.24	
Satisfaction -> Intention to Continue	0.27	0.14	0.27	
Social Value -> Pleasure	-0.17	0.89	0.22	
Utilitarian Value -> Pleasure	0.07	0.36	0.72	

*Table 4.8 Multigroup Analysis - Path Coefficient Results.*

*(Source: own elaboration based on SmartPLS results)*

As explained in Chapter 4.1, the skewness and kurtosis range from -2 to +2 indicated a normal distribution in this research (Garson, 2012) and the composite variances did not differ between groups (MICOM procedure), the results of the parametric test are presented below in table 4.9 as well.



<b>MGA - Parametric Test</b>				
	<b>Path Coefficients-diff (S - AS)</b>	<b>t-Value ( S vs AS )</b>	<b>p-Value (S vs AS)</b>	<b>Hypothesis 10</b>
<b>Arousal -&gt; Satisfaction</b>	0.02	0.10	0.92	
<b>Atmospherics -&gt; Attitude</b>	0.02	0.14	0.89	
<b>Atmospherics -&gt; Dominance</b>	-0.02	0.14	0.89	
<b>Attitude -&gt; Intention to Continue</b>	-0.26	1.29	0.20	
<b>Coach Reputation -&gt; Attitude</b>	0.04	0.28	0.78	
<b>Dominance -&gt; Satisfaction</b>	-0.22	1.78	0.08	
<b>Hedonic Value -&gt; Arousal</b>	0.28	2.46	<b>0.01</b>	<b>Partially supported</b>
<b>Hedonic Value -&gt; Pleasure</b>	0.19	1.01	0.32	
<b>Pleasure -&gt; Satisfaction</b>	0.16	1.17	0.24	
<b>Satisfaction -&gt; Intention to Continue</b>	0.27	1.10	0.27	
<b>Social Value -&gt; Pleasure</b>	-0.17	1.24	0.22	
<b>Utilitarian Value -&gt; Pleasure</b>	0.07	0.37	0.71	

*Table 4.9 Multigroup Analysis - Parametric Test Results.*

*(Source: own elaboration based on SmartPLS results)*

As one can clearly see, the results of the parametric test are very similar to the permutation test. Similar to the test before, only the relationship between hedonic value and arousal indicates a significant difference between the two groups. Moreover, the Welch – Satterthwait test reflects the same results (table 4.10).

Welch - Satterthwait Test				
	Path Coefficients-diff (S - AS)	t-Value ( S vs AS )	p-Value (S vs AS)	Hypothesis 10
Arousal -> Satisfaction	0.02	0.10	0.92	
Atmospherics -> Attitude	0.02	0.14	0.89	
Atmospherics -> Dominance	-0.02	0.14	0.89	
Attitude -> Intention to Continue	-0.26	1.29	0.20	
Coach Reputation -> Attitude	0.04	0.28	0.78	
Dominance -> Satisfaction	-0.22	1.78	0.08	
Hedonic Value -> Arousal	0.28	2.46	0.02	Partially supported
Hedonic Value -> Pleasure	0.19	1.01	0.32	
Pleasure -> Satisfaction	0.16	1.17	0.25	
Satisfaction -> Intention to Continue	0.27	1.10	0.27	
Social Value -> Pleasure	-0.17	1.24	0.22	
Utilitarian Value -> Pleasure	0.07	0.37	0.71	

Table 4.10 Multigroup Analysis - Welch- Satterthwait Test Results.

(Source: own elaboration based on SmartPLS results)

Even though Hair et al. (2017) recommend using the permutation test, which performs more reliable and conservatively due to its nonparametric nature, the use of multiple methods provides an even higher confidence level with the final results of this group analysis for the researcher. All the different analyses obtain the same results and one can clearly state that only the relationship between ‘hedonic value’ and ‘arousal’ differs between the two groups and is higher for the synchronous classes. Thus, Hypothesis 9 is only partially supported. To conclude the various results of the different multigroup approaches one could state, that between these two groups almost no heterogeneity could be observed. Thus, the data can be pooled as long as the structural difference are clearly modelled to be moderating effects (Henseler et al., 2015b). Providing a better overview of the discussed results, table 4.11 presents a final summary of the research question, the three sub-research questions as well as the nine different hypotheses.

Summary - Hypotheses			
Main Research Question	Sub Research Question	Hypotheses	Accepted? (Yes/ No)
<i>How can sports companies positively influence the continuous intention of their customers to keep them further engaged in online video sports classes in the long-term?</i>	<i>Which are the most important stimuli (S) influencing the cognitive and emotional states (O)?</i>	<b>H1a</b> The perceived hedonic value of online sports video classes will influence the users' emotional dimension pleasure.	Yes
		<b>H1b</b> The perceived hedonic value of online sports video classes will influence the users' emotional dimension arousal.	Yes
		<b>H2</b> The perceived utilitarian value of online sports video classes will influence the emotional dimension pleasure.	Yes
		<b>H3</b> The perceived social value of online sports video classes will influence the emotional dimension pleasure.	Yes
		<b>H4a</b> The surrounding atmospherics in which the online sports video classes are practiced will influence the emotional dimension dominance.	Yes
		<b>H4b</b> The surrounding atmospherics in which the online sports video classes are practiced will influence the users' attitude towards online sports video classes.	Yes
		<b>H5</b> The perceived reputation of the online coach will influence the users' attitude towards online sports video classes.	Yes
	<i>Which are the most important cognitive and affective states (O) influencing satisfaction and continuous intention (R)?</i>	<b>H6a</b> The emotional dimension pleasure will influence the perceived satisfaction of the practitioner.	Yes
		<b>H6b</b> The emotional dimension arousal will influence the perceived satisfaction of the practitioner.	Yes
<b>H6c</b> The emotional dimension dominance will influence the perceived satisfaction of the practitioner.		No	
<b>H7</b> The attitude towards online sports video classes will influence the practitioners' intention to continue with it.		Yes	
	<b>H8</b> The perceived satisfaction will influence the practitioners' intention to continue with online sports video classes.	Yes	
<i>Are there any significant differences between the participants of synchronous and asynchronous classes?</i>	<b>H9</b> There is a significant categorical moderating effect of the classes type on the relationship among model constructs.	Partially	

Table 4.11 Summary Hypotheses.

(Source: own elaboration based on SmartPLS results)

## 5. Conclusions and Recommendations

### 5.1 Summary of Findings and Discussion

Based on the SOR model, this study investigated how the different stimuli of online video sports induces the users' organism in terms of emotion and attitude, and how it further influences the users' satisfaction and intention to continue. Moreover, it examines whether there is a difference in these relationships between two different types of online video classes, synchronous and asynchronous classes. Considering the objective and the research questions of the present study, this chapter will identify and discuss in detail:

- a. the most important stimuli (S) influencing the cognitive and emotional states (O).
- b. the most important cognitive and affective states (O) influencing satisfaction and continuous intention (R).
- c. the differences in the structural model between the participants of synchronous and asynchronous classes.

First of all, five different types of stimuli (S) were assessed, namely, hedonic value, utilitarian value, social value, atmospherics and coach reputation. As proposed in the hypotheses, all of the five stimuli had a significant positive influence on the specific affective and cognitive states, which they were related to in the research model (see table 4.11). Pleasure was positively influenced by the hedonic value, utilitarian value and social value. The most important stimulus for pleasure is the hedonic value with a path coefficient of 0.54, followed by the utilitarian value and afterwards social value. These results are in line with previous literature as Song and Kim (2015) already stated that the hedonic as well as the utilitarian value have an influence on positive emotions, in this case the dimension of pleasure. The hedonic value has a greater influence on pleasure, which could be due to its intrinsic nature as it reflects a more experiential value with more intrinsic motives such as enjoyment (Lin et al., 2018; Peng & Kim, 2014). Thus, the values seen in the online sports classes such as fun are more important for the perceived feeling of pleasure than the utilitarian one. Even if the functional value also evokes pleasure (Cabanac, 2002), the hedonic value is the one with the greatest impact on it. Referring pleasure to the online environment, another study from Fiore et al. (2005) revealed a significant relationship between the hedonic value and the dimensions of pleasure and arousal

in relation with visitors of an online store. In the proposed research model, arousal was also strongly influenced by the hedonic value (0.51). These findings highlight obedient with the before mentioned literature, that offline as well as online, especially the hedonic value plays an important role for the determination of positive emotions. The last type of perceived values, the social value, has also a significant impact on pleasure. Literature, in combination with recent statistics, underlined the importance of social relationships for the subjective well-being and defines it as one main reason for people to participate in sports activities (Allen, 2003; Allender et al., 2006; Lamu & Olsen, 2016; Seippel, 2006). Thus, obedient with previous research, social value can be identified as an influential factor for pleasure in the online sports environment. Regarding the last emotional dimension dominance, one can say that the atmospherics of the room in which the online sports are exercised are important for it (0.33). Dominance is the extent to which an individual feels restricted in his practice, relating to feelings of control. It can be best described as the degree to which a person is convinced to be free, in control and independent of the environment (Bakker, Van der Voordt, et al., 2014; Mehrabian & Russell, 1974). Thus, in online sports, the atmospherics have an influence on the perceived feeling of freedom and control of the practitioners. This effect can also be reflected in physical sports, in which especially women often feel a high level of insecurity in diverse surroundings, which represents a low level of dominance (Kilpatrick M et al., 2005; Seippel, 2006). This insecurity in unpleasant environments can be unmotivating and is therefore one of the biggest barriers in sports participation (Allender et al., 2006). Thus, a pleasant ambience has a positive effect on the individuals emotions (Bigdeli et al., 2014) in traditional sports as well as in online sports. In addition to dominance, the attitude of the individual practitioner is also influenced by the atmospherics (0.28) and even more by the reputation of the online coach (0.50). The importance of the atmospherics on the attitude goes hand in hand with the before discussed relation between dominance and attitude. A pleasant surrounding is important and in general physical as well as online atmospherics can impact an individual's attitude (Palmero & Price, 2019). The research shows that a pleasant environment, such as for example a bright, spacious and calm room to do Yoga, has a positive influence on the attitude towards online sports of the practitioners. Moving to the last stimuli, coach reputation, multiple studies have highlighted brand reputation as an influential factor on the organism. A good reputation has a positive effect on the consumers, whereas in contrast to this a negative emotion can lead to a negative brand attitude (Jung & Seock, 2016; Kim & Lennon, 2013; Ravaja et al., 2015). In line with these findings, the research model confirmed the same results regarding the reputation of the online coach. The reputation of the coach has a great influence on the practitioner's

attitude towards the online sports classes and a good reputable coach is therefore of high importance to keep a positive attitude in this sector. Thus, to sum up the first findings, the answers to SRQ 1 *'Which are the most important stimuli (S) influencing the cognitive and emotional states (O)?'* are hedonic value and reputation of the online coach.

Moving forward to the organism (O), one can examine its effect on the behavioral response (R) of the practitioner. The different organismic states can be split up into affective and cognitive states, whereas the affective states are represented by the three emotional dimensions; pleasure, arousal and dominance (PAD). The cognitive state is characterized by the component attitude, which is of great importance for the final intention to continue. Multiple studies have pointed out that cognitive and emotional states of users are closely related with the continuous intention of an activity (C. S. Lin et al., 2005; Thong et al., 2006), including attitude (Bhattacharjee & Sanford, 2006; Shih, 2004). Also for sporting events venues the use of cognitive and emotional measures is recommended (Martin et al., 2008). In addition to the latter, attitude is an important determinant for the users intention to continue with a service in an e-learning environment (Lin, 2011; Stoel & Hye Lee, 2003). Hence, online video sports are exactly this type of service and therefore the users attitude towards technology also plays an important role for the continuance intention in the World-Wide-Web context (Moon & Kim, 2001). The significant relationship between the attitude towards online home sports and the intention to continue of the practitioner, which was pointed out in this study, clearly matches with the previous scientific findings. All in all, the attitude is a determining factor for people to continue with online home sports. Moreover, focusing on the emotional states one can clearly state that emotions have a significant impact on satisfaction. Research has already proposed this many years ago (Erevelles, 1998; Mano & Oliver, 1993; Oliver, 1993; Phillips & Baumgartner, 2002; Yu & Dean, 2001). In other words, emotions serve as a guide to practitioners satisfaction (Wirtz et al., 2000). The cognition-emotion interplay linked with satisfaction has been already studied in the e-service environment with the result of positive emotions increasing the satisfaction level and negative emotions leading to complaints (Chea & Luo, 2008; van Dolen et al., 2007; Weathers et al., 2007). In the fitness context, the influence of emotions on satisfaction revealed the same positive outcome (Caro & García, 2007; Pedragosa et al., 2015). Moreover, applying the S-O-R model for this research context, highlights the underlying assumption that emotions mediate the effect on the future behavioral intentions, such as in this case satisfaction and intention to continue (Ladhari et al., 2017). Mehrabian and Russell (1974) therefore suggested the use of the PAD model, which divides the emotions into three different dimensions (pleasure, arousal and dominance) to understand

the effects within the organism. Comparing the three emotional states one can clearly state that pleasure (0.52) is the most important driver for the satisfaction in the online sports classes, which is the one dimension reflecting the extent to which an individual perceives happiness, using adjectives such as annoyed – pleased, unhappy – happy and unsatisfied – satisfied to describe it (Bakker, Van der Voordt, et al., 2014; Mehrabian & Russell, 1974). As one can see, even the adjective satisfied is already included in the measurement of a person’s pleasure level. Previous research in the service industry revealed that pleasure has a significant influence on satisfaction (Lee et al., 2016; Lin & Worthley, 2012; Otterbring, 2017; Wirtz et al., 2000; Yüksel & Yüksel, 2007). As an online sports class is also an offered service, the results of the structural model meet the proposed expectations. Thus, the online sports classes satisfaction increases through the mediating influence of pleasure. Next to pleasure, arousal is a very important mediator as well but by far not as influential as pleasure (0.19). Arousal reflects a state ranging from sleep to a high level of excitement and Mehrabian and Russell (1974) use adjective pairs such as sleepy – wide-awake, relaxed – stimulated and calm – excited to describe it (Bakker, van der Voordt, et al., 2014). In the service as well as in the sports industry, arousal has a significant influence on satisfaction (Caro & García, 2007; Jiang & Lu Wang, 2006; Yüksel & Yüksel, 2007). However, to better explain the mediating role of pleasure and arousal in the service context, Wirtz et al. (2000) evaluated the use of a new variable “target-arousal level” in the evaluation process of satisfaction. The result of their study indicated that the use of the original pleasure - arousal effect from Mehrabian and Russell (1974) should be reduced to situations with a high target arousal. Other studies in the service environment confirmed this recommendation of focusing not only on the overall arousal level itself, but also on the specific arousal level expectations of the customers (Lin, 2009; Wirtz et al., 2007). According to this, it could be that the expected arousal level differentiates between the different sports practices in the online classes. For example, a yoga classes participant, with the goal to relax, will most likely aim for a different target arousal than someone who is participating in HIIT workouts to lose weight. The latter will seek for a high-target arousal. Thus, the target-arousal could play a big role, especially in the sports environment, and further research in this field should be conducted. The last dimension, dominance, is the least important one in regard to satisfaction. Its influence is not significant for the final satisfaction (0.04). This result shows that the feeling of independence, control and freedom in the online sports environment is not important for practitioners in order to feel satisfied with the class. In this context it could possibly be rather seen as a precondition or dominating factor for the participation in classes, but nothing, which will positively influence the behavioral response of the online sports

classes' participants. Moreover, dominance is a highly discussed dimension and there exist several opinions in previous research upon the integration of the third dimension. Some literature discusses the use of only the first two dimensions; pleasure and arousal (Bakker, van der Voordt, et al., 2014). After discussing the importance of the different cognitive and affective states for the feeling of satisfaction, one can state that satisfaction is important for the practitioners' intention to continue with their online sports classes (0.31). As a primary driver for the customers post-adoption responses, satisfaction has a significant influence on the continuance intention (Bhattacharjee, 2001; Bougie et al., 2003). Also in the e-service industry, the same effect can be seen (Chea & Luo, 2008; Cheung & Lee, 2011; Chiu et al., 2005; Pereira et al., 2015). Hence, satisfied online video sports classes participants are most likeable to continue with the use of the service. Summing up the second round of findings, the answers to SRQ 2 '*Which are the most important cognitive and affective states (O) influencing satisfaction and continuous intention (R)?*' are attitude and pleasure.

Furthermore, through analyzing the total effects, which are the sum of the indirect and direct effects, the researcher can indicate the most important drivers for the target construct (intention to continue). Regarding the mediators' pleasure, arousal and dominance, only the first two have a significant influence on the continuous intention. Pleasure is the dimension with the greatest effect on it (0.16), followed by arousal (0.06). Mehrabian and Russell (1974) stated that emotions lead to different behavioral responses, which can be a specific approach behavior (Eroglu et al., 2003; Menon & Kahn, 2001) and various studies emphasized multiple factors influencing the users' continuance intention regarding new services, including emotions (Y. Lee & Kwon, 2011; Martin et al., 2008). Thus, the cognitive user states have a close relationship to the intention to continue with an activity (Lin et al., 2005; Thong et al., 2006) and especially pleasure and arousal are important in the online sports industry. This result underlines how important the perceived fun and happiness during an online sports class are together with a high arousal level. In contrast to the latter, dominance is the only dimension with no significant effect on the intention to continue of the practitioners. As already discussed before in relation with satisfaction, dominance does not lead to a continuation of online sports. Recent statistics mentioned a lack of confidence in environmental surroundings as one of the main barriers for people to participate in sports (Allender et al., 2006; Kilpatrick M et al., 2005; Smith & Smoll, 1990) but in regard to online home sports, no positive or negative relationship between dominance and the intention to continue following online classes can be identified.

Moreover, for the desired behavioral response of intention to continue, the reputation of the coach (0.22) and the hedonic value (0.12) have the largest impact from all the exogenous



driver constructs on it, whereas the hedonic value has furthermore the largest influence on satisfaction (0.38) as well. Thus, the predecessor constructs hedonic value and coach reputation are the most important ones in determining the participants' satisfaction and intention to continue within the online sports industry. However, also the other exogenous driver constructs such as atmospherics (0.12) and social value (0.02) significantly influence the practitioners' intention to continue, whereas the utilitarian value has no significant influence on it (see table 2). However, even if utilitarian value has no significant influence on the intention to continue it indicates a significant influence on the satisfaction. This reflects that a utilitarian value in the online sports context, for example the practicality, the time flexibility or even the physical benefit such as muscle gain, can satisfy the practitioner but if it is not entertaining or social it will not affect his intention to continue. Thus, the hedonic and social value outweigh the functional and more beneficial value customers see in the online sports classes. Therefore, the individual rather needs to see the hedonic and social value in the activity and especially enjoy participating in the online sports classes. Thus, all the three perceived values (hedonic, utilitarian and social) significantly influence satisfaction and intention to continue except for the utilitarian value which only significantly influences satisfaction. To conclude one could say, that hedonic value, online coach reputation, pleasure and attitude have the largest total effect on intention to continue.

Last but not least, a multigroup analysis allowed the researcher to see whether there are significant differences in the online sports model between the two different groups; synchronous and asynchronous classes. By comparing the two groups, only one significant difference was detected in the relationship between hedonic value and arousal. Thus, depending on the type of online sports video classes conducted, the hedonic value will significantly differently influence the arousal level. Hedonic value reflects the experiential value with more intrinsic motives such as leisure or enjoyment (Lin et al., 2018; Peng & Kim, 2014b) and arousal is the extent to which an individual is stimulated or excited (Mehrabian & Russell, 1974). In simple words, the extent to which a practitioner perceives a fun value in the online classes influences the extent to which he is excited and stimulated during the activity differently between synchronous and asynchronous sports classes. It is higher for participants of synchronous classes. The different effects on arousal between the two groups could be explained by the lack of possibilities in socializing depending on the type of online sports executed. As everything takes place in an intangible online environment, only synchronous classes, in which all the students have to be online at the same time together with their sports coach, allow the participants to create social relations online and to interact with each other

(Mabrito, 2006; Skylar, 2009). On the other hand, asynchronous videos do not facilitate a direct social exchange as everyone is practicing the sports with the guidance of videos at their own time and pace (Latchman et al., 2001; Mabrito, 2006; Skylar, 2009). Possibly, the differences in social interaction or just the fact that some classes are taking part in real-time could have an influence on the arousal level. As these are only assumptions further research has to be conducted to explore this matter and to make some statements with confidence. Hence, summarizing the latest findings, the answer to SRQ 3 '*Are there any significant differences between the participants of synchronous and asynchronous classes*)' is yes. There is one significant difference in the relationship between hedonic value and arousal.

Considering the main objective of the present research, this study aimed at developing a better understanding of what drives practitioners to participate in online sports classes and to further continue with them. The researcher could gain first valuable insights into the online video sports environment, which allowed the latter to answer the main research question '*How can sports companies positively influence the continuous intention of their customers to keep them further engaged in online video sports classes in the long-term?*'. The results of the research emphasized that hedonic value and online coach reputation are the most influential stimuli for the continuous intention of the practitioners. Furthermore, attitude and pleasure were identified as the most important organismic states. Therefore, sports companies are recommended to focus on these two stimuli as well as the one affective and cognitive state to increase the intention to continue of their current online sports classes' users. Further recommendations will be given in the practical implications (chapter 5.3).

## **5.2 Theoretical Implications**

This study provides several important theoretical implications. First, different from most previous research, which was mainly focusing on sports in general, this study aims at examining the new trend of online sports. Extensive desk research on previous literature was conducted to gain insights into the traditional sports and online environment. Recent literature regarding the rise and current need for online home sports (Aktuğ et al., 2020; Chen et al., 2020; Claussen et al., 2020; Steinacker et al., 2020; Wackerhage et al., 2020) in combination with statistics about changing online and sports behavior of consumers (GlobalWebIndex, 2020; YouGov, 2020) were put into context with already existing literature. Based upon previous research in the field of asynchronous and synchronous classes (Latchman et al., 2001; Mabrito, 2006; Skylar, 2009), the researcher was able to adapt the findings to the online sports

environment and create some clear distinctions between the two major online video sports classes groups. Furthermore, the research instrument of this study was a quantitative survey through which data from 303 respondents were gathered. This offered further valuable insights into the current study area.

Secondly, the present study adapts the S-O-R model to this new research area and examines it with regard to the continuous intention of online sports classes. To date, no empirically tested model has proposed predictive relationships among the online sports athletes' stimuli and behavioral variables and therefore this research will be one of the first ones in this context.. More specifically, the study investigated how five different stimuli of online video sports classes induces the users' organism in terms of emotion and attitude, and how it further influences the users' satisfaction and intention to continue. As a result, the model revealed the two most important stimuli for these classes; namely hedonic value and online coach reputation. Pleasure was identified to be the most influential affective state for the practitioner's intention to continue together with the cognitive state attitude. Dominance had no significant influence, neither on satisfaction nor on the intention to continue. Furthermore, the perceived satisfaction had a significant positive influence on the final intention to continue.

Thirdly, a multigroup analysis enabled the researcher to discover a significant difference between the two specific groups. The result highlighted that the relationship between hedonic value and arousal differs between synchronous and asynchronous online video sports groups. Further research in this field is needed to examine the impact of this difference. Nevertheless, except for this structural difference, there could almost be no heterogeneity observed between these two groups, which allows future researches to pool the data of this groups as long as the one structural difference is clearly marked as a moderating effect (Henseler et al., 2015b).

### **5.3 Practical Implications**

The present study offers several practical implications to both online sports classes users and providers. Users should realize that they can actively influence their final behavior to avoid negative outcomes such as a discontinuous intention. For instance, they should focus on some online sports classes in which they see a large hedonic value. Thus, choose classes, which are fun and practice these because it mainly makes them feel happy. This perceived pleasure will then lead to satisfaction and increase the intention to continue with it. Therefore, taking part in a class, which is not only of functional but even more important of a great hedonic value, will decrease the chance of stopping the participation in sports classes and prevent people from a

decrease in physical activity. For this reason, to keep fit and healthy, especially in difficult times with restricted sports offers such as COVID-19, people should focus on online video classes, which they perceive as fun and increase their pleasure. Moreover, choosing a reputable coach, who is for example recommended by a good friend, will also help them to continue with the classes, even if this might happen unconsciously. In addition to this, simple actions such as creating a nice atmosphere or an own space to do the online classes will be beneficial for the continuation as well. Last but not least, increasing the social value of the classes will help to proceed with them in the future. Users of mainly asynchronous classes could for example use video calls with friends to practice together or also try synchronous classes, as they allow more social interaction and new social relations can arise.

Focusing on the managerial view of online home sports classes, the research demonstrates the most important drivers for the continuous intention of the practitioners. Hedonic value and coach reputation are the most important stimuli for the intention to continue, followed by the social value and the atmospherics. Moreover, pleasure is the most important emotion, with the greatest effect on continuation. Therefore, it is important for sport classes provider to focus on the perceived hedonic value of their online sports classes by their customers as it firstly has a large influence on satisfaction and secondly on the intention to continue as well. They should concentrate their marketing efforts on the communication of the hedonic value of their classes. Thus, analyse their target group and tailor the marketing towards the fun value of the classes. Moreover, it is important for them to hire good, reputable coaches as it is highly influencing the participants intention to continue with the classes and use them for marketing purposes as well. The online coaches should also focus during the classes on enhancing the perceived hedonic value of the participants as well as the perceived pleasure. Moreover, companies could increase the social value in synchronous classes by engaging the participants more or giving them the chance to ask a question. In addition to this, a platform could be created to establish a community and enable participants to chat and build new social relationships. An example for this would be Strava, which is a social network for athletes and practitioners can comment on each other's activities (Strava, 2020). Last but not least, the atmospherics play an important role as well. Sport classes providers cannot actively help people to create a suitable space at home but could inspire them with video or stock footage on how it could look like. Furthermore, they could publish a manual on 'how to build your home gym space', which is currently receiving a lot of interest online (Pinterest, 2020). Furthermore, events with for example a sports coach and an interior designer, giving them advices on how to do it could be organized. To sum it all up, online home sports is developing to a promising industry and

providers can improve their offers by analysing their target group and following the suggested recommendations.

## **5.4 Limitations and Further Research**

Although this research offers useful insights into online sports classes, certain limitations should be acknowledged. First of all, the great majority of respondents rely on a young-adult segment of users with similar demographics and targets only one nationality. Future research may consider more comprehensive samples to cover a more diverse range of people, including different nationalities and age groups. This will test the boundaries of the model in other countries and enhance the robustness of the results. Secondly, the control variables emphasized that Internet access and gender do not have a significant influence on the intention to continue but therefore price and time do. Thus, future research could investigate the impact of money and time on the practitioner's intention to continue in more detail. Moreover, the three dimensions pleasure, arousal and dominance (PAD) were used to understand the individuals' organism and its emotions (Mehrabian & Russell, 1974). However, as the SOR model by Mehrabian and Russell (1974) might be limited to mostly high target arousal situations (Wirtz et al., 2000), it could be interesting to research on the right target-arousal instead of the general impact of arousal. In the sports context, practitioners often exercise different types of sports and therefore might aim for different arousal levels. This outcome would provide companies with additional information on how to stimulate various customer groups with different target-arousal-level through specific elements such as for example the help of music, colors, or tempo.

## 6. References

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# Annexes

## Annex A.

### Annex A.1 Questionnaire – English

#### Online home sports

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Start of Block

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Hello,

thank you for taking part in this survey for my master thesis. I would like to know more about your experience with doing sports from home through the guidance of online videos, called online home sports. For this purpose, I have prepared a survey, which will take you about 5 minutes to complete. The survey is completely anonymous. Your opinion is very important to me and I appreciate your input a lot.  
Thank you very much for your time.

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Q1 Are you German?

- Yes
- No

*Skip To: End of Survey If Are you German? = No*

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Q2 Do you live in Germany?

- Yes
- No

*Skip To: End of Survey If Do you live in Germany? = No*

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Q3 Which type of online sports classes do you participate in most often?

- synchronous video classes (take place in real time e.g. Zoom)
- asynchronous video classes (do not take place in real time e.g. YouTube videos)
- Neither nor

*Skip To: End of Survey If Which type of online sports classes do you participate in most often? = Neither nor*

---

**Q4 For answering the remaining questions of the survey, please always refer to the type of online sports classes you participate in most often (either synchronous or asynchronous).**

Please indicate the answers, which describe the online sports classes the best.

	1	2	3	4	5	6	7	
Not fun	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Fun
Dull	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Exciting
Not delightful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Delightful
Not thrilling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Thrilling
Unenjoyable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Enjoyable

---

Q5

	1	2	3	4	5	6	7	
Ineffective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Effective
Unhelpful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Helpful
Not functional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Functional
Unnecessary	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Necessary
Impractical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Practical



Q6 Please indicate on a scale from 1-7 what is your level of agreement with the following statements.

	1 Strongly disagree	2	3	4 Neither agree nor disagree	5	6	7 Strongly agree
I feel like a part of an online sports group.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can really be myself in this online sports group.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People in my online sports group are friendly to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel proud of belonging to this online sports group.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q7 Please indicate the answers, which describe the ambience of your online home sports classes environment (e.g. your room, garden, etc) the best.

	1	2	3	4	5	6	7	
Unpleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Pleasant
Tense	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Relaxed
Dull	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Bright
Unpleasant smelling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Pleasant smelling



Q8 Please indicate from 1-7 what is your level of agreement with the following statements regarding the coach of your online home sports classes.

	1 Strongly disagree	2	3	4 Neither agree nor disagree	5	6	7 Strongly agree
This coach is trustworthy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This coach is reputable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This coach makes honest claims.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q9 Please describe how you feel when participating in online sports classes. Some of the pairs might seem unusual, but you will generally feel more one way than the other.

	1	2	3	4	5	6	7	
Unhappy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Happy
Annoyed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Pleased
Unsatisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Satisfied
Despairing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Hopeful

Q10

	1	2	3	4	5	6	7	
Relaxed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Stimulated
Calm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Excited
Sleepy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Wide-awake
Unaroused	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Aroused

Q11

	1	2	3	4	5	6	7	
Cared for	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	In control
Controlled	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Controlling
Submissive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Dominant
Influenced	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Influential

Q12

Please indicate from 1-7 what is your level of agreement with the following statements.

	1 Strongly disagree	2	3	4 Neither agree nor disagree	5	6	7 Strongly agree
I enjoy using online sports classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer using online sports classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using online sports classes generally benefits the practitioner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Online sports classes are a good thing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Q13

	1 Strongly disagree	2	3	4 Neither agree nor disagree	5	6	7 Strongly agree
I am fully satisfied with my online sports classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My online sports classes always fulfill my expectations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My online sports classes have never disappointed me so far.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My experiences with my online sports classes are excellent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q14

	1 Strongly disagree	2	3	4 Neither agree nor disagree	5	6	7 Strongly agree
I want to continue using online home sports classes rather than discontinue its use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My intentions are to continue using my online home sports classes rather than any alternative means.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I could, I would like to discontinue the use of my online home sports classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

T2 60 % done

End of Block 1

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Start of Block 2

Q15 What is your gender?

- Male
  - Female
- 

Q16 What is your age?

- Under 18
  - 18 - 24
  - 25 - 34
  - 35 - 44
  - 45 - 54
  - 55 - 64
  - 65 - 74
  - 75 - 84
  - 85 or older
-

Q17 Please indicate your occupation:

- Employed full time
  - Employed part time
  - Unemployed looking for work
  - Unemployed not looking for work
  - Retired
  - Student
  - Disabled
- 

Q18 How often do you participate in online sports classes?

- Daily
  - 4-6 times a week
  - 2-3 times a week
  - Once a week
  - Less than once a week
-

Q19 What type of online sports classes do you participate in most often?

- Yoga
- Fitness/ Exercising
- Pilates
- Boxing
- Cycling
- Stretching
- Dance workout
- Zumba
- Other

Q20 How much money do you spent monthly on...

	I am not sure.	0	1-10	11-20	21-30	31-40	>40
...traditional sports classes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...online sports classes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Q21 Please indicate from 1-7 how you would rate your level of experience with...

	1 Almost none	2 A little	3 Rather a little	4 A moderate amount	5 Rather a lot	6 A lot	7 A great deal
... traditional sports classes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... online sports classes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q22 Is time a barrier for you to participate in traditional/ physical sports classes?

- Yes
- No
- Sometimes

Q23 How would you rate your quality of Internet access?

	Extremely bad	Moderately bad	Slightly bad	Neither good nor bad	Slightly good	Moderately good	Extremely good
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

T3 100 % complete

End of Block 2

## Online- Sportkurse

---

Start of Block

---

Hallo,  
Vielen Dank, dass du dich an dieser Umfrage für meine Masterarbeit beteiligst. Ich würde gerne mehr über deine Erfahrungen mit dem Sport von zu Hause aus durch die Anleitung von Online-Videos erfahren. Dies wird auch als Online-Sportkurse bezeichnet. Zu diesem Zweck habe ich eine Umfrage vorbereitet, für deren Beantwortung du etwa 5 Minuten benötigst. Die Umfrage ist völlig anonym. Deine Meinung ist mir sehr wichtig und ich schätze deinen Beitrag sehr.  
Vielen Dank für deine Zeit.

---

Q1 Bist du Deutsche/r?

- Ja
- Nein

*Skip To: End of Survey If Bist du Deutsche/r? = Nein*

---

Q2 Lebst du in Deutschland?

- Ja
- Nein

*Skip To: End of Survey If Lebst du in Deutschland? = Nein*

---

Q3 An welcher Art von Online-Sportkursen nimmst du am häufigsten teil?

- Synchroner Videokurse (finden in Echtzeit statt, z. B. Zoom)
- Asynchrone Videokurse (finden nicht in Echtzeit statt, z. B. YouTube-Videos)
- Weder noch

*Skip To: End of Survey If An welcher Art von Online-Sportkursen nimmst du am häufigsten teil? = Weder noch*

Q4

**Um die verbleibenden Fragen der Umfrage zu beantworten, beziehe dich bitte immer auf die Art der Online-Sportkurse, an denen du am häufigsten teilnimmst (entweder synchron oder asynchron).**

Bitte gib an, welche der folgenden Adjektive die Online-Sportkurse am besten beschreiben.

	1	2	3	4	5	6	7	
Macht mir keinen Spaß	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Macht mir Spaß
Langweilig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Aufregend
Unerfreulich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Erfreulich
Reizt mich nicht	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Spannend
Unangenehm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Angenehm

Q5

	1	2	3	4	5	6	7	
Unwirksam	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Wirkungsvoll
Nicht hilfreich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Hilfreich
Ungeeignet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Geeignet
Unnötig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Notwendig
Unpraktisch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Praktisch



Q6 Bitte gib auf einer Skala von 1-7 an, inwieweit du mit den folgenden Aussagen einverstanden bist.

	1 Stimme überhaupt nicht zu	2	3	4 Weder noch	5	6	7 Stimme voll und ganz zu
Ich fühle mich wie ein Teil einer Online-Sportgruppe.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich kann in dieser Online-Sportgruppe wirklich ich selbst sein.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Leute in meiner Online-Sportgruppe sind freundlich zu mir.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich bin stolz, zu dieser Online-Sportgruppe zu gehören.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Q7 Bitte gib an, welche der folgenden Adjektive das Ambiente deiner Online-Sportkurse (z.B. dein Zimmer, Garten, usw.) am besten beschreiben.

	1	2	3	4	5	6	7	
Unangenehm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Angenehm
Angespannt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Entspannt
Trist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Hell
Unangenehm riechend	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Angenehm riechend

Q8 Bitte gib auf einer Skala von 1-7 an, inwieweit du mit den folgenden Aussagen bezüglich deines Online-Sporttrainers einverstanden bist.

	1 Stimme überhaupt nicht zu	2	3	4 Weder noch	5	6	7 Stimme voll und ganz zu
Der Sporttrainer ist vertrauenswürdig.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Der Sporttrainer ist seriös.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Der Sporttrainer macht ehrliche Aussagen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q9 Bitte beschreibe, wie du dich während der Teilnahme an den Online-Sportkursen fühlst. Manche dieser Paare werden dir vielleicht ein wenig ungewöhnlich erscheinen aber du wirst dich grundsätzlich eher auf die eine oder andere Art fühlen.

	1	2	3	4	5	6	7	
Traurig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Fröhlich
Ärgerlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Erfreut
Unzufrieden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Zufrieden
Verzweifelt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Hoffnungsvoll

Q10

	1	2	3	4	5	6	7	
Entspannt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Angeregt
Gelassen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Aufgeregt
Schläfrig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Hellwach
Unaufgeregt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Aufgeweckt

Q11

	1	2	3	4	5	6	7	
Bekümmert werden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Kontrollierend
Kontrolliert werden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Beherrschend
Unterwürfig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Dominant
Beeinflusst werden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Einflussnehmend

Q12 Bitte gib auf einer Skala von 1-7 an, inwieweit du mit den folgenden Aussagen einverstanden bist.

	1 Stimme überhaupt nicht zu	2	3	4 Weder noch	5	6	7 Stimme voll und ganz zu
Ich mache gerne Online-Sportkurse.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich bevorzuge Online-Sportkurse.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Nutzung von Online-Sportkursen kommt im Allgemeinen dem Teilnehmer zugute.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Online-Sportkurse sind eine gute Sache.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Q13

	1	2	3	4	5	6	7
	Stimme überhaupt nicht zu			Weder noch			Stimme voll und ganz zu
Ich bin mit meinen Online- Sportkursen voll zufrieden.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meine Online- Sportkurse erfüllen immer meine Erwartungen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meine Online- Sportkurse haben mich bisher noch nie enttäuscht.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meine Erfahrungen mit meinen Online- Sportkursen sind ausgezeichnet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Q14

	1 Stimme überhaupt nicht zu	2	3	4 Weder noch	5	6	7 Stimme voll und ganz zu
Ich möchte weiterhin Online-Sportkurse nutzen, anstatt die Nutzung einzustellen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meine Absicht ist es, meine Online-Sportkurse weiterhin zu nutzen und keine alternativen Mittel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wenn ich könnte, würde ich gerne die Nutzung meiner Online-Sportkurse einstellen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

T2 60% abgeschlossen

End of Block 1

---

Start of Block 2

Q15 Was ist dein Geschlecht?

- Männlich
  - Weiblich
- 

Q16 Wie alt bist du?

- Unter 18
  - 18 - 24 Jahre
  - 25 - 34 Jahre
  - 35 - 44 Jahre
  - 45 - 54 Jahre
  - 55 - 64 Jahre
  - 65 - 74
  - 75 - 84
  - 85 Jahre oder älter
-

Q17 Bitte gib die Art deiner Beschäftigung an:

- Vollzeit beschäftigt
  - Teilzeit beschäftigt
  - Arbeitslos und arbeitssuchend
  - Arbeitslos und nicht arbeitssuchend
  - Im Ruhestand
  - Schüler / Student
  - Erwerbsunfähig
- 

Q18 Wie oft nimmst du an Online-Sportkursen teil?

- Täglich
  - 4- bis 6-mal pro Woche
  - 2- bis 3-mal pro Woche
  - Einmal pro Woche
  - Seltener als einmal pro Woche
-

Q19 An welchen Online-Sportkursen nimmst du am häufigsten teil?

- Yoga
- Training / Fitness
- Pilates
- Boxen
- Radfahren
- Dehnen
- Tanzfitness
- Zumba
- Sonstige \_\_\_\_\_

Q20 Wie viel Geld (€) gibst du monatlich aus für...

	Ich bin mir nicht sicher.	0	1-10	11-20	21-30	31-40	> 40
... traditionelle Sportkurse?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... Online-Sportkurse?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q21 Wie viel Erfahrung hast du auf einer Skala von 1-7 mit...

	1 Kaum	2 Wenig	3 Eher wenig	4 Weder viel noch wenig	5 Eher viel	6 Viel	7 Sehr viel
...traditionellen Sportkursen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... Online-Sportkursen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Q22 Ist die Zeit ein Hindernis für dich, an traditionellen / physischen Sportkursen teilzunehmen?

- Ja
  - Nein
  - Manchmal
- 

Q23 Wie bewertest du deine Qualität des Internetzugangs?

	Extrem schlecht	Schlecht	Eher schlecht	Weder gut noch schlecht	Eher gut	Gut	Extrem gut
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

T3 100% vollständig

End of Block 2

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## Annex B.

### Annex B.1 Table of Discriminant Validity – Cross Loadings

Discriminant Validity - Cross Loadings											
	Arousal	Atmospherics	Attitude	Reputation	Dominance	Hedonic Value	Intention t.C.	Pleasure	Satisfaction	Social Value	Utilitarian Value
ARS1	<b>0.695</b>	0.123	0.261	0.130	0.269	0.225	0.206	0.277	0.172	0.229	0.144
ARS2	<b>0.628</b>	0.081	0.201	0.078	0.192	0.219	0.155	0.200	0.129	0.316	0.108
ARS3	<b>0.896</b>	0.478	0.521	0.410	0.385	0.550	0.405	0.583	0.539	0.367	0.476
ARS4	<b>0.884</b>	0.345	0.482	0.384	0.279	0.427	0.374	0.511	0.476	0.333	0.341
AM1	0.359	<b>0.883</b>	0.452	0.345	0.285	0.537	0.322	0.497	0.418	0.282	0.519
AM2	0.358	<b>0.893</b>	0.428	0.361	0.244	0.500	0.290	0.542	0.461	0.295	0.535
AM3	0.415	<b>0.895</b>	0.487	0.478	0.346	0.525	0.341	0.558	0.506	0.290	0.546
AM4	0.177	<b>0.708</b>	0.253	0.311	0.232	0.353	0.119	0.386	0.304	0.217	0.435
ATT1	0.491	0.473	<b>0.875</b>	0.525	0.251	0.626	0.678	0.619	0.760	0.435	0.577
ATT2	0.454	0.301	<b>0.743</b>	0.350	0.332	0.507	0.678	0.450	0.593	0.426	0.404
ATT3	0.404	0.421	<b>0.846</b>	0.547	0.277	0.485	0.519	0.478	0.621	0.436	0.429
ATT4	0.344	0.411	<b>0.816</b>	0.562	0.206	0.437	0.511	0.444	0.583	0.399	0.498
REP1	0.328	0.342	0.478	<b>0.869</b>	0.145	0.399	0.307	0.452	0.557	0.479	0.388
REP2	0.334	0.469	0.574	<b>0.921</b>	0.147	0.450	0.371	0.499	0.591	0.480	0.462
REP3	0.373	0.385	0.570	<b>0.905</b>	0.173	0.464	0.349	0.507	0.583	0.514	0.442
DOM1	0.328	0.231	0.227	0.099	<b>0.783</b>	0.279	0.156	0.305	0.211	0.118	0.249
DOM2	0.334	0.319	0.343	0.177	<b>0.855</b>	0.303	0.265	0.311	0.264	0.174	0.356
DOM3	0.309	0.309	0.236	0.154	<b>0.867</b>	0.325	0.200	0.319	0.230	0.194	0.320
DOM4	0.247	0.207	0.238	0.124	<b>0.760</b>	0.263	0.301	0.244	0.261	0.107	0.275
HV1	0.445	0.524	0.607	0.515	0.354	<b>0.863</b>	0.541	0.692	0.581	0.443	0.703
HV2	0.454	0.451	0.547	0.382	0.271	<b>0.864</b>	0.498	0.646	0.546	0.440	0.597
HV3	0.409	0.517	0.528	0.411	0.336	<b>0.881</b>	0.503	0.640	0.532	0.441	0.679
HV4	0.438	0.406	0.466	0.310	0.284	<b>0.834</b>	0.398	0.575	0.457	0.384	0.582
HV5	0.406	0.530	0.518	0.445	0.275	<b>0.802</b>	0.456	0.651	0.511	0.300	0.707
INT1	0.377	0.405	0.738	0.437	0.257	0.555	<b>0.923</b>	0.511	0.638	0.291	0.521
INT2	0.359	0.180	0.548	0.244	0.313	0.456	<b>0.781</b>	0.359	0.504	0.223	0.361
INT3	0.191	0.142	0.386	0.169	0.061	0.292	<b>0.662</b>	0.228	0.290	0.012	0.254
PLS1	0.542	0.545	0.540	0.495	0.295	0.702	0.422	<b>0.894</b>	0.559	0.426	0.581
PLS2	0.485	0.491	0.474	0.475	0.311	0.656	0.421	<b>0.910</b>	0.551	0.371	0.556
PLS3	0.485	0.555	0.571	0.471	0.366	0.675	0.485	<b>0.888</b>	0.572	0.348	0.626
PLS4	0.456	0.479	0.557	0.458	0.293	0.616	0.372	<b>0.812</b>	0.563	0.442	0.570
SAT1	0.454	0.500	0.811	0.620	0.248	0.561	0.615	0.630	<b>0.860</b>	0.485	0.529
SAT2	0.425	0.456	0.658	0.553	0.269	0.513	0.483	0.531	<b>0.890</b>	0.421	0.460
SAT3	0.315	0.337	0.455	0.411	0.254	0.438	0.362	0.436	<b>0.776</b>	0.389	0.374
SAT4	0.477	0.416	0.685	0.571	0.247	0.582	0.634	0.558	<b>0.884</b>	0.422	0.504
SV1	0.388	0.209	0.394	0.416	0.179	0.445	0.204	0.362	0.389	<b>0.812</b>	0.293
SV2	0.321	0.369	0.468	0.463	0.156	0.390	0.267	0.420	0.452	<b>0.782</b>	0.380
SV3	0.258	0.225	0.336	0.465	0.087	0.298	0.074	0.314	0.330	<b>0.834</b>	0.193
SV4	0.331	0.234	0.479	0.454	0.176	0.412	0.253	0.377	0.472	<b>0.867</b>	0.330
UV1	0.372	0.526	0.538	0.415	0.356	0.671	0.460	0.576	0.485	0.328	<b>0.878</b>
UV2	0.339	0.578	0.522	0.500	0.232	0.715	0.442	0.649	0.512	0.340	<b>0.885</b>
UV3	0.376	0.564	0.514	0.407	0.345	0.685	0.446	0.568	0.515	0.296	<b>0.886</b>
UV4	0.294	0.316	0.364	0.269	0.370	0.509	0.319	0.449	0.366	0.314	<b>0.692</b>
UV5	0.312	0.496	0.490	0.390	0.278	0.622	0.406	0.517	0.425	0.281	<b>0.826</b>

\* the values in bold represent the indicators loading value with the construct it has been assigned to

## Annex B.2 Table of Discriminant Validity – Fornell-Larcker

Discriminant Validity - Fornell-Larcker											
	1	2	3	4	5	6	7	8	9	10	11
<b>Arousal</b>	<b>0.785</b>										
Atmospherics	0.401	<b>0.849</b>									
Attitude	0.518	0.492	<b>0.821</b>								
Coach Reputation	0.385	0.447	0.605	<b>0.898</b>							
Dominance	0.372	0.331	0.323	0.172	<b>0.818</b>						
Hedonic Value	0.507	0.573	0.630	0.489	0.359	<b>0.849</b>					
Intention to Continue	0.403	0.332	0.729	0.383	0.283	0.567	<b>0.796</b>				
Pleasure	0.562	0.591	0.612	0.542	0.361	0.756	0.486	<b>0.877</b>			
Satisfaction	0.498	0.507	0.783	0.642	0.296	0.621	0.631	0.640	<b>0.853</b>		
Social Value	0.397	0.322	0.516	0.547	0.185	0.474	0.252	0.453	0.506	<b>0.824</b>	
Utilitarian Value	0.406	0.602	0.585	0.481	0.371	0.771	0.499	0.666	0.555	0.372	<b>0.836</b>

\*values on the diagonal (bolded) are square root of the AVE while the off-diagonals are correlations.

## Annex B.3 Table of Discriminant Validity – HTMT\_Old (44 indicators)

Discriminant Validity - HTMT											
	Arousal	Atmospherics	Attitude	Reputation	Dominance	H. Value	Intention t.C.	Pleasure	Satisfaction	Social Value	Utilitarian Value
<b>Arousal</b>											
Atmospherics	0.373										
Attitude	0.555	0.557									
Coach Reputation	0.371	0.500	0.701								
Dominance	0.427	0.378	0.384	0.197							
Hedonic Value	0.519	0.636	<b>0.718</b>	0.543	0.412						
Intention to Continue	0.470	0.369	<b>0.908</b>	0.450	0.356	0.681					
Pleasure	0.575	0.661	0.700	0.608	0.416	0.837	0.577				
Satisfaction	0.478	0.564	0.888	0.718	0.349	0.687	0.739	0.711			
Social Value	0.468	0.364	0.606	0.633	0.212	0.536	0.319	0.514	0.576		
Utilitarian Value	0.394	0.675	0.670	0.534	0.435	0.855	0.597	0.739	0.615	0.421	

\*the number in bold exceeds the threshold of 0.90

## Annex B.4 Table of Discriminant Validity – HTMT\_New (43 indicators)

Discriminant Validity - HTMT											
	Arousal	Atmospherics	Attitude	Reputation	Dominance	H. Value	Intention t.C.	Pleasure	Satisfaction	Social Value	Utilitarian Value
<b>Arousal</b>											
Atmospherics	0.3734										
Attitude	0.4904	0.5668									
Coach Reputation	0.3715	0.5004	0.7203								
Dominance	0.4275	0.3783	0.3294	0.1971							
Hedonic Value	0.5192	0.6360	<b>0.6759</b>	0.5432	0.4119						
Intention to Continue	0.4704	0.3694	<b>0.8094</b>	0.4496	0.3565	0.6806					
Pleasure	0.5748	0.6612	0.6768	0.6076	0.4162	0.8373	0.5765				
Satisfaction	0.4782	0.5636	0.8487	0.7183	0.3487	0.6872	0.7393	0.7110			
Social Value	0.4684	0.3645	0.5678	0.6328	0.2117	0.5363	0.3187	0.5136	0.5763		
Utilitarian Value	0.3943	0.6747	0.6591	0.5338	0.4351	0.8546	0.5972	0.7393	0.6155	0.4205	

\*the number in bold does not exceed the threshold of 0.90 anymore



### Annex B.5 Table of Collinearity Statistic (VIF)

Collinearity Statistic (VIF)											
	Arousal	Atmospheric Attitude	Coach Reput: Dominance	Hedonic Val: Intention to (Pleasure	Satisfaction	Social Value	Utilitarian Value				
Arousal	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	1,5364	0,0000	0,0000
Atmospherics	0,0000	0,0000	1,2509	0,0000	1,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
Attitude	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	2,3378	0,0000	0,0000	0,0000	0,0000
Coach Reputation	0,0000	0,0000	1,2509	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
Dominance	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	1,2083	0,0000	0,0000
Hedonic Value	1,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	2,7412	0,0000	0,0000	0,0000
Intention to Continue	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
Pleasure	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	1,5216	0,0000	0,0000
Satisfaction	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	2,3378	0,0000	0,0000	0,0000	0,0000
Social Value	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	1,2901	0,0000	0,0000	0,0000
Utilitarian Value	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	2,4670	0,0000	0,0000	0,0000

### Annex B.6 Table of R Square

R Square		
	R Square	R Square Adjusted
Arousal	0.2569	0.2544
Attitude	0.4504	0.4468
Dominance	0.1098	0.1068
Intention to Continue	0.4780	0.4745
Pleasure	0.5999	0.5959
Satisfaction	0.4393	0.4337

### Annex B.7 Table of f Square

f Square											
	Arousal	Atmospheric Attitude	Coach Reput: Dominance	Hedonic Val: Intention to (Pleasure	Satisfaction	Social Value	Utilitarian Value				
Arousal	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0432	0,0000	0,0000
Atmospherics	0,0000	0,0000	0,1113	0,0000	0,1233	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
Attitude	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,1519	0,0000	0,0000	0,0000	0,0000
Coach Reputation	0,0000	0,0000	0,3637	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
Dominance	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0020	0,0000	0,0000
Hedonic Value	0,3457	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,2700	0,0000	0,0000	0,0000
Intention to Continue	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
Pleasure	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,3158	0,0000	0,0000
Satisfaction	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0766	0,0000	0,0000	0,0000	0,0000
Social Value	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0276	0,0000	0,0000	0,0000
Utilitarian Value	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0412	0,0000	0,0000	0,0000

## Annex B.8 Construct Crossvalidated Redundancy

Construct Crossvalidated Redundancy			
	SSO	SSE	Q <sup>2</sup>
Arousal	12.120.000	10.465.574	0.1365
Attitude	9.090.000	6.029.736	0.3367
Dominance	12.120.000	11.271.263	0.0700
Intention to Continue	9.090.000	6.466.392	0.2886
Pleasure	12.120.000	6.628.336	0.4531
Satisfaction	12.120.000	8.364.405	0.3099

## Annex B.9 Control Variables

Control Variables					
	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
Expenditure -> Intention to Continue	0.1072	0.1072	0.0499	2.1472	0.0318
Gender -> Intention to Continue	0.0221	0.0228	0.0473	0.4682	0.6397
Internet Access -> Intention to Continue	0.0595	0.0598	0.0447	1.3321	0.1829
Time -> Intention to Continue	-0.1033	-0.1009	0.0385	2.6795	0.0074

## Annex B.10 MICOM – Step 2

MICOM - Step 2				
	Original Correlation	Correlation Permutation Mean	5.0%	Permutation p-Values
Arousal	0.979	0.993	0.979	0.050
Atmospherics	0.999	0.997	0.990	0.750
Attitude	1.000	1.000	0.999	0.949
Coach Reputation	0.999	0.999	0.997	0.497
Dominance	0.999	0.996	0.988	0.763
Hedonic Value	1.000	0.999	0.998	0.716
Intention to Continue	0.995	0.994	0.978	0.360
Pleasure	1.000	1.000	0.999	0.951
Satisfaction	1.000	0.999	0.998	0.916
Social Value	0.994	0.991	0.976	0.545
Utilitarian Value	0.999	0.998	0.994	0.748

## Annex B.11 MICOM – Step 3

MICOM - Step 3										
	Mean - Original Difference	Mean - Permutation Mean Difference	2.5%	97.5%	Permutation p-Values	Variance - Original Difference	Variance - Pe2.5%	97.5%	Permutation p-Values	
Arousal	0.48	0.00	-0.31	0.32	0.00	0.08	0.00	-0.35	0.36	0.67
Atmospherics	0.08	0.00	-0.31	0.32	0.64	-0.02	-0.00	-0.57	0.57	0.94
Attitude	0.20	0.00	-0.30	0.31	0.20	-0.13	0.00	-0.51	0.49	0.61
Coach Reputation	0.41	-0.00	-0.32	0.32	0.01	-0.33	-0.00	-0.56	0.55	0.25
Dominance	0.29	-0.00	-0.32	0.32	0.08	0.33	0.00	-0.39	0.40	0.09
Hedonic Value	0.54	0.00	-0.32	0.32	0.00	0.05	-0.00	-0.54	0.52	0.85
Intention to Continue	0.12	0.00	-0.31	0.32	0.47	-0.11	-0.00	-0.36	0.35	0.56
Pleasure	0.37	0.00	-0.31	0.32	0.02	0.06	-0.00	-0.56	0.56	0.83
Satisfaction	0.32	0.00	-0.31	0.31	0.05	-0.16	-0.00	-0.45	0.45	0.50
Social Value	1.22	-0.00	-0.32	0.31	0.05	0.05	0.00	-0.39	0.38	0.81
Utilitarian Value	0.23	-0.00	-0.31	0.33	0.16	-0.16	-0.01	-0.62	0.61	0.63

## Annex B.12 Permutation – Path Coefficients

Permutation - Path Coefficients							
	Path Coefficients Original (S)	Path Coefficients Original (AS)	Path Coefficients Original Difference (S - AS)	Path Coefficients Permutation Mean Difference (S - AS)	2.5%	97.5%	Permutation p-Values
Arousal -> Satisfaction	0.22	0.20	0.02	-0.01	-0.28	0.27	0.91
Atmospherics -> Attitude	0.32	0.30	0.02	-0.00	-0.31	0.30	0.88
Atmospherics -> Dominance	0.36	0.38	-0.02	0.00	-0.23	0.22	0.89
Attitude -> Intention to Continue	0.36	0.62	-0.26	-0.00	-0.38	0.38	0.20
Coach Reputation -> Attitude	0.45	0.41	0.04	0.00	-0.29	0.29	0.78
Dominance -> Satisfaction	-0.11	0.11	-0.22	0.00	-0.22	0.23	0.06
Hedonic Value -> Arousal	0.68	0.40	0.28	0.00	-0.21	0.21	0.01
Hedonic Value -> Pleasure	0.65	0.46	0.19	-0.00	-0.40	0.39	0.36
Pleasure -> Satisfaction	0.62	0.45	0.16	0.00	-0.28	0.28	0.26
Satisfaction -> Intention to Continue	0.42	0.15	0.27	0.00	-0.47	0.47	0.27
Social Value -> Pleasure	0.01	0.18	-0.17	0.00	-0.28	0.28	0.24
Utilitarian Value -> Pleasure	0.21	0.14	0.07	0.00	-0.45	0.44	0.75