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MICE IN VIRTUAL REALITY ENVIRONMENTS WITH A FOCUS ON SUSTAINABILITY IDENTIFIED THROUGH DISTINCT STAKEHOLDER PERSPECTIVES

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ABSTRACT

At the time when new technology is emerging and COVID-19 is restricting in-person meetings, the traditional definition of presence is challenged. This research is set to investigate in-depth how virtual reality is examined within the field of business tourism with a focus on its sustainable factors. The research paper has been conducted through different stages, starting with the identification of a main research question, which implies the understanding of the use of virtual reality by distinct stakeholders all within the context of business tourism. This main question has then been divided in two distinct sub-questions, taking into account, firstly, the perceptions of both the business professionals and providers within the industry in regards to the use of virtual reality in meetings or conventions and secondly, the impact of COVID-19 towards the hospitality and events sector and what are the consequences that should be expected in the next future. In order to better analyse these inquiries, the thesis has been divided into different chapters starting with the literature review. This chapter covers all the necessary themes from the initial concept of business tourism to the connection with, respectively, the new technology and sustainability. Furthermore, an extensive overview of both the COVID-19 impact and the virtual reality, was able to provide other elements towards a fully understanding of the VR and its connection with the theme of sustainability. For the methodology section, fundamental was the identification of the qualitative model that together with the use of the semi-structured interviews, allowing us to gather specific data in regards to the opinions and overview of both the business professionals (n=16) and people working in the VR field (n=4), gaining an understanding of their general knowledge of virtual meetings, as well as their insight towards the tourism industry, the data privacy, sustainability and the connection of the virtual reality with the current pandemic. Through these responses, it was possible to understand how the necessity of remote collaboration has been influencing the choice to move to online and virtual tools instead of going back to traditional in-person meetings. Nonetheless, while some respondents were intrigued in the possibility of fully integrating remote meetings into their current routine as a permanent solution, other respondents were rather favourable to returning to the traditional meetings in order to achieve presence. According to our findings, it can be concluded firstly that the use of VR is more appropriate when a trustful business relationship has been formed prior to the meeting. Secondly, it is not necessary to choose between the existing solutions to go all-embracing, but rather find a golden mean between remote collaboration and in-person meetings. If VR achieved a greater role in substituting in-person meetings, it would contribute to social, economic and environmental sustainability in business tourism.

Key words: *Virtual Reality; Business Tourism; Sustainability; COVID-19; MICE; Remote Collaboration; Presence*

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AR	Augmented Reality[1]
CO^2	Carbon Dioxide
COVID-19	Coronavirus disease 2019 (caused by SARS-CoV-2)
EU	European Union
IoT	Internet of Things
MICE	Meetings, incentives, conventions/conferences, exhibitions/events
MR	Mixed Reality[2]
SMEs	Small and medium-sized enterprises
US	United States
VEs	Virtual Environments
VR	Virtual Reality[3]
XR	Extended Reality[4]

[1] "Alternate reality technology that provides an enhanced version of the real-world by overlaying our existing reality with an additional layer of digital information, which can be viewed through a (connected) technological device—such as smartphones or Augmented Reality Smart Glasses (ARSGs)." (de Regt & Barnes, 2019, p. 19)

[2] "Alternate reality technology that facilitates the merger of, and real-time interaction with and between, digitally rendered and real-world data and objects through connected technological devices (e.g., mixed reality headset)." (de Regt & Barnes, 2019, p. 19)

[3] "Alternate reality technology that is characterized by generating real-time, immersive and interactive multi-sensory experiences situated in, and artificially induced by, a responsive three-dimensional computer-generated virtual environment—usually paired with advanced input and output devices." (de Regt & Barnes, 2019, p. 19)

[4] "XR is an umbrella term that encompasses both augmented reality and virtual reality." (Chuah, 2018, p. 205)

1. INTRODUCTION

"*I've talked to some people that, for example, they've gone to Saudi Arabia on business and completely changed their mindset, like, not that Saudi Arabia is this glowing angel or anything, or been doing things the right way, but he basically said like, you have to go there and like experience their business and hospitality, culture, and you start to think, "oh, there's different sides to everything". It's not all black and white. It helps people maybe become better global citizens. Business, obviously, is one of the things that enables people to travel like that.*" Said participant 13 during one of the virtual reality experiment interviews (Appendix 13, ll. 281-7). Getting a comprehension of different cultures are merely some of the many benefits of business travel, which can be achieved by coming together in the shared space and co-presence.

The emergence of new technological solutions for remote collaboration, as well as the currently ongoing COVID-19 pandemic, have changed the perception of conducting meetings. Not only has business travel been cut by the pandemic but other factors, such as global financial crises get businesses considering the costs of doing business and looking for more budget-friendly options without losing efficiency (Jago & Deery, 2010). During the coronavirus outbreak, executing meetings for business and work purposes (MICE) in virtual ways became extremely popular (Houser, 2020). Indeed, the CEO of Spatial providing collaboration VR explains that "*in light of COVID, we've actually had an intense amount of demand — about a 1,000% increase,*" (as cited in Houser, 2020).

Such circumstances are challenging the idea of co-presence, which have inspired the innovation of better solutions to meet in a shared space. An example of such is virtual reality (VR), which enables meeting participants to join each other in an immersive virtual environment. Such technology is described as creating the feeling of an in-person meeting when compared to other existing alternatives: "*Zoom is not a good replacement for being in the office with other people, whereas something like VR gives you that level of presence and personification.*" (Houser, 2020) In fact, remote collaboration in virtual reality is expected to increase in the future, and therefore, this research will scrutinise the possibilities of VR in the context of business tourism. Understandably, business tourism is highly linked to sustainability through negative, as well as positive contributions in all its aspects; social, economic and environmental.

In order to better explore the topic, we partnered up with MeetinVR, which is a Copenhagen-based

start-up providing an application for organising work and business communications in virtual reality, and who we also worked with previously during the tourism studies. The idea of meeting colleagues and business partners in the virtual environment is indeed trending at the moment, and MeetinVR is not the only company providing a platform for such. Among others, Engage and Spatial are successful examples. Anyway, this collaboration provided us with a possibility to use their application for research purposes. We also established a cross-faculty collaboration in order to access the required equipment in the Multisensory Experience Lab (ME-Lab) at Aalborg University Copenhagen. In order to gain reflections on the topic from different stakeholder perspectives, we invited business professionals — experienced in travelling for MICE — to try a meeting in VR at ME-Lab. Another part of our data collection was focused on the insights from the VR industry perspective; in addition to interviewing the MeetinVR application providers, we interviewed people working in the industry familiar with the concept of MICE in VR.

1.1 PROBLEM STATEMENT

Our aim for this thesis project is the exploration of the connection between the use of virtual reality and business meetings. More precisely, what the research aims at better comprehending, are the business professionals' views on the VR usage in work and business communications. Combined with insights from people working within the field of VR, this research sets out to explore virtual reality in the context of business tourism with a focus on sustainability. Thus, the initial research question developed is:

"*How do different stakeholders identify the use of VR in the context of business tourism?*"

In order to gain an extensive understanding and reach conclusions on this exact research question, it has been distinguished into the following sub-questions:

"*What are the business professionals' reflections and industry provider insights concerning MICE in virtual reality?*"

and

"*How has the COVID-19 pandemic impacted MICE travel, and what could be expected regarding the future of work and business meetings?*"

1.2 SIGNIFICANCE OF THE RESEARCH

Although studies focused on the linkage of VR and tourism have increased in the recent past, there has been hitherto limited research on the connection between VR and business tourism. Furthermore, the link of VR and sustainability is an undeveloped area of research due to the recent state of the technology. On top of that, the future of work and business meetings due to COVID-19 is obscure at the time of writing, so possible scenarios will be identified based on the business professionals' and VR industry workers' considerations. Thus, this study represents a new opening in the area of tourism research bringing together the fields of business tourism, VR and sustainability.

2. LITERATURE REVIEW

The following chapters will present the chosen literature relevant and supportive to the data been collected and the analysis of the data. The aim is to present "*logical frameworks which can serve as a guide to the understanding of actual events*" (Gandolfo, 2014, p. 4). Furthermore, taking the narrative approach, this part of the research strives to present a background of the key concepts the research is involved with, as well as identify gaps in knowledge (Danson & Arshad, 2014). The following chapters will present the key dimensions present in this research. The following chapters aim at helping the reader to better comprehend the relevant concepts behind the research question and sub-questions. Furthermore, these theoretical insights will help us to analyse the primary data collected by providing supportive, as well as contrasting arguments, and to reach conclusions on the chosen case.

The first part will give an overview of business tourism, discussing the phenomenon itself, the distinction between business and leisure tourism, business tourism and technological development, as well as business tourism in relation to sustainability. Next, the current impact of the global coronavirus outbreak on the tourism industry will be presented in order to provide a base for discussing COVID-19 in relation to business tourism and the future of work. Lastly, the development of the virtual reality technology, as well as its use in MICE purposes, will be introduced. These concepts are seen as relevant in order to provide a theoretical background for the analysis of VR in the context of business tourism with a focus on sustainability.

2.1 BUSINESS TOURISM

The tourism industry is frequently distinguished into two categories: business and leisure tourism (Gracan & Barkidija, 2015). Due to this research specifically reflecting the first-mentioned, a further introduction to the concept of business tourism is necessary. Davidson (1994), a business tourism researcher, defines business tourism as follows: "*Business tourism is concerned with people travelling for purposes which are related to their work. As such it represents one of the oldest forms of tourism, man having travelled for this purpose of trade since very early times.*" (as cited in Swarbrooke & Horner, 2001, p. 3). The extensive outlines of business tourism, according to Gracan, Sander and Rudancic-Lugaric (2010), include "*business meetings, conferences, congresses, exhibitions, team building, [and] incentive travel*" (p. 337). Regardless the size of the gatherings, the

purpose of such events of getting together is "*to share [...] ideas, information and achievements, as well as to refine [...] already acquired knowledge.*" (ibid., p. 338) Gracan and Barkidija (2015) point out that two forms of business tourism exist and that it is significant to distinguish business tourism into these two categories: individual business travel and congress tourism (see Figure 1). The first alternative is concerned with an individual person's travel due to business, and the latter deals with the 'mass form' of MICE such as conferences (ibid., p. 275). The primary focus of this research will be on individual business trips, however, other forms of MICE, such as conferences, travel for training or educational purposes, and corporate meetings may be mentioned whenever relevant.

Figure 1. Forms of business tourism. Reprinted from "Green Business for Green Meetings," by D. Gracan & M. Barkidija, 2015, *Marketing and Business Development*, 1(1), p. 275.

As a phenomenon, business tourism is nothing new; work has been one of the principal purposes for travelling for centuries, for instance, consider the Silk Route (Swarbrooke & Horner, 2001). Not much attention has been drawn on the background and development of business tourism. However, Swarbrooke and Horner (2001) argue that it is of importance to know the origins of business travel in order to understand the present state of it.

Trading agricultural goods between villages, hence growing markets, has been considered the very early stages of business travel (ibid.). Swarbrooke and Horner (2001) list three types "*specialist business travel*" that have existed for centuries and are still accurate today: priests travelling for their work (e.g. pilgrimages), soldiers travelling due to battles or relocating into new territory, and workers "*migrating temporarily in connection with their trade*" (e.g. seasonality of the work) (p. 16). Industrialisation increased business tourism in Europe significantly from 1750 until the 1900s: the

roads and railways made travelling more convenient and easy, production increased, which made it possible to sell and transport products abroad, and the colonisation of the Asian, African, as well as the Middle Eastern countries, resulted in transporting materials and "*colonial administrators*" (ibid., p. 16). During the early 20th century, conferences started to take place in the US, which the hosting cities soon realised to bring large economic contributions, which, in turn, resulted in expanding such activities around the world (ibid.). Furthermore, the invention of cars resulted in the increasing popularity of domestic business travel.

Starting in the 1950s, the business tourism industry exploded due to several factors. Gracan and Barkidija (2015) explain that such factors "*include increased technological advancements in air travel, increased propensity to travel due to increased education, economic growth, rise in disposable income, and expansion of multinational companies, rapid development and growth in professional associations.*" (p. 274) Other than that, reasons for the growth of business tourism are linked to the destination: positive factors such as advanced technology, infrastructure, as well as the image of the destination attract MICE-related tourism (ibid.). In more detail, particular factors related to the dramatic increase in different types of business tourism are presented in Table 1.

Table 1

Reasons behind the growth of business tourism categorised by the types of business.

Type of business	*Factor*
Incentive travel	• Introduction of human resource management theories and practices based on stimulating performance at work by offering non-monetary rewards and tangible recognition of the contribution of key individuals • The rise of specialist incentive travel agencies which offer tailor-made incentive travel packages
Training courses	• The growth of new technologies which require staff to be trained • The emphasis on quality and service which requires training
Product launches	• The growing globalization of markets and the need to market products to more than one country • The growth of competition and the need for high-profile launches to raise awareness of new products very quickly
Education-related travel	• The growth of transnational co-operation in education • The increase in student exchanges • The growth of field visits in education at all levels

Reprinted from "Business Travel and Tourism," by J. Swarbrooke & S. Horner, 2001, p. 19.

International business tourism has had the chance to grow so much during the last decades due to technological development, as well as the affordability of travel around the world, e.g. by plane

(Lawson, 1982). Today, some of the most common reasons for business travel are related to company subsidiary visits, communication with customers, as well as suppliers, and taking part in conferences or meetings (Gracan & Barkidija, 2015). Business travel is also seen as a method of motivating employees (Chiang, King, & Ngyuen, 2012; Swarbrooke & Horner, 2001). To better understand the importance of business tourism in the global perspective, according to UNWTO (2019), in 2018, 13% of international tourism was based on 'business and professional' reasons (p. 7). Nevertheless, business and leisure tourism often overlap, as being further discussed in the next chapter, so the definition, as well as statistics regarding business tourism, may be vague. Indeed, other measures show that business tourism may account up to 30 percent of all tourism worldwide (Sharma, 2004).

2.1.1 THE ROLE OF LEISURE IN BUSINESS TOURISM

Leisure tourism has become a vital part of business tourism; hence, the literature will present the role of leisure activities in business tourism. Moreover, the leisure aspect was included in the data collection process as a part of the VR experiment interview questions examining whether VR could substitute the business tourism experience as a whole.

As mentioned previously, a distinction between business tourism and leisure tourism exists, however, business and leisure tourism can be closely linked to each other. For instance, motivations behind business travel may be "*primarily to attend the meeting, but this may be part of a wider itinerary of visits, including extended tours, or leisure interests.*" (Lawson, 1982, p. 298) Therefore, primary activities are the ones related to work and the purpose of the trip, and secondary activities are to do with leisure, e.g. sightseeing, shopping and dining out (Litteljohn, 2001). Although being called 'secondary' activities, Litteljohn (2001) argues that leisure activities during business trips are often considered essential by the travellers (p. 118). Swarbrooke and Horner (2001) list four points, where the overlap between business and leisure tourism frequently takes place:

> *1. The business traveller usually becomes a leisure traveller one the working day is over.*
> *2. Conferences often include a programme of leisure activities in between conference sessions for delegates.*
> *3. Incentive travel, as we saw earlier, involves offering leisure travel as a reward for good performance at work.*

> *4. Many business travellers are accompanied by their partners and/or children. These accompanying persons are to all intents and purposes leisure travellers for all or most of the duration of their trip.* (p. 10)

Furthermore, incentive travel, as one of the typologies of MICE used as a way to reward for good performance or motivate employees, is rather based on leisure tourism than business activities, hence building a connection between these two sorts of tourism (ibid.).

On top of that, in recent years, the terms 'bleisure,' 'bizcation' and 'workcation' have become popular, mixing the distinction of the leisure and business perspective even more. The terms stand for combining business and leisure travel together, e.g. by extending the business trip for a few more days for vacation purposes ("The Rise of the Bleisure Traveller," n.d.). Bleisure travel has become popular due to the fact that it can be more convenient, affordable, and make the business trip more pleasant, as the traveller can i.e. experience the place they visit, as well as choose the days they fly and the accommodation (ibid.). Numerous studies based on business tourism point out that most business travellers have added some additional time to a business trip for leisure purposes (Expedia Group Media Solutions, 2018; Reid, 2019). Furthermore, many believe that bleisure travel will increase in the future (Reid, 2019). All in all, it can be argued that today's business travellers consider leisure activities as important, which is intriguing taken into account the increasing use of technology in business communications.

2.1.2 BUSINESS COMMUNICATIONS IN THE ERA OF DEVELOPING TECHNOLOGY

Swarbrooke and Horner (2001), suggest in their book, written nearly 20 years ago, that the developing information and communication technologies, including "*video- and computer conferencing as well as virtual reality*" place a threat of substituting "*the overall demand for general business travel*" (p. 20). Nevertheless, they also mention the social aspect and the possible lack of personal contact when comparing the developing technological alternatives to regular business travel (ibid.) Denstadli and Gripsrud (2010) introduce four models of possible relationships between telecommunications and travel:

> *1. The substitution hypothesis suggests that the use of telecommunications eliminate trips that would have been taken if the technology was not present.*

2. The complementarity hypothesis implies that telecommunications have a generating effect on travel causing additional trips that would not have occurred in the absence of the technology.

3. The modification hypothesis proposes that telecommunications may change the time, mode, destination, etc of a trip that otherwise would have occurred.

4. The neutrality hypothesis suggests that there is no impact of one on the other, meaning that travel and telecommunications in effect operate as independent communication systems. (p. 225)

While leisure travel may be concerned with all four suggestions, business travel studies frequently focus on the first two alternatives (ibid.), which also seem the most relevant to this research. The substitution theory is relevant due to many factors, such as saving time, costs and environment by using telecommunications to substitute travel for meetings (Denstadli & Gripsrud, 2010; Douglas, Lubbe & Fabris-Rotelli, 2013). According to Toffler (1980), substituting travel with telecommunications has certain practical spin-offs, such as reduction in stress and non-permanent short-term relationships, as well as "*greater societal stability*" (as cited in Denstadli & Gripsrud, 2010, p. 225). Figure 2 presents the most prominent reasons for substituting business tourism with video conferencing, based on a study conducted in Norway.

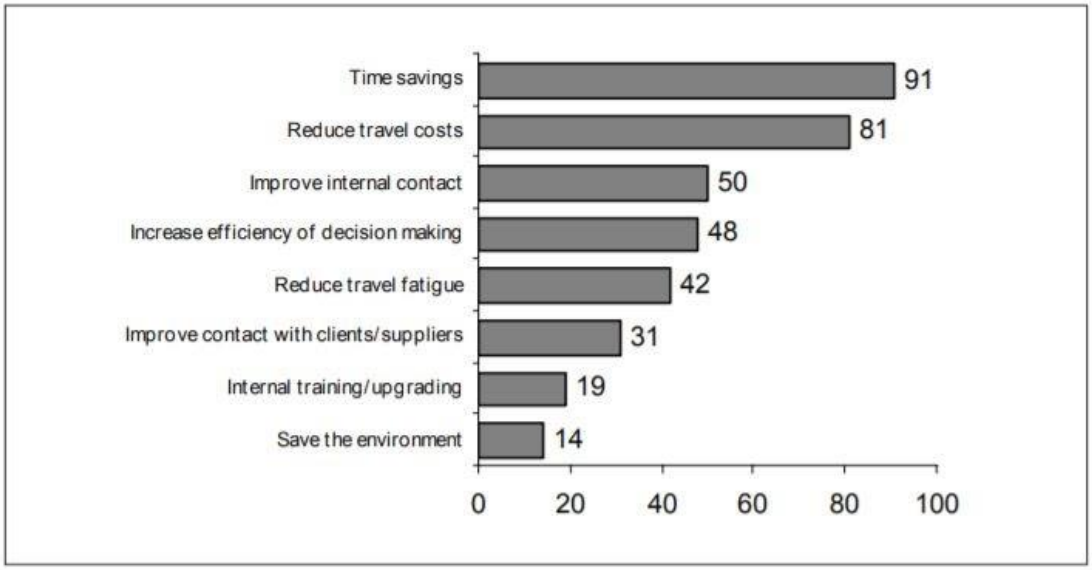

Figure 2. Reasons for adopting video conferencing. Reprinted from "Face-to-Face by Travel or Picture," by J. M. Denstadli & M. Gripsrud, 2010, p. 229.

Denstadli and Gripsrud (2010) also mention that the substitution theory "*assumes that the total amount of interactions (including both travel and communication) is not affected by specific assignments to either mode*" (pp. 225-6). Furthermore, with easier and more affordable access, the substitution hypothesis suggests that there will be more competitiveness among businesses (ibid.). The complementarity hypothesis, instead, argues that telecommunications would increase the need for travel. Denstadli and Gripsrud (2010) list business tourism-related caused for increasing need for travel:

- *Telecommunication increasing labour efficiency which frees time for additional (and more desired) business travel. For example, having a business meeting over video can free time to attend a conference at a nice location.*
- *Telecommunications allowing for more geographical dispersion of organisations, increasing travel between the dispersed offices/plants.*
- *The globalisation of markets which implies more international business travel and communications.* (p. 226)

Since the beginning of business tourism, face-to-face meetings have been considered "*the most effective ways of doing business, seeking out new markets, exchanging ideas and communicating with colleagues and customers alike*" (Denstadli & Gripsrud, 2010, p. 217). Many reasons behind this can be identified; for instance, co-presence allows one to understand the co-attendee better through facial expressions, establish trust through accessing each other's eyes, and show commitment by taking time and spending money on travelling to the meeting (ibid.). Taking into account the long history of business travel, it is understandable that humans are accustomed to a certain way of business communications and find a shift to remote communication less productive. Although video conferencing has taken over many events of work and business communications, especially recently during the times of the COVID-19 pandemic, many studies still suggest that in-person encounters are needed in order to maintain personal relationships in business (Denstadli & Gripsrud, 2010; Douglas et al., 2013). In more detail, Table 2 represents types of meetings that are appropriate and possible to substitute with remote communication and factors regarding the company's profile impacting the possibility to substitute travel.

Table 2

Types of business communications and organisational factors impacting the choice between technology and in-person business meetings.

Types of business interaction	**Suited to the use of travel alternatives** Internal meetings Urgent meetings Status meetings Client interaction Attending a conference Collecting information before approaching a client Second-meeting tool **Not suited to travel alternatives** Negotiations Disciplinary and performance hearings Sharing confidential information
Organisational profile	Size Location of offices Local/international Organisational culture Type of industry

Reprinted from "Travel or technology? Business factors influencing management decisions," by A. Douglas, B. Lubbe, & I. Fabris-Rotelli, 2013, *South African Journal of Economic and Management Sciences*, 16(3), p. 285.

In addition to the different types of meetings and organisational profiles, it is important to keep in mind that while remote communication might work for some sectors, others find it extremely difficult to replace MICE. The industries especially suitable to substitute travel with VR meetings will be introduced in chapter 2.3.1. In the adoption of new technologies in business communications, Swarbrooke and Horner (2001) identify the fast development of technology as a potential problem: "*The pace of technological change and the nature of new development may render much current investment obsolete, very quickly. This could be very expensive for organisations that invest too heavily in technologies that will soon be outdated.*" (p. 228) Meetings in VR being relatively new concepts can turn out problematic in convincing companies to invest in such remote collaboration due to concerns of finding future technology more efficiently.

2.1.3 BUSINESS TOURISM AND CONSIDERATIONS ON SUSTAINABILITY

It is no surprise that business tourism brings significant benefits for destinations. Nevertheless, the increasing travel has its drawbacks as well; for instance, the environmental impacts are negative. The following parts of this chapter will give an understanding of the contributions of business tourism to sustainability. Mair and Jago (2010) point out that it is particularly challenging to produce definitive figures on the contribution of business tourism to sustainability due to the lack of global data on the subject, as well as differing figures and definitions depending on the part of the world. Nevertheless,

the following parts discussing economic, environmental and social sustainability will take into account the few existing studies on business tourism and sustainability.

ECONOMIC

Although business tourism covers merely between 13% and 30% of the overall travel (Sharma, 2004; UNWTO, 2019), business tourism, or MICE-motivated tourism, is considered a '*cutting-edge*' and crucial part of the overall tourism industry, as it generates "*high income per single destination*" (Gracan et al., 2010, p. 337). The importance of MICE events in national economies is due to the fact that MICE travellers generate high income by consumption (Gracan et al., 2010; Mair & Jago, 2010). It has been estimated that, in average, a business traveller spends approximately two to four times more than a leisure traveller (Swarbrooke & Horner, 2001). Indeed, business tourism is hitherto one of the industries generating the largest profit in the tourism sector (Gracan & Barkidija, 2015). Figure 3 depicts global business travel spending since 2000 in order to gain a better overview of the growth and significance of the industry. Furthermore, estimates (before the outbreak of COVID-19) predicted that business tourism and the economic revenue from it will only keep increasing in the coming years (Lock, 2020). However, business tourism is mostly concentrated on urban destinations, where it can be the major type of tourism (Swarbrooke & Horner, 2001), and therefore, the revenue from business tourism is not distributed worldwide. Hence, in some parts of the world, business tourism is considered more important that the development of leisure tourism due to these certain destinations having "*no interest in developing leisure tourism [...] for economic or political reasons*" (Lawson, 1982, p. 298).

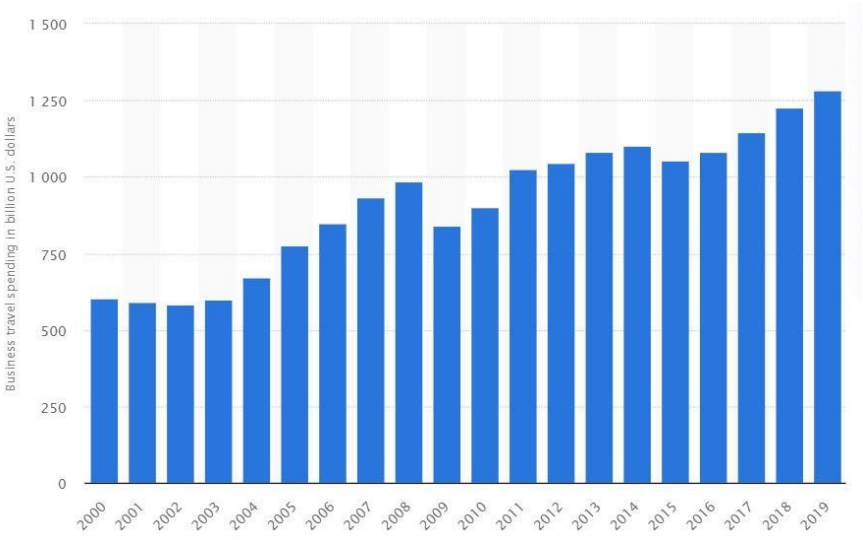

Figure 3. Business travel spending in billion US dollars. Reprinted from "Business tourism spending worldwide 2000-2019," by S. Lock, 2020, *Statista*.

Given the major economic contribution of business tourism, it is not strange that business travellers are the primary target of many destinations, as well as businesses, such as airlines and hotel chains (Swarbrooke & Horner, 2001). According to Litteljohn (2001), estimates of hotel turnover created by business tourism vary between 45 and 62 per cent, being more focused on the luxury sector rather than economy sector. Same applies to airlines: business travellers often travel in business class, which is more valuable for the airline. Furthermore, business tourism creates employment which other types of tourism would not be able to do, for instance, business tourism frequently utilises "*unique physical facilities such as convention and exhibition centres*" (Swarbrooke & Horner, 2001, p. xiv). On top of that, the services of e.g. local photographers, printers and florists are often needed for business tourism settings (ibid.). Destinations are particularly interested in hosting business travellers, as they can provide the locals with year-round employment, especially during off-peak seasons, such as summer holidays (Gracan et al., 2010; Swarbrooke & Horner, 2001).

Through business events, as well as tourism activities between work-related tasks, business travel is profitable and a positive factor to the economy of a country. The requirements and expectations of business travellers differ from leisure travellers in terms of value for money, comfortability, as well as accessibility, and therefore, business travellers are willing to spend more to meet the requirements (Swarbrooke & Horner, 2001). That is why they "*indirectly, pay higher taxes which can then be used to fund environmental or social programs, thereby benefitting the host.*" (Gracan & Barkidija, 2015, p. 274). Hence, it can be argued that business tourism brings more of a positive contribution to sustainability rather than negative. However, the environmental and social impacts are to be discussed in the next parts of this chapter.

ENVIRONMENTAL

When considering the environmental contribution of business travel, it is mostly negative. What may first come to mind, is all the CO^2 from the required mobility in order to reach the business events. According to Denstadli ang Gripsrud (2010), air passengers travelling for business purposes are more likely to increase air travel in comparison to leisure passengers. An example from Norway shows that business-related trips accounted for 56 per cent of domestic air travel and 41 per cent of international in 2007 (ibid.). Furthermore, it is common for business travellers to rent a car in the host destination for more convenient accessibility from a destination to another (Swarbrooke & Horner, 2001). Thus, the implementation of technological solutions to substitute business travel is extremely appealing in relation to environmental sustainability.

The environmental contribution of business travel, however, is concerned with much more than merely the transportation. As mentioned previously, business travellers frequently have higher expectations and needs, and in order to meet these requirements and create higher revenue, the host aims at creating an '*unforgettable event,*' which often turns out to be a burden for the environment in terms of "*excessive energy consumption and waste production before, during and after the events*" (Gracan, Sander & Rudancic-Lugaric, 2010, p. 338). Especially larger business events tend to negatively contribute to environmental sustainability due to the use of disposable materials, e.g. for meals, which later on becomes waste, as well as spending enormous amounts of energy to lit up or heat the event space (ibid.).

In recent decades, sustainability in tourism has become more important on an individual, as well as organisational level. Today, it is "*being embraced as best practice by many countries around the world.*" (Gracan & Barkidija, 2015, p. 274) As business tourism is a significant contributor in the overall tourism industry, the implementation of more sustainable practices is also taking place in the business tourism sector. Furthermore, according to Gracan and Barkidija (2015), business travellers "*are growing increasingly interest in environmental issues and are beginning to incorporate sustainability into their consumer purchase decisions*." (ibid., p. 274) To meet this interest, the MICE hosts have implemented various green practices into their functioning, i.e. greener energy (e.g. produced by solar power), greener options for transportation, and incorporating sustainable products (e.g. wooden cutlery instead of plastic) (Gracan & Barkidija, 2015). On top of that, the term "*green meetings*" has been introduced in order to allow more environmentally friendly meetings (Gracan, Sander & Rudancic-Lugaric, 2010, p. 337). These types of meetings "*cover all aspects of the strategy planning involved in the process of organising the congress or event from the selection of environmentally-oriented sites, serving the local food, use of recycled and recyclable products and renewable energy sources in order to minimise the negative impact of holding business meetings in the host city environment.*" (ibid., p. 337)

Although business tourism may bring travellers to tourist destinations off-season, Discala (2019) argues that business travellers contribute to overtourism problems as much as leisure travellers. Overtourism occurs when a destination is overcrowded by too many visitors and exceeding "tourism's carrying capacity" (UNWTO, 2018). Overcrowding of a destination contributes to sustainability negatively, as it produces unwanted environmental changes, can be destructive to cultural heritage and infrastructural constructions, as well as negatively impact the quality of life of the local

community and the travellers' experience (ibid.). Due to the divisive opinions on how much is "*too many*" visitors, overtourism is a highly subjective term (Discala, 2019). Factors, i.e. queuing time, increased fees, as well as economic revenue deriving from tourism can influence the perception of "*too many*". On the contrary, destinations can also suffer from undertourism, which most often is due to seasonal causes. In this way, business tourism can be beneficial for undertouristic areas, as this type of tourism occurs regardless the time of the year. However, business travellers rarely get to choose their destination, as it comes to primary event they are attending. Business travellers can, nevertheless, impact on these sustainability issues by deciding where to spend their time off-duty.

SOCIAL

In comparison to environmental and economic contributions, the social aspect may be less outstanding, however, business tourism still has an impact in social sustainability. As already mentioned in the discussion of overtourism, overcrowding of a destination can negatively impact the everyday life of the local community, for instance, by increasing prices, making accessibility harder e.g. due to traffic, and harm the infrastructure of the destination (UNWTO, 2018). In addition to this, in overcrowded destinations, and especially in destinations where the (business) traveller is wealthier in comparison to the local population, crime can increase (Swarbrooke & Horner, 2001).

As positive feature of business tourism, it can generate employment in the host destination, especially when considering activities that other types of tourism are not concerned with (Swarbrooke & Horner, 2001). Furthermore, due to the requirements of business travellers, this type of tourism can enhance the infrastructure of a destination (ibid.), e.g. airports, which may be attractive to the locals, as well as leisure travellers. In addition to these positive features, business tourism can sustain partnerships across the globe, as well as encourage more international collaboration (ibid.).

2.2 THE IMPACT OF THE CORONAVIRUS OUTBREAK ON TOURISM INDUSTRY

The impact of COVID-19 outbreak on the tourism industry has hitherto been devastating. According to UNWTO (2020b), "*the near-complete lockdown imposed in response to the pandemic led to a 98 per cent fall in international tourist numbers in May when compared to 2019.*" In other words, there is a shortage of 300 million international tourists and a loss of US$320 billion in economic revenue from tourism (ibid.). In comparison to the Global Economic Crisis of 2009, the impact of COVID-19 has, at the time of writing, generated three times greater loss (ibid.). In many regions around the

world, not only international border crossings were restricted but the locals were told to stay in their city of residence. In other words, domestic tourism was — and, in certain areas is still — limited. All this translates to business tourism as well, as it has been restricted in the same way as any other type of tourism.

Given the current situation towards the coronavirus issue that has affected the whole planet, several institutions develop various possible solutions or patterns to follow, in order to get the tourism industry back on track. Among these, the most prominent tourism institution, UNWTO, has developed a strategy in response to the crisis in the tourism industry caused by COVID-19. In order to restore the industry in the most resilient way possible, UNWTO started a project called "*The One Planet Vision*," which "*calls for responsible recovery for the tourism sector, which is founded on sustainability, to build back better. [...] The Vision will support the development and implementation of recovery plans, which contribute to the Sustainable Development Goals (SDGs) and to the Paris Agreement.*" (UNTWO, 2020a). Thus, at a time when governments and the private sector are embarking on the path to recovery, the time is right to keep advancing towards a more economically, social, and environmentally sustainable tourism model. The connection with positively contributing to over- and undertourism issues, in this case, is key to proceed towards a sustainable development of the tourism industry (UNWTO, 2020a). Business tourism, having such a significant role in the overall tourism industry, proceeds to become more sustainable in the post-COVID-19 world.

Business tourism was the first type of tourism to start the recovery process, as some countries, such as Denmark, allowed only essential travel, which business tourism belongs to, in the early stages of re-opening after COVID-19. All travel, however, was recommended to be avoided and execution of business meetings was suggested to be e.g. via video conferencing. The extreme change from face-to-face into remote also meant that many companies became interested in experimenting the new ways to allow the maximum level of productivity under such circumstances (Nichols, 2020). This led to dramatic increase in the implementation of — the previously unpopular alternative — VR in work and business communications. At the time of writing, the pandemic is still ongoing, and the above-mentioned recommendations are still relevant in many countries across the world. Although business tourism was the first to begin the recovery process, it has been anticipated that the recovery will take the longest for business tourism, e.g. due to the replacement of meetings with technology (Curley, Garber, Krishnan & Tellez, 2020). However, Curley et al. (2020) argue that business tourism will return but it will happen in phases (see Figure 4). It is yet to see, whether technological solutions are appealing enough to substitute travel for meetings in some sectors.

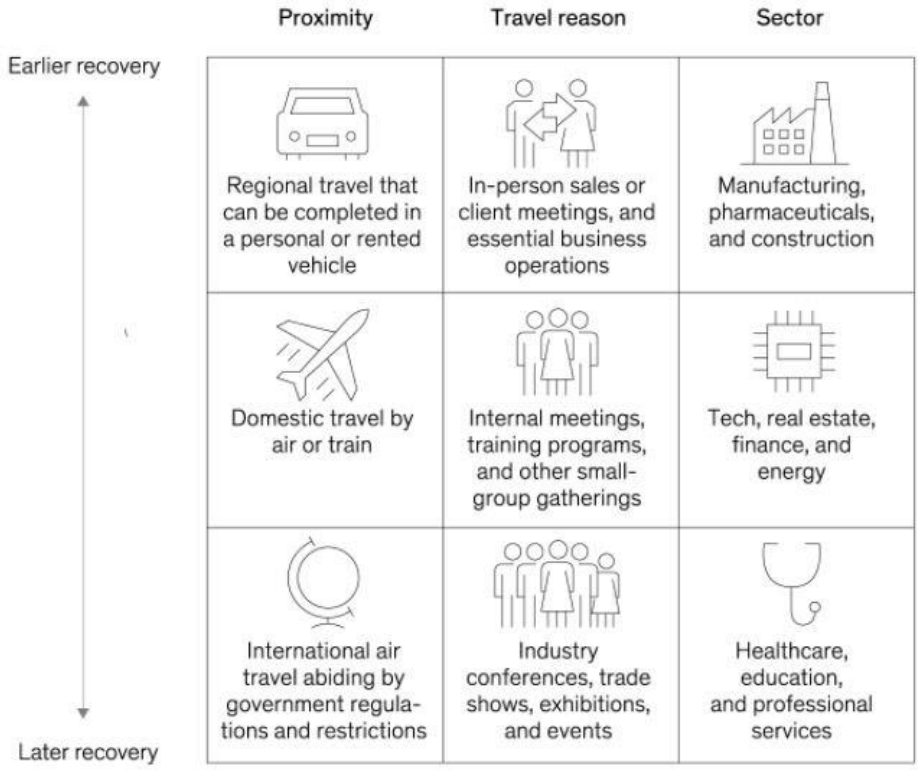

Figure 4. The recovery of business tourism in phases. Reprinted from "For corporate travel, a long recovery ahead," by A. Curley, R. Garber, V. Krishnan, & J. Tellez, 2020, *McKinsey*.

2.3 VIRTUAL REALITY TECHNOLOGY

As discussed previously, the concept of VR in business communications has gotten attention in media to a great degree lately, yet the technology itself and the phenomenon of virtual environments (VEs) are not new inventions. Indeed, the early forms of virtual reality began already approximately 50 years ago (Slater & Sanchez-Vives, 2016). During these decades, VR has been an unknown phenomenon before reaching the attention of the public in the 1980s and 1990s and being declared as "*the beginning of a new era, when VR would soon change the world for the better*" (ibid., p. 1). Soon after, VR vanished from the public and did not appear again until recently (ibid.). Moreover, the hardware needed for the use of VR has changed over the decades, and today, the most common hardware required includes a high-performance computer, the VR headset, touch controllers, as well as sensors. A further description of which equipment was used in the data collection of this research will be presented in the methodological chapter 3.4.1.

Nevertheless, what has not changed during the entire existence of VR, is the conceptual framework of presence experienced in the virtual environment. VR provides a full-immersive experience allowing the user to isolate themselves from the physical world and experience a 3D virtual environment frequently replicating the physical world (Slater & Sanchez-Vivas, 2016). Although the user often appears in the VEs in the form of an avatar, VR is able to replicate the body movement, as well as the voice of the user real-time. The term presence is said to distinguish VR from other types of technology and hardware, as it is more concerned with the human experience (Stauer, 1992). According to Stauer (1992), presence can be "*defined as the sense of being in an environment*," whereas telepresence is rather "*the experience of presence in an environment by means of a communication medium*" (pp. 74-5). In other words, presence would refer to in-person face-to-face meetings, as well as virtual reality, and telepresence to communications e.g. through video conferencing. Although in VR, interactions happen through a medium, many studies show that the experiment makes one to feel as they were present '*there*' in the virtual environment (Slater & Sanchez-Vives, 2016; Stauer, 1992). This feeling can be achieved in all use cases of VR regardless whether it is for gaming, education or remote collaboration.

Numerous recent studies have focused on the opportunities of VR in tourism industry, particularly in the times of the coronavirus pandemic. For instance, the ability of replacing travel and sightseeing experiences during the global travel restrictions has been researched to a large extent, perhaps, due to many leisure activity providers are offering remote virtual services, e.g. several museums provide people staying at home with virtual tours. Nevertheless, researching the connection between VR and leisure tourism is not a focus on this paper, and hence will not be theorised further. Instead, this research is concerned with the implementation of VR in business purposes, which the next chapter will give a background for.

2.3.1 THE USE OF VR IN BUSINESS PURPOSES

Along with the development of VR, virtual rooms and avatars were developed as a method of "*coming together*" into a "*shared space*" (Reidsma et al., 2007, p. 134). The purpose behind this development was to allow remote meetings while still having the feeling of being together. Indeed, the virtual environment meeting attendees are not required to be in the same physical space, but instead, take part in the meeting remotely through a communication media, which in this case, are the VR devices and the application allowing the sharing of the virtual space. According to Reidsma et al. (2007) such

fulfils the criteria of a meeting, which can be defined as "*an organised process of people coming together focusing on a common topic or task.*" (p. 134) When conducting meetings through a technological medium, the translation of "*communication and language, human perception and social interaction*" are considered as crucial (ibid., p. 134), as these would be present in a physical in-person meeting as well. Such translations allow the co-attendee to interpret the behaviour of the other, which in turn, has an influence in forming a personal relationship with the other, as discussed in chapter 2.1.2.

When it comes to the usage of virtual meeting rooms in different industries, some parts of architecture and design could be improved with VR, e.g. interior design could more easily be customised in the virtual space without having to use actual materials for the interior planning (Turnage, 2020). VR has also been implemented in engineering. To further explain this, 3D-models, e.g. of a building or a specific product, presented in a virtual environment allow people to in an immersive manner view a real-scale design in the middle of the space, as well as plan and comment on it together (Appendix 4, ll. 38-43). In addition to this, the use of VR for teaching and training purposes has become an important asset in the healthcare industry, e.g. in terms of international meetings and teaching students remotely (Slater & Sanchez-Vives, 2016). In such purposes, it is also possible to learn about operating the patient virtually instead of operating an actual person, which can, of course, be debatable whether the virtual version is realistic and accurate enough.

The use of avatars in VR meetings has been both criticised, as well as praised. Factors, such as eye contact and expressive behaviour are considered as values that other methods of remote communication fail to transmit (Slater & Sanchez-Vives, 2016). However, the lack of facial expressions, as well as being in the shared space rather with an avatar than a realistic human being, are described as disadvantages of virtual meeting rooms. As explained by Slater and Sanchez-Vives (2016), "*an ideal form of shared VR would require real-time full facial capture, eye tracking, real-time rendering of subtle emotional changes such as blushing and sweating, subtle facial muscle movements such as almost imperceptible eyebrow raising, the possibility of physical contact such as the ability to shake hands, or embrace, or even push, and so on.*" (p. 27) Such additions would make VR meetings superior to video conferencing and would more likely allow the substitution of physical face-to-face meetings that require travel (ibid.). This has directly to do with the authenticity of the experience.

Rather than focusing on objective-related authenticity, looking at activity-related authenticity seems more appropriate when studying the authenticity during the usage of avatars and VEs (Wang, 1999). Although the experience happens through an object, the authenticity is more involved with the immersive experience that one enters when using the device. Indeed, existential authenticity is concerned with the "*state of being*," where the sense of authentic self, inter-personal relationships, sensations, feelings and kinesthetics are considered significant (ibid., p. 359). This type of authenticity is distinguished into intra-personal and inter-personal concepts, where the first one has to do with self-identity, sensations and '*bodily feelings*' (ibid., p. 361). Furthermore, people are in "*search for authenticity of the Other*" (ibid., p. 364) which is seen in the criticism of avatars. The latter is rather involved with "*sense of authentic togetherness and an authentic we-relationship*," which can be enhanced by authenticity in "*inter-human relationships*" such as co-presence (p. 364).

The above-mentioned additions in order to make the experience more realistic, i.e. by facial capture and eye tracking, raise people's concerns related to data privacy and security during the use of VR. Henriksson (2018) recognises the concerns, as VR technologies "*necessitate the collection and processing of more — and more intimate — personal data than any other media*" (p. 57). Such data is been collected during the entire use of the device. In addition to this, as any modern application on any type of device, virtual reality games and applications collect data during the use of the application. Although Henriksson (2018) mentions that the EU General Data Protection Regulation (the GDPR) is "*highly relevant to most anyone active within the field of VR*" and is particularly concerned with the protection of biometric data (p. 57), the VR devices are still able to collect such data from the users: "*iris or retina scans, fingerprints, face geometry, handprints, and voice prints are needed to experience the realism of virtual and augmented reality.*" (Fortaleza, 2019) Such data allows the recognition of the user and in combination with what can be found online, e.g. in social media, "*will further increase the level of detail with which an individual can be analysed*" (Allen & Overy, 2016, p. 3). As data protection regulations vary in different areas around the world (Henriksson, 2018), it may be hard to establish cross-border collaboration in VR.

As mentioned previously, after the outbreak of the coronavirus, the virtual meeting rooms reached popularity as a medium of business and work communications due to the ability to meet in an immersive shared space and limit the disruption of COVID-19 (Nichols, 2020). When it comes to the future of VR, it has been estimated that VR will be used for both leisure and professional purposes, and that the industry will only keep growing (Soare, 2019). Understandably, there is a lack of research on the future of business meetings, as nothing definitive can be said. The analytical chapter 4.2 sets

out to comprehend the business professionals' reflections regarding the future of work and business communications.

2.4 CONCLUDING REMARKS ON THE LITERATURE REVIEW

The literature review chapter has reviewed the concepts relevant to build a case around the impact of the application of VR on travel for business, where at the moment, a gap of knowledge exists. The key understandings are the basis of business tourism before and after the development of communication technologies, sustainable considerations in business tourism, the emerging of COVID-19, as well as the use of virtual reality in business communications. By combining these theoretical insights with the primary data collected during the research process (further explained in the methodology chapter), the purpose is to contribute to the comprehension of the state of VR in the context of business tourism with a focus on sustainability.

3. METHODOLOGY

This chapter comprises the subchapters that are necessary to comprehend the methodological processes implemented throughout the thesis. Firstly, ontological and epistemological considerations within the philosophy of science will be presented in order to justify the research perspective. This will be followed by an explanation of the case study model, as well as choice of the approach. The third section of the methodological chapter will define how the data was gathered through the description of the experiment process, as well as the interview structure, the participants' selection, interview structure and ethical considerations. Lastly, a chapter regarding the limitations throughout the research process, particularly during the pandemic, will be presented.

3.1 PHILOSOPHY OF SCIENCE

This segment will compromise both the ontological, epistemological and methodological overview of the research paper. In order to inspect and fully understand these concepts, several researchers identified different paradigms. As mentioned by Lincoln, Lynham and Guba (2011), "*in social research, the term "paradigm" is used to refer to the philosophical assumptions or to the basic set of beliefs that guide the actions and define the worldview of the researcher*" (as cited in Kaushik and Walsh, 2019, p. 1). Thus, the notion of paradigm is the basis to understand and define the point of view of the research that will be conducted in the paper. Various are the paradigms identified by the researchers throughout the last decades; among these the most relevant have been identified:

- *Rynes and Gephardt (2004) refer to positivism, postpositivist, interpretive paradigms and critical postmodernism.*
- *Creswell et al. (2007) point to the positivist, postpositivist, constructivist, critical and feminist-post structural approaches.*
- *Blustein et al. (2005) refer to logical positivism (denoting positivism), postpositivism, and social constructionism.*
- *Ponterotto (2005) categorises to positivism, postpositivism, constructivism-interpretivism, and critical theory or the critical ideological stance.* (O'Neill & Koekemoer, 2016, p. 3)

Although each researcher has its own paradigm defined a common cluster can be acknowledged, such

as "*positivism, postpositivism, interpretivism, constructivism, critical theory, postmodernism and pragmatism*" (ibid., p. 3). The constructivism paradigm is the one that will be applied for this specific thesis, as it fits the characteristics of the main topic, the analysis and interpretation of the research question. The constructivism paradigm will be then consequently further analysed in three different points, the ontological, epistemological and methodological sections (Guba and Lincoln, 1994, p. 108).

3.1.1 ONTOLOGICAL CONSIDERATIONS

Ontology, as mentioned by Guba and Lincoln (1994), questions about "*what is the form and nature of reality and, therefore, what is there that can be known about it?*" (p. 108), therefore, trying to understand the notion of reality, with the identification of its features. Nonetheless, everything has to regard the concept of realness, whether other concepts that cannot be directly conducted to this notion are to be considered outside the ontological framework (ibid.). As previously mentioned, the paradigm that will be analysed is the constructivist one. As discussed in Guba and Lincoln (1994), the ontological aspect of the constructivism paradigm implies a relativism facet, whose reality is entirely dependent on the "*form and content*" of the people directly involved in the construction of the reality (p. 110). This relativism aspect relates to the thesis, in terms of shaping the content, considering the views of the business professionals and the people working in the field of VR to respond to the research question. Furthermore, such view is confirmed also by Kaushik and Walsh (2019), whom mention that the researchers have to comprehend and discuss the opinions of the participants, in order to gain "*subjective meanings of the phenomena*" (p. 2), thus, implying the relevance of others' views to obtain an overall gestalt of the subjective reality.

3.1.2 EPISTEMOLOGICAL CONSIDERATIONS

In this subchapter, the concept of epistemology has to be considered, in order to have a full analysis. The concept investigates the "*nature of the relationship between the knower or would-be knower and what can be known*" (Guba and Lincoln, 1994, p. 109), thus implying he necessity of a connection between the individual and the findings that the latter can gather. In terms of epistemological considerations, the term subjectivism implies that the data gathered is subjective, meaning that the latter is created at the same time as the research is proceeding (ibid.). Consequently, it entails that the necessary findings are not concepts that are already pre-existent, but rather they will be created and

further understood throughout the continuous research. This notion consistently corresponds to the inquiry of the thesis, implicating the use of semi-structured interviews, which allow the researchers to gain new findings about the topics presented together with the collaboration of the participants (ibid.).

3.1.3 METHODOLOGICAL CONSIDERATIONS

Last subchapter in the philosophy of science regards the methodological aspect of the analysed paradigm. The methodology compromises "*how can the inquirer (would-be knower) go about finding out whatever he or she believes can be known?*", meaning that there are a certain amount of methods, in order to obtain the data needed for the research (Guba and Lincoln, 1994, p. 108). Among these the use of qualitative or quantitative patterns, which will be further explained in the next chapter. Nonetheless, the specific methodology for this research paper can be identified as "*hermeneutical and dialectical*" (ibid., p. 111); the investigation puts particular emphasis between the interaction of researchers and participants, which would allow the development of more complex and unique findings throughout the research.

3.2 CASE STUDY RESEARCH

According to the social research pattern, the identification of a case study is needed, due to the nature of the research. A case study is considered as an important part of the methodology since the research is focused on a specific topic (Bryman, 2012). Furthermore, case study methods are useful when the research question aims at answering "*'how' and 'why' some social phenomenon works"* (Yin, 2009, p. 4). This research is concerned with in-person business meetings in a virtual environment with a focus on sustainability. This specific topic, due to the pioneering research questions and area, has not been studied thoroughly, thus, this research paper will be exploring a new topic in a different way. This is a characteristic of revelatory case design, which in involved with "*a phenomenon previously inaccessible to scientific investigation*" (Yin, 2009, as cited in Bryman, 2012, p. 70).

3.3 THE CHOICE OF THE QUALITATIVE MODEL

There are two different types of models that have to be considered for the research methods: quantitative and qualitative; for this specific research paper the qualitative model has been chosen, as

it fits better the aim of this thesis. As defined by Bryman (2012) in his book "Social Research Methods": "*Qualitative research is a research strategy that usually emphasizes words rather than quantification in the collection and analysis of data.*" (p. 380) Indeed, for this type of research more focus has been imprinted in the quality of the interviews rather than collecting large aggregates of interviews. Furthermore, a qualitative approach involves the understanding of the thinking design and the views of the people involved in the research, also called participants (Hammarberg, Kirkman & de Lacey, 2016). As mentioned by Hammarberg et al. (2016), "*experience, meaning and perspective*" from the participants are of relevance in the choice of the qualitative model (p. 499). Thus, the main aim of the research is to identify patterned opinions and responses that would help the researchers comprehend and analyse the research questions above mentioned. Such seeking for patterns resulted in constructing a thematic analysis, discovering similarities and differing reflections. Finally, as mentioned by Baxter and Jack (2008) the qualitative model represents a more reliable choice as it "*ensures that the issue is not explored through one lens, but rather a variety of lenses which allows for multiple facets of the phenomenon to be revealed and understood.*" (p. 544), thus, allowing the researchers to get more discerning and insightful data regarding the topic.

3.4 DATA COLLECTION

Another important step towards the final outcome of the research is the data collection. As mentioned by Kabir (2016), such "*is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes.*" In fact, in this chapter, the various methods implemented to gather data will be explained, ranging from the experiment to the interviews, the selection of participants and secondary data.

As for qualitative research, the trustworthiness of the research needs to be mentioned as an important pillar of the methodology section. In order to understand the reliability of the methods and data used, four criteria have been chosen:

1. *credibility, which parallels internal validity;*
2. *transferability, which parallels external validity;*
3. *dependability, which parallels reliability;*
4. *confirmability, which parallels objectivity.* (Bryman, 2012, p. 390)

The notion of credibility corresponds to how the collected data can be further enhanced using different techniques (Patton, 2002; Stumpfegger, 2017). In order to ensure credibility, the method of triangulation is used, where data i.e. from multiple theoretical perspectives and sources are brought together. For instance, various literature is employed together with business professionals' and VR industry workers' reflections. Transferability, instead, regards a legitimacy that can be attained through the outside context and hypotheses (Stumpfegger, 2017; Trochim, 2016). Transferability is supported by providing detailed descriptions which enable the reader to compare the case to other cases (Bryman, 2012). Dependability is required as it needs to be a proper substitute for reliability, as there is the necessity to prove the findings achieved in the experiments and within the sphere of the gathered data (Lincoln & Guba, 1985; Stumpfegger, 2017). The ensuring of dependability is done by properly documenting everything included in the research process, such as audio recordings. Last but not least, confirmability represents one of the most important concepts, as it is attainability through a full detachment and objectivity in regards to everything related to the provided data, secondary and primary, as well as interviews, recordings or any material provided within the research (ibid.). While objectivity is hard to avoid due to potentially biased opinions of the business professionals and the VR industry workers, different views will be contrasted in the process of analysing the empirical data.

3.4.1 VIRTUAL REALITY EXPERIMENT

The experiment was held in the so-called ME-lab, the Multisensory Experience Lab (see Figure 5), located at Aalborg University Copenhagen, between the beginning and mid- of August, where 16 participants took part in the process. The researchers decided to pair the participants based on the fact that they already knew each other in real life to give them a smoother experience throughout the test. The experiment was then followed by an interview, where both participants are interviewed at the same time, in order to get a better insight into the thoughts and opinions of the participants towards the various themes. There was no fixed schedule throughout the experiment although, as a wide-raging track, the participants were directed to experience the VR headset and app following these general guidelines:

1. Participants choose the guest account;
2. Participants can change their avatars' features;

3. The participants start exploring one of the virtual rooms;
4. They can try a variety of options, from writing on the tablet, i.e. taking notes, to interacting with the other participant;
5. Participants can also switch seats in the various virtual rooms; and
6. Participants can also have a look at the presentations through the main board present in every virtual room.

These steps were generally followed, but liberty towards how to use the device was given to the participants, in order for them to fully experience every aspect of the app. At the end of the VR session, interviews were arranged, pairing the two participants, so that they could answer a series of questions related to the topic.

Figure 5. The Multisensory Experience Lab. Source: Authors.

THE DEVICE AND THE APPLICATION

As the experiment was held at the ME-Lab located inside the university, the researchers were able to use a variety of devices to proceed with a successful experiment. Fundamental were the use of the virtual reality headset, so-called Oculus. As mentioned by Bardi (2019) in his article "What is Virtual Reality? [Definition and Examples]," "*Virtual Reality's most immediately-recognizable component is the head-mounted display (HMD). Human beings are visual creatures, and display technology is often the single biggest difference between immersive Virtual Reality systems and traditional user interfaces.*" Thus, implying how the headset itself is the most important feature towards a full

immersion within the virtual reality (ibid.). Moreover, Bardi (2019) emphasises the importance of the audio while using the virtual reality headset; in fact, in order for the user to be fully immerged within the virtual reality world and has a better reaction towards the environment that the participant can see in front of him. In addition to this, the headset is composed of different pieces that are necessary for the full functionality of the virtual reality; among these there are the two sensors, necessary for the calibration and movement reading, the two touch controllers, generally for hand movements and the headset, which allow the users to dive inside the virtual reality. Last but not least, the computer used is also important, as the system and processor need to be up-to-date and able to run the program on the virtual reality (ME-Lab, n.d.).

In regards to the app, the researchers have been collaborating with the company MeetinVR, a company that works within the business industry and has created an app, where the users can meet real-time using avatars and have virtual meetings through the use of virtual rooms (MeetinVR, n.d.). The app itself has several different options in terms of virtual rooms for business meetings, ranging from a small room with limited number of seats for defined topics to discuss to the rooms for brainstorming ideas and debate more freely, the area dedicated for bigger events and the standard room for usual meetings (MeetinVR, n.d.).

Figure 6. Example of a VR session: Author using the device and application. Source: Authors.

ENCOUNTERED ISSUES THROUGHOUT THE EXPERIMENTS

Throughout the experiments, there has been a fair amount of issues that the researchers have tackled, in order for the experience to become more fruitful and integral. Among these, some of the most evident were:

- The internet functionality in certain computers that was not working properly.
- Issues related strictly to the app, like the necessity to get a security code from the provider, which was initially impeding the connection between the computer and the headset.
- The app crashed several times, as the computer probably could not handle the app functionality running for a long time.
- The controllers had some problems and were not perfectly synchronized with the computer, thus having a delay in terms of manoeuvrability and compatibly.
- Minor issues were related also to the headset with one of the earphones not working fully, but it did not impede a proper full immersion throughout the experiments.

Understandably, such issues encountered may have impacted the business professionals' impressions on the technology. Hence, issues during the experiment were discussed during the interviews following the experiment, and the analytical chapter 4.1.4 takes a further look into this.

3.4.2 SAMPLING AND SELECTION OF PARTICIPANTS AND INTERVIEWEES

For this research pattern, the concept of the purposive sampling has been followed, in order to gain useful data for the thesis. As mentioned by Bryman (2012): "*The goal of purposive sampling is to sample cases/participants in a strategic way, so that those sampled are relevant to the research questions that are being posed. Very often, the researcher will want to sample in order to ensure that there is a good deal of variety in the resulting sample, so that sample members differ from each other in terms of key characteristics relevant to the research question*" (Bryman 2012, 418). Thus, the sampling of the participants did not follow a specific pattern as the ages of the participants ranged from 24 to 59 years old and they were not working within the very same field. More relevance was put on their knowledge of each other as this would have helped to ease the experiment process. The selection of the participants, in this case, was based, as previously mentioned, on the fact that they

knew each other beforehand, as it would help render both the experiment and the interview a smoother transition and would allow the participants to discuss between each other. Background information on the participants can be found on Table 3.

None of the business professionals had prior experience in remote collaboration in VR, which can be a limitation, however, that is why people working in the field of VR were also interviewed. The selection for interviews with VR industry workers was also based on purposive sampling, indeed, interviewees were required to have knowledge of the context of the study — remote collaboration in VR — in order to provide knowledge from the field. Background information on people working in the field of VR is summarised in Table 4.

Table 3

Background information on the business professionals.

Participants	*Age*	*Industry*	*Business meetings before COVID-19*	*Business meetings during COVID-19*
Participant 1	31	Education	In-person	Video conferencing
Participant 2	29	Events and Hospitality	In-person	Video conferencing
Participant 3	25	Fashion	In-person and phone	In-person and phone
Participant 4	24	Manufacturing	In-person	Video conferencing
Participant 5	25	Human Resources	In-person	In-person
Participant 6	26	Engineering	In-person	In-person and video
Participant 7	30	IT	In-person	Video conferencing
Participant 8	26	Manufacturing	In-person and phone	Video conferencing
Participant 9	24	Communication Design	N/A	N/A
Participant 10	59	Manufacturing	In-person	Phone and video
Participant 11	31	Engineering	In-person	In-person and video
Participant 12	29	Marketing	N/A	N/A
Participant 13	28	Copywriting	N/A	Video conferencing
Participant 14	34	Human Resources	In-person and video	Phone conversations
Participant 15	29	Communications and Travel	In-person	Video conferencing
Participant 16	30	Hospitality and Sport	In-person	Video conferencing

Source: Authors. Data based on Appendices 7-14.

Table 4

Background information on the people working in the field of VR.

Providers	*Occupation*
Interviewee 1	Co-founder and CEO at MeetinVR
Interviewee 2	Marketing and Communications at MeetinVR
Interviewee 3	VR content creator
Interviewee 4	VR application provider

Source: Authors. Data based on Appendices 2, 4-5.

3.4.3 SEMI-STRUCTURED IN-DEPTH INTERVIEWS

As mentioned by Bryman (2012) "*The researcher has a list of questions or fairly specific topics to be covered, often referred to as an interview guide, but the interviewee has a great deal of leeway in how to reply. Questions may not follow on exactly in the way outlined on the schedule. Questions that are not included in the guide may be asked as the interviewer picks up on things said by interviewees.*" Given this definition, the choice of the semi-structured interviews fits the current research, as it gives the participants more freedom towards the responses that they need to give. Indeed, throughout the interview process, the interviewers were able not only to interact with the participants, but also to ask further questions, and therefore, expand the theme inviting the participant to give more input for the research (Bryman, 2012, p. 471). As a typical feature of semi-structured interviews, they are based on a beforehand prepared interview guides, which is also the case in this research; interview guides for all three types of interviews are included in Appendices 1, 3 and 6.

All the interviews, the one conducted with the application provider, as well as both the participants and providers, have been recorded and transcribed, in order to obtain clear and proper data that can be later used towards the development of the research. The interviews were conducted in a quiet location, to avoid undesired background noise and during the experiment interviews, the participants were kept together as a pair, in order to have them forming a discussion with each other. The instruments used were phones, which were fundamental to record the interview in order to transcribe the interviews later. The transcriptions followed the conversations; however, better comprehensibility was provided. In other words, in the process of transcription, irrelevant issues, such as stuttering, repetition of words, as well as the interviewers' responses indicating the understanding of what the participants have said (such as "okay") have been eliminated from the final version of the transcripts.

3.4.4 ETHICAL CONSIDERATIONS

The ethical considerations are another important part of the methodology section, as they enunciate which are the protocols to follow, in order to maintain a proper relationship between the participants and researcher. First and foremost, anonymity for all participants has been attained as no names or company details have been revealed in the transcription in order to protect their identities. The only exception has been made for one interview with one of the providers, MeetinVR, which is one of the collaborators of the experiment, thus, names were necessary to be provided in this case. Nonetheless, the level of confidentiality has been respected among the participants, providers and researchers. Thus, no information, except for the necessary ones for the data collection, will be published. Furthermore, all the interview participants gave consent to recording of the interview and publishing the transcripts.

3.4.5 SECONDARY ANALYSIS OF DATA

According to Bryman (2012), secondary analysis of data has to do with "*the analysis of data by researchers who will probably not have been involved in the collection of those data, for purposes that in all likelihood were not envisaged by those responsible for the data collection.*" (p. 312) Secondary data provides part of the crucial data in the research, and therefore, secondary analysis of data is a method used in the study. Due to the uniqueness of the topic and pioneering ideas in this area, the secondary data gathered is limited compared to other research papers. Nonetheless, some relevant research on the field has been collected and fully utilised in order to further interpret and give an added examination on the research topic. Secondary data was further scrutinised in the literature review, with a comprehensive overview of the main themes in regard to the topic.

3.5 LIMITATIONS

Several are the delimitations that need to be cited, as they were limiting the further extrapolation of data for the research. Firstly, the topic of virtual reality and its annexed themes were limiting in their own ways, as the analysis could not go further than the presented case study. Furthermore, the lacking research on the connection of business tourism and VR turned out as a limitation. Secondly, there were difficulties in arranging the interviews with several providers and participants, given the busy

schedules and the issues with their different working hours. This resulted in gaining less participants, and therefore, gathering less data. Another limitation worth noticing, was the language barrier in certain cases, as some of the participants were lacking in expressing complex thoughts using English.

Since COVID-19 is not only one of the researched parts of the thesis but also the reason why the research has been postponed, a paragraph has been dedicated to this issue. Due to the lockdown during the spring of 2020, all the AAU facilities were shut down, and therefore, the lab where the experiments were supposed to run remained closed. Therefore, the experiments were delayed until mid-August, setting a limited amount of time for the researchers to complete the data collection. Another issue that aroused throughout the COVID-19 pandemic was the lack of participants that were able to participate to the experiment due to concerns of the virus. Nonetheless, these were not major issues, as in the end, the researchers were able to collect enough sufficient data to proceed with the analysis of the subject of the study.

4. ANALYSIS

The following analytical chapters are divided by the previously stated sub-questions, which they aim at providing answers for. More precisely, instead of using our data quantitatively and presenting how many would and would not implement VR, the first chapter (4.1) will qualitatively look into the experiment participants' motivations in adopting VR in work and business communications In combination with relevant literature, it aims at comprehending *what are the business professionals' reflections and industry provider insights concerning MICE in virtual reality*.

The second chapter (4.2) will seek to understand *how the COVID-19 pandemic has impacted MICE travel, and what could be expected regarding the future of work and business meetings* by combining the qualitative experiment data with relevant literature.

Based on the findings from the two analytical chapters in combination with the empirical data and relevant literature, the final discussion (4.3) aims at *exploring VR in the context of business tourism with a focus on sustainability from the different stakeholders' perspectives*.

4.1 BUSINESS PROFESSIONALS' REFLECTIONS IN RELATION TO ADOPTING VR IN WORK AND BUSINESS COMMUNICATIONS

The first analytical chapter will present the data collected during the VR experiments: the business professionals' reflections — focusing on advantages and disadvantages, as well as pointing out motivations, possibilities and barriers — in adopting virtual reality in work and business communications. The reflections are discussed together with literature introduced in chapter 3., while finding patterns on where the literature and the primary data support and confront each other. The chapter is divided into six parts, of which

- the first one (4.1.1) investigates reflections related to the cost-value-relationship,
- the second one (4.1.2) scrutinises reflections in terms of time, preparation and change management,
- the third one (4.1.3) takes a look into the reflections related to authenticity and sensations,

- the fourth one (4.1.4) presents problems to do with communication and the technology (the devices as well as the application) aroused during the experiment and aims to find out whether these can influence the adoption of the technology,
- the fifth one (4.1.5) examines whether potential data privacy concerns impact the business professionals' motivations, and
- the last one (4.1.6) discusses business tourism leisure experiences in relation to VR from the perspective of business professionals' reflections on tourism in VR.

Finally, at the end of chapter, concluding remarks on the business professionals' reflections will be presented, as well as findings regarding opportunities and obstacles in implementing VR in MICE will be identified.

Before getting into the analysis, we want to mention that we acknowledge that VR meetings and video conferencing are two entirely different topics, as also indicated by the application providers (Appendix 2, ll. 88-9). While in the business professionals' reflections part of the paper, the aim is to find out obstacles and opportunities in VR alternating face-to-face physical MICE that requires travel for shorter or longer distances, the chapter will be adding video conferencing in that comparison. The reason why meetings in virtual reality and video conferencing are contrasted and elements within these ways of conducting meetings are compared, is that most of the consumers, especially during the times of the pandemic, are doing meetings over video conferencing, and they compare these two when identifying the opportunities and obstacles in implementing VR in work and business communications.

4.1.1 REFLECTIONS RELATED TO COSTS AND VALUE

Many of the experiment participants mentioned the price of the device and application as a probable obstacle in including VR as a way of work and business communications (e.g. Appendix 7, ll. 139-41; Appendix 12, ll. 135-6, 357-9; Appendix 13, l. 346). Indeed, an article comparing video conferencing with VR meetings lists the costs of hardware and software needed for setting up a virtual meeting: "*headset per user (Oculus, HTC Vive, Windows Mixed Reality, etc.), equipment with processing power, team to program the space from scratch or through a platform (App from Stem, Windows Mixed Reality, etc.)*" (Stachiw, n.d.). It is, however, unclear whether the modern VR headsets require high-performance PCs to run the VR technology, as different sources give different

information (ibid.). Furthermore, it has been expressed that purchasing the technology for numerous employees to use will turn out costly. Nevertheless, technology providers are aware of this, and mixed technologies (XR) are becoming more popular, which means that "*someone is on a mobile, the other one is on a VR headset, and other guys could have AR headsets, and another one is alive in front of a camera*" (Interviewee 4, Appendix 5, ll. 215-6). An example of a company providing such is VRtuoso, which we tried to get an interview with, but unfortunately, they did not have time. Despite that, what is clear, is that implementing VR for work and business purposes is expensive (Chakraberty, 2019). Thus, as interviews with people working in the VR industry identify, the current companies adopting VR for work and business communications are most often larger companies that can "*afford to do a pilot test to try if VR works for them*" rather than individuals users or SMEs (Interviewee 3, Appendix 4, l. 29). Nevertheless, experiment participants recognise that implementing VR and executing meetings in the VEs instead of travelling can save a company a lot in travel costs in the long term (e.g. Appendix 7, ll. 161-2, Appendix 10, l. 266). On top of that, immersive computing expert Singh (2020) mentions that due to the current pandemic, the future of business travel can become considerably more expensive, in which case, purchasing the costly technology might turn out to be a cheaper way of doing business meetings (as cited in Nichols, 2020).

Especially due to the high price of the VR technology, Interviewee 3 points out that in substituting other methods of meeting, VR needs to provide value for the company to have them spending money on the devices and the application, as well as to spend time on learning about the functionality (Appendix 4, ll. 55-6). In industries, such as architecture and design, the value is evident in terms of making collaboration easier and saving costs:

> *[...] in those cases, in the building and architecture industry, the value is very clear, that you're able to see the building in real scale, in an immersive way.* (Interviewee 3, Appendix 4, ll. 57-9)

> *Also prototyping. Normally, or at least traditionally [...] when you want to make a prototype, you have to invest 20, 30, 50,000 euros on a thermally moulded prototype, you know, when you have to melt plastic to give it a shape. And then, they see it, like, "I'm not sure, you know what, change this and that," you know how much money is involved in that? Why? I can put my headset in Milan, Kenji can put his headset in Tokyo, he can show me the design, I can tell him "Kenji, I don't like this, I don't like that, this interface is not great, move the handle there, put more lighting there". And what's the fuss? It's a 3D-file. So, imagine how much*

time and money you've saved. So, obviously, VR is a great answer to this. (Interviewee 4, Appendix 5, ll. 160-7)

The possibility of drawing in the air and showing 3D-models was also indicated as an advantage of VR compared to other types of meetings by the experiment participants (Appendix 11, ll. 42-3; Appendix 12, ll. 145-8; Appendix 14, ll. 99-102). While it is possible to create 3D-drawings in the air in VR, taking notes and typing in general are designated as an enormous problem, as it is slow and difficult in the virtual environment (Appendix 14, ll. 102-4). Being compared to "*writing on an old type machine*," Participant 15 mentions that "*the note writing really kills it for me, because it's so important for us to, like with all the brainstorming, all the ideas, all the tasks that we kind of give out to each other. It's super important to just get it written down.*" (Appendix 14, ll. 103, 129-31) Interestingly, typing and writing texts in VR is not noted at all in literature nor by people working in the industry, although it should be one of the key values in work and business meetings.

Another value that VR provides is the possibility to concentrate better and avoid getting distracted by other issues, as when wearing the VR headset, the experience is immersive: "*For example, with Zoom, you can get easily distracted, because you can just have it on your camera and I know that I was like "oh, yeah, they will talk five minutes about that, then I can cook, check my email, do this and do that and get a coffee". But here, you're really in it. You can't leave and there's nothing [...]*" (Participant 1, Appendix 7, ll. 121-4). Hence, although VR meetings have to be short, as the technology should not be used for more than an hour at a time, it can be argued that meetings in VR could be more productive compared to other types of meetings due to the fact that everyone is fully concentrated during the immersive experience and trying to make the most out of the brief time.

Although advantages of VR and values brought by it — mentioned by the experiment participants — cover many features, many of the participants say that VR would not bring anything extra and Zoom is covering everything necessary for now in terms of work and business communications (e.g. Appendix 7, ll. 132-3; Appendix 10, ll. 128-9). Nevertheless, at the same time, many of the VR's advantages compared to video conferencing are brought up, of which many are related directly to the setting of video conferencing. For instance, values with VR having to do with one's appearance are brought up: a camera constantly filming one in video conferencing is pointed out as 'intrusive' (Appendix 10, ll. 90-2), and the fact that one does not have to care what they look like or what they wear when participating in a VR meeting, as no one is able to see the real life appearance, is described as an advantage (Appendix 9, ll. 105-6). However, also being linked to one's appearance, the lack of

facial expressions and seeing the other participant's face are indicated as values of meeting face-to-face or via video (e.g. Appendix 9, l. 96; Appendix 12, l. 157; Appendix 14, l. 95). Other advantages of VR, when comparing to video conferencing, are people interrupting each other less than in Zoom-meetings (Appendix 8, ll. 116-7), as well as less of monologue from one participant and passivity from others happening (Appendix 10, ll. 71-2). This indicates a higher participation in the meeting, which again reflects the productiveness during the meeting in VR. Meetings in the VEs are also described as more fun than in normal video conferencing (Appendix 7, ll. 150-1, 155; Appendix 9, l. 151), e.g. due to the possibility to change the location and background of the meeting room (Appendix 9, l. 151, Appendix 14, l. 124). However, the fun aspect has also been described as negative: "*There are fun things you can do, so, I didn't feel the seriousness. That might have been the setup. But for me, it's still a playground.*" (Participant 7, Appendix 10, ll. 73-5) It was also discussed that the lack of seriousness may be due to the environment: "*If you know your work environment, then you're going to feel more obliged to use if more seriously.*" (Participant 8, Appendix 10, ll. 76-7)

In terms of VR replacing face-to-face meetings, most of the participants mention that the meetings that require business travel are already cut to the crucial or most important ones (at least in the times of the global pandemic) and cannot be substituted with any virtual tool. Reasons behind this are e.g. that

> The meetings would become less personal and could result in losing business due to cultural differences, and the lack of personal touch may be being considered rude:
> *I think, maybe culture again [can be a disadvantage in VR]. Sometimes, there can be an aspect, one thing is if you can add to it, you can do something like this. You can shake hands [in VR], but, I've never been in a meeting in Italy, but, my friends in Italy give kisses on the cheeks.* (Participant 4, Appendix 8, ll. 176-8)
> *Disadvantages [in VR] are regarding the personal aspect, it's not personal [...]* (Participant 5, Appendix 9, l. 153)
> *[...] the physical meetings with suppliers [... are] good for team morale, getting to know people. [...] what happens is we have a follow-up meeting beforehand, and then, a deep dinner meeting afterwards where you'd continue talks that you'd been having previously anyway, along with networking, like we say. But personally, I don't see it [VR] being a viable option at the moment.* (Participant 8, Appendix 10, ll. 130-1, 134-7)

I don't think it's going to be as efficient as going into places, or as productive as going to places, so you're going to lose. I don't want to say you're going to lose business, but it's just that things are not going to get done with VR. (Participant 7, Appendix 10, ll. 391-2)

The meetings are organised for finding new suppliers or customers:
[...] for us, when we go to China, we, sometimes, need to find new suppliers. (Participant 3, Appendix 8, ll. 129-30)
[...] it is substantial to have the real contact with a person, especially when you're dealing with sales, or in general with [...] commercial negotiations (Participant 10, Appendix 11, ll. 69-71)

The meetings have to do with material matters, i.e. checking the quality of the supplier and the working facilities, having to install hardware:
[...] we also need to see which quality they are capable of doing, how are the working facilities, how is everything, and they can't just show us by a [virtual] business meeting, like, we need to meet them in person. (Participant 3, Appendix 8, ll. 130-2)
It depends on what it is about, do we need to have the product, is it enough to just send it, or is it about a shipment we've sent. We've actually managed to sell two printers and install them on distance, somehow, but they need more calibration. [...] we still need to go there and help them a bit. (Participant 4, Appendix 8, ll. 140-4)

The examples above describe why personal face-to-face meetings are crucial in some cases, and why no virtual option could substitute them. Findings present that when working globally, the cultures may differ, and therefore, implementing VR in meetings across borders can turn out problematic sometimes due to the lack of personal touch. In addition to that, industries dealing with actual materials can find virtual meetings difficult. People working in the VR industry also recognise working with certain material matters problematic in VR: "*So, fashion or design industry, if I'm selling furniture, I'm showing you a type of wood what is very particular, or leather makers, that rely not only on the visual side, but also on the touching feeling.*" (Interviewee 4, Appendix 5, ll. 395-7)

While participants recognise lots of the value that VR meetings could provide, it still seems that all the values are not enough to implement the technology. As suggested by people working in the industry, this may be due to the high costs of even conducting a pilot test: the value is not enough for certain industries, so that people are willing to purchase the devices and workforce to get the

technology set up. Another challenge — not mentioned by the business professionals but recognised by scholars — is the frequently temporary state of technology; as it keeps constantly developing, many are afraid to invest in it in order to not own a soon-to-be outdated product (Swarbrooke & Horner, 2001).

4.1.2 REFLECTIONS RELATED TO TIME, PREPARATION AND CHANGE MANAGEMENT

When comparing the effort needed to set up the meeting in virtual reality versus in video conferencing, it was mentioned frequently that setting up the VR experience is quite a lot more time-consuming (Appendix 10, ll. 188-192, Appendix 12, ll. 117-8) and with requiring all the device cannot easily be done e.g. on phone or outside of the house (Appendix 7, ll. 135-41). In addition to the required time to set everything up, a bit of preparation is needed. For instance, documents and files have to be uploaded in advance in order to be able to access them in the virtual meeting environment: "*Another disadvantage that just came to my mind is that it kind of requires a bit of preparation to put in the files versus in all the others, Adobe Connect, Google Hangouts*" (Participant 1, Appendix 7, ll. 151-2). Furthermore, users trying it for the first time need guidance and practice on how to use all the functions before taking part in the actual meeting (Appendix 9, l. 71; Appendix 12, l. 51), for instance, Participant 16 mentions that "*if I was to do this, like a real meeting with this, I would practice the features beforehand, because, if not, I think it will make the meeting a lot longer [...] I will send out a memo saying "practice a couple of hours before," so we all know what we're doing.*" (Appendix 14, ll. 65-6, 69-70) People working in the VR industry can also recognise the issues of setting up the technology and learning how to use the application and devices:

> *[T]here are some companies that already have a hard time with understanding Zoom and scheduling a Zoom-meeting. So, this is like ten times more difficult to manage and to set up. [...] setting up a virtual call should be as easy as setting up a Zoom-call, and, at the moment, it's not.* (Interviewee 3, Appendix 4, ll. 70-7)

However, what was not recognised by most of the participants, is that VR meetings, when compared to face-to-face meetings requiring travel, save a lot of time in long term even when taking into account all the time needed to set up the virtual environment and learn how to use the device. Bringing up such timesaving is one of the most used marketing techniques of numerous VR meeting providers, as well as identified as the most prominent reason for remote business communications (see Table 2).

Some of the participants working currently or having worked in larger corporations (read: potential target customers of VR providers), mention that understanding the technology, as well as learning the necessary skills to use the devices and the application, might turn out problematic especially for the elderly that may have the leader positions in the corporation:

> *I also don't see [...] the people I work with, for example, wouldn't want to put the headset on. I just know that for a fact. [...] And I mean, we have people who are older, they are more of leaders, they don't really do things with computers. For example, they don't create documents and things like that, that's not their role within their role. So, I think all these capabilities within the virtual reality room will be hard for them to learn. [...] And that would just slow down meetings even further, I could imagine.* (Participant 8, Appendix 10, ll. 143-4, 148-51, 153).

In such cases, meeting in the virtual environment could be less of saving time. Furthermore, Interviewee 3 mentions generally about people's unwillingness and lacking motivation regarding confronting new difficult challenges, which learning how to set up and onboard virtual reality meetings is an example of (Appendix 4, ll. 73-4). This could even more be the case with older generations being used to doing everything in a certain way and being unmotivated to face the change management and update the traditional way of working. Nevertheless, Interviewee 3 mentions that most of the companies providing virtual reality applications or equipment aim at making the process as comfortable as possible by providing guidance and onboarding (Appendix 4, ll. 75-6).

Another challenge faced by VR industry can be that people might see it as a trend, which will pass by. What makes it seem as a trend, is the media writing articles that downgrade the already familiar ways of meeting and suggest that if one wants to keep up with the trends, they should implement VR, as it is the future, e.g. "*Is virtual reality the future of video conferencing?*" (Houser, 2020) and "*Virtual Reality Meetings Are the New Zoom*" (Sandre, 2020). VR has been shown as a trend especially after the outbreak of the pandemic, when the use cases of it increased significantly. While Interviewee 4 (working in the VR industry) admits that VR is brought up as a trend at the moment (Appendix 5, l. 337), Interviewee 3 argues that companies interested in finding alternative ways of meeting are more concerned with costs and value: "*I think people won't listen to hypes that much, they rather listen to numbers and to ROI. They can do a tiny pilot, but a company won't put real money in it until they see a return of investment and they see very positive results.*" (Appendix 4, ll.

139-41) Interviewee 3 continues by mentioning that nonetheless, the hype created by media is not harmful: "*It's very useful, that the media is sharing this technology and educating, but companies do very rational decisions when it comes to money and adopting technologies. It's not about being a hype, it needs to be something powerful.*" (Appendix 4, ll. 141-3) This could be a reason for the previously discussed cost-value-relationship and why companies are so careful about implementing VR in their work and business communications.

4.1.3 REFLECTIONS ON AUTHENTICITY AND SENSATIONS

Although not directly mentioned by the experiment participants, it can be seen that they are seeking for authenticity in the virtual experience by comparing it to real life face-to-face work and business meetings, listing advantages and disadvantages, as well as opportunities and obstacles of the VR meetings, and considering the face-to-face meetings as the authentic 'base' where everything else can be compared to. Motivations of participants related to authenticity will be analysed through Wang's (1999) theory of existential authenticity, which is concerned with the "*state of being*" and "*the sense of authentic self*," in other words, focused on relationships between people, feelings, sensations and kinesthetics (p. 359). Wang (1999) recognises two dimensions within existential authenticity: intra-personal and inter-personal authenticity, of which the first concept is rather concerned with the self and one's own feelings, whereas the latter handles relationships between individuals and the authenticity of the other.

Linked to the abstract of intra-personal authenticity, the physical aspect of having to wear the equipment is mentioned as a disadvantage (Appendix 10, l. 186). Wearing the tethered headset, holding the touch controllers in hands, as well as being limited in movements within the zone designated by the sensors, are involved with bodily feelings, and it can be argued that due to the fact that one has to carry and be aware of all the equipment during the experience, it can result in a sense of existential inauthenticity when comparing to a 'real' meeting (Wang, 1999). It is worth mentioning, however, that the devices are developing continuously, and for instance, at the time of writing, less than a year ago, a new tether-free 'all-in-one' Oculus Quest headset with hand-tracking was launched (Chakraberty, 2019). This means that the headset recognises the user's hands without having to hold any touch controllers, so that one can move and use their own hands more efficiently in VR (ibid.). Thus, the developing VR technology could enable even more authentic experiences in the future.

Bodily feelings are also directly linked with sensations, and as brought up by one of the participants, some of the senses are not involved in the virtual experience (Appendix 10, l. 251), however, it did not seem to be a common concern, as it was not mentioned by anyone else. The application providers also confirm that "*it will never completely replace personal meetings because it will never be quite the same. It can be absolutely crazy hard to integrate, for example, touch, feelings, and things like this*" (Interviewee 1, Appendix 2, ll. 228-30). Participants rather expressed the VR meeting to feel more personal compared to video conferencing due to the opportunity of shaking hands with each other (e.g. Appendix 9, ll. 114-5) and being able to feel it; indeed, the touch controller in one's hand starts to vibrate when the participants' hands touch in the virtual environment. This, in turn, creates a sense of existential authenticity, as the experience is close to the 'real' one (Wang, 1999).

When considering inter-personal authenticity, authenticity can be felt in the other participant present in the experience, as well as in the relationship between "*themselves*" (Wang, 1999, p. 364). Wang (1999) rather focuses on the authenticity in inter-personal relationships, however, in this case, it can also be intriguing to look at the search of authenticity in the other — a more common concern was that one is in a meeting rather with an avatar than with a real person:

> *Of course, it's not so personal in terms of it's an avatar, right? So, you cannot see someone's expressions, and from expressions, you can really understand a lot of things. You can understand, maybe, sometimes, things that someone doesn't say but they feel. So, I miss this human interaction. [...] But the voice is your voice, so, in that aspect, we were listening to someone speaking.* (Participant 5, Appendix 9, ll. 96-100)

> *For me a big thing is the avatar, it just freaks me out. Because face-to-face meeting and reading someone's face, interacting with somebody face-to-face, I doubt that you will ever be able to substitute that with a virtual reality room. You also have that to a certain extent in video conferences, so just looking at somebody's face and seeing their expressions is a definite downside of virtual meetings.* (Participant 7, Appendix 10, ll. 181-5)

> *[...] for me, like for as a nature person, I analyse body language and facial movements. So, I think, that's really important for me in a meeting to see the real person, not an avatar.* (Participant 14, Appendix 13, ll. 67-9)

> *One thing that was kind of also a first impression, maybe, was seeing all the avatars. Obviously, because now, he [Participant 16] chose a very different kind of looking avatar. But there's just a thick, kind of, stone face thing. You know, we're not used to be met by that, [...] usually when we log into Zoom, people are smiling, there are expressions. I think, it's one of the challenges also [...]* (Participant 15, Appendix 14, ll. 72-6)

The above-described lack of authenticity in terms of limited facial expressions and rather being in a meeting with avatars than humans is a huge drawback of VR meetings. Some of the participants, however, believe that these feature can be added later to improve VR (Appendix 12, l. 157), and also the application providers mention that the avatars are constantly developing: "*[...] in a couple of years, there will be technology to make them identical to humans*" (Interviewee 1, Appendix 2, ll. 72-3). Interviewee 1 continues that it will depend on a type of meeting and "*whether you want that or not because if you scan a person, they might not like how the scan looks like and they might start feeling self-conscious about how their virtual avatar looks like. [...] but I think, in enterprise, most people would be interested in having realistic avatars.*" (Appendix 2, ll. 73-5, 83-4) Some other similar remote collaboration applications, e.g. Spatial, have the option of uploading a picture of oneself, which will be transferred into an real-looking avatar (Sandre, 2020), so the authenticity of the looks of the avatar is not impossible to achieve in VR.

Furthermore, the lack of facial expressions can impact the search of authenticity in the relationship between the participants, as one is not able to read others' faces and learn from that, as Participant 5 described above. Taking into account this and the current state of the avatars (read: semi-realistic), search of authenticity in the other participant can be better achieved in video conferencing. On the other hand, it was also mentioned that in comparison to video conferencing, the bodily movement of the avatars is more realistic: "*You kind of feel like the person is closer [...] because you see and avatar standing there, which behaves and does what the other person [participant in the meeting] does.*" (Participant 7, Appendix 10, ll. 68-9) Indeed, one of the advantages of VR is described to be the ability to have "*a virtual body with arms that swing around as you move your limbs in real life, a mouth that moves when you talk, and eyes that blink.*" (Sandre, 2020). Therefore, to some extent, the authenticity of the other can be better achieved in virtual reality than in video conferencing.

In terms of analysing the search of authenticity in the encounter in VR between the participants, the collected data from the experiments shows that the VR experience enhanced the feeling of "*togetherness*" in the relationships between the participants (Wang, 1999). To further explain this, it

was widely agreed that when meeting in the virtual environment, the participants would have the feeling of being in the same room while working remotely (Appendix 9, ll. 118-20; Appendix 12, ll. 86-91), and the VR meetings enable people to come together to the same working space even if being located around the world in different time zones (Appendix 7, ll. 148-50; Appendix 12, ll. 115-6). In more details, the sense of togetherness was achieved by

> The ability to handshake other meeting attendees: *"I like this whole idea of I could handshake or high five someone. It had a more of, if you compare a Zoom-meeting or Skype-meeting, this felt more personal.*" (Participant 5, Appendix 9, ll. 114-5)
>
> Better participation by all the meeting attendees: "*[...] that thing where video conferencing might be a bit passive and a monologue going on, because you can kind of just sit back and not participate, maybe that gets mitigated [in VR].*" (Participant 7, Appendix 10, ll. 71-3)
>
> Meeting attendees will interrupt each other less than in video conferencing: "*I often find, when I sit in the Zoom-meetings, and people, they tend to jump in between each other and kind of interrupt each other, because it's not as easy as when we're sitting here — not interrupting [...*]" (Participant 4, Appendix 8, ll. 116-8)
>
> The possibility to have more intimate conversations with another attendee: "*[...] you can interact individually with one other individual, because on a video conferencing, if you share a screen, for example, everyone's going to see it, but in the virtual reality, you can have kind of a private interaction with one individual or however many.*" (Participant 8, Appendix 10, ll. 101-4)

Based on the above-mentioned responses, the feeling of togetherness, the sensuousness and the realness of the experience are enhanced, resulting in greater inter-personal authenticity. The feeling of togetherness and the social experience could be even further enhanced, as some VR providers are able to provide companies with virtual replicas of their already familiar offices where one can virtually meet the already familiar co-workers (Deighton, 2020). The arguments above also show that the VR experience can in terms of relationships between the meeting participants be more authentic and closer to the 'real' than video conferencing. The points mentioned above are also closely linked to and overlapping with the discussion of values brought by VR.

Nevertheless, what one of the participants mentioned as lacking in this inter-personal communication, was the ability to have and share food (Appendix 9, l. 161). The other participant present in that precise interview suggested that one could eat food at home while being in the experiment, but Participant 6 mentioned the aspect of sharing it with the other meeting attendees as important (Appendix 9, ll. 162-3). This, of course, comes to different cultures and what each one considers as important, so to better understand the opinions of all experiment participants, a question regarding their personal habits and opinions on what business meetings should include was asked in the beginning of each interview. Regarding the meal-sharing, it would be extremely difficult to implement such in the virtual environment, so one could also sense the shared meal, e.g. by sensing the scent or taste.

According to Pallud and Straub (2007), links between the authenticity of a VR experience and the adoption of technology exist — when one considers the experience authentic, they are more likely to adopt the technology into use, and in the same way, in inauthentic and 'artificial' experiences the likelihood of rejection increases (p. 5). Although the research done by Pallud and Straub (2007) is rather involved with VR experiences in museums, the theory goes in line with our data as well; the business travellers are comparing meetings in the virtual environment to regular face-to-face meetings and looking for patterns between these. The additional elements (e.g. the ability to draw 3D in the air), as well as the elements that can be substituted in the VR meeting, increase the value of the virtual option and can result in wider adoption of the technology. Vice versa, the inauthentic sensations during the experience can turn out fatal for the technology.

4.1.4 PROBLEMS ENCOUNTERED DURING THE EXPERIMENTS IN RELATION TO COMMUNICATION AND THE TECHNOLOGY

As mentioned in the virtual reality data collection chapter 3.4.1 in the methodology, certain problems were encountered during the virtual reality experiment. Such problems were noted down during the data collection and will be taken into account when analysing the user motivations, as they can possibly become obstacles or barriers in the users' motivations in adopting virtual meetings as a part of work and business communications.

As described in the methodology, the application crashed on one of the computers during several experiments. Other problems in relation to the devices pointed out were blurry view in the headset if

it was not perfectly positioned in one's head (Appendix 10, ll. 87-8; Appendix 14, l. 83), tracking problems with the hand controllers (Appendix 8, l. 98; Appendix 10, l. 85; Appendix 12, l. 68), as well as problems with the headphones (Appendix 10, l. 85). The participants did not experience problems related to the devices as obstacles in considering virtual reality meetings as an alternative to other types of meetings. They were rather understanding and pointed out that technical problems can occur with other devices and applications as well, e.g. "*But you also have them [technical problems] with Skype. They [video conferencing tools] also have connection problems and "can you hear me," and so on with Skype*" (Participant 11, Appendix 12, ll. 119-20). However, it was mentioned that such problems show that it is easier to use other types of communication software, e.g. videoconferencing:

> *If you have a really well set up conference room with cameras and well-established applications, like, you just hit a button on a touchscreen somewhere, and you're in a conference room in another country or continent, and you have a bunch of cameras, and you just sit there without putting something on your head [the VR headset]. For me, I don't see the big difference, the big upside of having that in a virtual room.* (Participant 7, Appendix 10, ll. 138-42)

Some of the experiments went perfectly without any issues related to the application nor the devices, and in these cases, the participants did not comment on any problems with the technology and communication with the other participant. It is also intriguing that in the experiments without technical problems, the participants were more positive about adopting VR as a tool for meetings and work communications. For instance, when been asked whether VR meetings could be successful in the participants industries as a way of substituting face-to-face meetings and videoconferencing, some of the following responses from experiments without or with minor technical issues were received:

> *I think sometimes yes, when I work internationally.* (Participant 1, Appendix 7, l. 132)

> *I mean, definitely, in my previous company, we had a virtual reality display for one of our projects, it was the wind turbine project [...].* (Participant 6, Appendix 9, ll. 139-40)

> *I mean, we've seen it with Corona that the business can go on, more or less, without meeting in person. And that is just meetings via Skype or whatever. So, if you, actually, had these virtual meetings, I think they could replace a lot of the meetings and make it easier for people*

to meet, also, from different countries and time zones and so on. (Participant 11, Appendix 12, ll. 113-6)

As it was the first time for most of the experiment participants to try meeting in virtual reality, and, for some, the first time trying VR at all, it can be argued that the first impression, especially with such new and relatively unknown technology, can make a difference in the users' attitudes towards it (Kulviwat, Bruner II & Al-Shuridah, 2009). Furthermore, Interviewee 2 mentions that a general problem with innovation is "*that you have to wait for people to start trusting it [...] The more people do that, the more people explore and try to experiment with it.*" (Appendix 2, ll. 119-21) An issue with the experiment might be that, even though the participants got to try a real business meeting setting, the content of the meeting was not real in terms of them e.g. not meeting customers but rather another participant and not discussing business. Therefore, the participants may have not experimented with it in real purposes, and their motivations could change if they participated an authentic business meeting in VR. But, when taking into account users' motivations in this experiment, two types of attitudes can be seen — the early adopters and the ones doubting it. This goes in line with what the providers say: "*[...] some are more resistant to change if they are very accustomed to their way of working. But there are some who are naturally early adopters, and those ones also find it easier to make the transition.*" (Interviewee 2, Appendix 2, ll. 105-7) It can be concluded that the use of virtual reality in work and business purposes is still a new phenomenon, hence, a small percentage is ready to adopt it currently, and it will yet to be seen whether the development of the VR technology will bring the product to the mainstream acceptance.

4.1.5 REFLECTIONS ON CONCERNS ABOUT DATA PRIVACY IN VR

The rapid development of the immersive virtual reality environments and the entire process of change management into a new technology have risen concerns of the safety and privacy in the use of such new technology (Fortaleza, 2019). Being connected to the IoT, VR devices can collect lots of different types of data, which can, then, be accessed e.g. by the software developer. Such data includes, for instance, biometric data, which is concerned with one's "*iris or retina scan, fingerprints, face geometry, handprints, and voiceprints [which] are needed to experience the realism of virtual and augmented reality.*" (Fortaleza, 2019) In addition to biometric data, the gear, including the headset, the touch controllers, and tracking systems, can record conversations as well as videos during the VR experience (Fineman & Lewis, 2018), which in combination with the user's social media profiles can

give detailed descriptions of the individual (Allen & Overy, 2016). Furthermore, users of the device may submit personal information to the software or the VR gear provider in the process of registering or entering payment details (McGee, 2016).

Nevertheless, VR is not the only technology gathering data during the use. Fortaleza (2019) explains that all types of technological devices, as well as applications, "*nowadays collect our data as well as digital footprints for businesses and other industries to incorporate that data to improve their processes.*" Such technologies include devices used every day, such as smart phones. In addition to aiming at improving the user experience, data can be collected for advertising purposes. In the recent years, many of us have become more aware of smart phones and applications following clicks, as well as listening to conversations. However, it may not be common knowledge that VR can capture similar data. According to Allen and Overy (2016), more advanced VR gear is able to collect "*detailed data on how you interact with a virtual world, how long you look at a certain object, and your facial expression when doing so, [which] could effectively be used for product placement purposes, for example.*" (p. 7) The user should always be informed about such data capture (ibid.), however, an issue can be that users do not always understand what is written in the privacy terms (Appendix 14, l. 219). Moreover, a common opinion is that even if an application or device did not comply with all the data protection rules, users will not be bothered by it for the sake of being able to use the software or device:

> *The functionality, sadly, always comes above the data protection and everything. So, you know, if it can solve a problem or an issue that you have, you will use it no matter the data thing. Although, I mean, it is important and when you look at some of these backlashes from the public that they get into and different documentaries, it is quite scary with all the data that they collect. But, in the end, I mean, when you need something here and now, you just say fine, whatever. So, it has to be really bad, I think, from my side at least, to not use it.* (Participant 15, Appendix 14, ll. 228-33)

When been asked, whether data privacy and security concern the participants and if these issues can influence their choices between choosing a meeting executed in VR versus other types of remote meetings, following responses were received:

> *[...] whenever you're using any applications, they say we can record you. I've used Google Hangouts and Zoom and I'm not 100% comfortable with it. But it's sort of necessary,*

something that you have to give away to get the advantage of using their technology. If they're complying with GDPR, then I'm happy to go with it. (Participant 2, Appendix 7, ll. 237-41)

I think it's the same; it doesn't matter if it's a VR application or if it's Zoom, Google Hangouts, whatever it is. (Participant 1, Appendix 7, ll. 248-9)

To me, it's the same risk as the other software. But I mean, then, it comes down to, maybe, as well, do you trust Microsoft more than you trust the makers of VR software? (Participant 8, Appendix 10, ll. 340-1)

[...] for example, I don't trust Sony, because they had a substantial data leak. And if I knew that the VR company had a data leak before, then I would probably stay away from it. It is really something that if a big company doens't get their stuff together, then, I wouldn't necessarily trust it. But I mean, viruses [would not influence my decision], no. And hackers, you can't just do so much. (Participant 7, Appendix 10, ll. 343-6)

I mean, a real physical meeting is harder to be hacked, I guess, or a different way to be hacked than virtual meetings. But, I mean, I don't see the difference to other types of meetings, like, over Skype or Teams-calls. The same risk, I would say. (Participant 11, Appendix 12, ll. 269-71)

These responses compare virtual reality to other types of software providing the opportunity for remote meetings. Responses indicate that the risks related to privacy and security, when using VR, are not of the participants' concern. Furthermore, they would consider meetings in VR as reliable as video conferencing when it comes to privacy and security, unless proven wrong, e.g. with data leaks. Technology attorney Teppler (2016) mentions about the risks of hackers getting access to the payment and personal information submitted by the VR user, as the technology is relatively new and still evolving (as cited in McGee, 2016). However, video conferencing tools are being developed as well, and cases of hacking and selling personal data further have been registered, for example, with Zoom (Schroeder, 2020). As also mentioned by many of the experiment participants, the ones afraid of the potential privacy and security threats should rather rely on in person face-to-face meetings with a minimal risk of being listened to. This would also apply for meetings handling sensitive or secret topics:

> *[...] a meeting where [privacy concerns and hacking] would influence, [...] you have it in person. So, you know that it's not going to go out.* (Participant 4, Appendix 8, ll. 283-4)

> *[...] if you talk about, like, you're dealing with a top secret new medication or something, then I think there might, actually, be in person meetings required sometimes for the purpose of not having it go through some technology* (Participant 7, Appendix 10, ll. 326-8)

However, when comparing the security in all possible ways of meeting, the threat of being hacked even in an in person face-to-face meeting exists. Such can happen, for instance, through surveilling a web camera on a laptop present in a meeting, or hacking and listening to a smart phone, which many of the attendees tend to have with them on the table (Appendix 8, ll. 276-8; Fortaleza, 2019). It was also pointed out that different types of data can be legally collected even if meeting face-to-face, especially if travelling for the meeting:

> *[...] overall, I don't think, that [data privacy in VR] would be a problem. It can't replace, really, meetings that require secrecy. But if you compare it to, let's say, it's a normal business meeting, and we're just talking about normal privacy issues. If you travel, I think, you also give a lot of data. I mean, you fly by plane, you pay by credit card, a lot of stuff, you're recorded on a lot of cameras. It might be different data, but overall, I think the amount of data collected is similar when you travel.* (Participant 7, Appendix 10, ll. 330-5)

Even if not travelling for MICE, it is important to note that lots of buildings where such meetings discussing sensitive topics are held, often have CCTV. Interestingly, surveillance through consumption (e.g. credit cards) and CCTV are not frequently pointed out as privacy or security concerns in literature. As suggested by Participant 15: "*[...] if you want to keep a secret or if you want it to be protected from any surveillance, you have to go out, read something on a paper, and then, burn it.*" (Appendix 14, ll. 240-1) In other words, complete security is extremely difficult to ensure, especially in the modern world, where different types of technology have a crucial role. Furthermore, coming into an agreement globally regarding online data protection policies can be a challenge, as policies vary in different states (Henriksson, 2018). Hence, this can make international meetings between two states with different views on data protection policies hard (Appendix 5, ll. 494-7).

To conclude, in contrast to what has been mentioned in the literature on the subject of data privacy concerns in VR, the experiment participants' concerns regarding data privacy and security, as well as

hacking, during the use of VR are minimal, and thus, cannot be considered as an obstacle for choosing virtual reality meetings over meetings done elsewhere. Nevertheless, it is important to specify that participants did not consider VR as a 'safer' option for e.g. video conferencing, but rather on the same level of safety. Hence, virtual reality meetings would not have an 'advantage' either. When taking into account discussions dealing with trustworthy and sensitive topics, neither VR nor video conferencing could not substitute an in person face-to-face meeting, as they are highly involved with technology and could potentially be hacked.

4.1.6 REFLECTIONS ON VR AND LEISURE EXPERIENCES DURING BUSINESS TRAVEL

As described in the literature review chapter 3.1.1, the role of leisure activities in business tourism and during business trips has increased and even become vital. According to Lawson (1982), the motivation for a business trip can be principally to take part in a business or work-related meeting, but business travellers frequently tend to combine leisure interests in between the business activities. Moreover, as mentioned previously, in the recent years, terms such as 'bleisure,' 'bizcation' and 'workcation' have become popular, as many mix business and leisure, e.g. by extending a business trip ("The Rise of the Bleisure Traveller," n.d.). Therefore, we wanted to examine the leisure perspective in business trips and the users' motivations on not being able to do these leisure activities (or doing them virtually) if business meetings are to be in the virtual environment in the future.

It is worth mentioning that COVID might impact the current state and the future of leisure activities in between business meetings, as some places are closed and people should in general avoid going outside or travel and stay at home as much as possible. For instance, typical leisure activities during business trips mentioned by Swarbrooke and Horner (2001), such as incentive travel, leisure activities between meetings or conference sessions, as well as the business traveller bringing family members on business trips, are likely to be reconsidered under the current circumstances. Furthermore, the current global pandemic can potentially change the general perception of travel in a way that more activities are done virtually. For instance, numerous museums have begun virtual tours and online exhibits, so that people can still visit such places even if the place is physically closed (Google Arts & Culture, n.d.) It is worth considering whether such circumstances could change the future of travel into more activities being done virtually even after the pandemic or entirely switching into virtual tourism.

The connection of COVID-19 and the future of tourism will be further discussed in chapter 4.2.2, instead this chapter considers the connection of user perspectives on virtual tourism and the importance of leisure experiences in business tourism in order to scrutinise the potentiality of business tourism as a whole in becoming virtual. We acknowledge that the experiment participants could have been interviewed more precisely on their leisure habits during business trips, so this is where our data collection has a shortage. Nevertheless, the analysis will be done by combining general data on the role of leisure activities in business tourism with the users' motivations in using VR for leisure tourism purposes.

Although Dewailly (1999) suggested in his paper about virtual tourist spaces that "*virtual reality is becoming more important in the world of tourism [...] both as a tool for tourism promotion and as a tourist destination itself*" (p. 41), none of the experiment participants considered leisure tourism activities to be substituted by virtual tourism, unless virtual reality adds something to the experience. For instance, time travel to the history — "*if you want to see Copenhagen 20 years ago, that would be something nice, because you can't see it now*" (Participant 1, Appendix 7, ll. 208-9), or viewing places in VR with unrealistic features, such as zombies — "*maybe I could look at Amalienborg with zombies or add something to it, which only VR can do*" (Participant 7, Appendix 10, ll. 222-3, 238). Moreover, most of the participants would not use virtual tourism solutions to visit places, as it cannot provide all the sensations and the experience would not be realistic enough:

> *I don't know if in tourism it [VR] can be applied, because a holiday is, like, at least for me, when I go to see a place, I also want to feel the vibe, because every city has another vibe. So, I don't think it would be an option for me to do it virtually. I would like to go and see places. Although I really enjoyed that during the quarantine, some museums did that [virtual tours]. So, that was cool, because then it's maybe another thing: I can enjoy watching some paintings or some art. But for visiting a place, I want to be there.* (Participant 5, Appendix 9, ll. 84-9)

> *I don't think you can replace it [travel]. I think it's a fun stunt to do, maybe, marketing-wise, if you were doing, let's say, an exhibition or fairs to give people a five minute glimpse of to be in a place [...] But it's not something that would replace actually going to these places. Because, I mean, there's so many travel experiences that you can't get here.* (Participant 15, Appendix 14, ll. 178-83)

> *[...] in general, no, it [VR] can never replace travelling to a place, it's something different. Like, meeting the locals in person and all these facial expressions and human elements.* (Participant 16, Appendix 14, ll. 188-9)

Virtual reality travel experiences, indeed, frequently "*refer to [360] VR tourism videos made for VR headsets*" ("VR for Tourism," n.d.). Although it was pointed out by literature (e.g. Gaberli, 2019) and many experiment participants that VR could work in museum tours, as seen in the interview quotes above, many consider leisure travel activities to be much more than seeing attractions, e.g. getting in touch with the locals is considered important. Going in line with our findings, some research has been done on VR for tourism purposes, and the results also point out that VR would not be an adequate substitute for tourism experiences:

> *More than three quarters (81%) of adults said VR can't replace travel and almost all (92%) said they would not consider visiting a destination in virtual reality to equate having been to that destination. The majority (90%) said VR lacks the sensory experiences of traveling. More than three quarters (77%) cited local food and almost as many (69%) said meeting new people, according to the study. Other potential downsides of VR cited include smells, sounds and general atmosphere.* (Martin, 2017)

The above-mentioned supports the experiment participants' responses; the virtual experience cannot replace the real. However, participants mention the ability to 'preview' a destination in VR e.g. prior to making travel plans as an advantage (Appendix 9, ll. 213-6; Appendix 12, ll. 186-7). Such tourism marketing with the use of VR has already been adopted by larger companies, e.g. Thomas Cook and Lufthansa (Campbell, 2017; Chen, 2020). Furthermore, virtual travel has been embraced for giving the ability to travel to remote destinations that are hard to access or cannot be visited by everyone, such as the top of Mount Everest (Martin, 2017). Nevertheless, it can be argued, whether gaining access to the destination is part of the overall experience, and therefore, the experience cannot be whole if there is an easy way to it, e.g. Participant 1 mentioning climbing the mountain being part of the Mount Everest visit instead of just seeing the view from the top (Appendix 7, ll. 195-6).

Leisure travel experiences are not available for everyone, for instance, some of the participants mention that VR travel can be an opportunity for those incapable of practicing physical travel, e.g. the elderly or the disabled, who may have obstacles with actual travel (Appendix 10, ll. 240-2; Appendix 11, l. 81; Appendix 14, ll. 184-6). This is also supported by the findings in VR for tourism

research (Martin, 2017). Some VR providers are aware of such obstacles, and, as an example, Silverwear (https://silverwearvr.com/en) provides immersive 360 experiences for retirement homes and the elderly to make interactive travel experiences possible for those who cannot experience the real. However, people with such obstacles are rarely business travellers or doing leisure activities during their business trips, so to avoid turning aside from the main subject of attention, this potentiality of VR travel will not be further discussed in this paper.

Taking into account the ongoing global pandemic, based on the interviews with experiment participants and literature on VR tourism experiences in general, as mentioned above (e.g. Chen 2020; Martin, 2017), it can be argued that leisure activities have not been put on hold for long enough, so that virtual alternatives for such activities could have become popular. People have not 'gotten used to' virtual leisure activities, and therefore, will most likely return to doing such activities after the pandemic, if not already. Therefore, it can be difficult for virtual leisure travel experiences to take over the real experience. Taking also into account the above-mentioned, as well as the recent increase in leisure activities in business tourism (Expedia Group Media Solutions, 2018; Reid, 2019), it can be argued that most business travellers would prefer actual business tourism instead of virtual reality meetings, as virtual reality cannot substitute the leisure aspect in business tourism.

4.1.7 CONCLUDING REMARKS ON THE BUSINESS PROFESSIONALS' REFLECTIONS

On the one hand, most business professionals were positively surprised and considered virtual meetings as an alternative for remote meetings, as it adds to the video conferencing experience. However, it may not add enough value in order to be adopted by most companies when considering the expenses of this type of technology and the required technical knowledge to run the meetings effortlessly. On the other hand, business professionals were not convinced that virtual meetings would be adequate enough to replace face-to-face business communications nor physically visiting places. While the co-presence in the virtual environment adds to the authenticity of the experience, which is also sensed in physical face-to-face meetings, business professionals are still concerned about the lack of personal contact due to being in the form of avatar and not being able to interpret the co-attendees' thoughts when missing facial expressions. Hence, it will rather depend on the meeting, as the above-mentioned factors can be crucial in meeting (potential) partners for the first time but may not matter later on when a personal connection is formed. As mentioned in the previous sections of this chapter, the current state of the world — with the COVID-19 outbreak — may impact the future

of work and business communications, which will be opened up in the following part of the research. These considerations will be brought to the final discussion, where different stakeholders' articulations on MICE in VR with a focus on sustainability will be explored.

4.2 THE IMPACT OF COVID-19 ON BUSINESS TOURISM

The recent outbreak of the newly found virus *SARS-CoV-2,* also called COVID-19, has left the world with a long-lasting impact, not only at a socio-economic ground, but on several other levels. Among those, the tourism sector has been the most hit with the restrictions imposed at a global level, such as travel bans, requirements for quarantine when returning from other countries and the shutting down of restaurants, bars and hotels to avoid large gatherings (Gössling et al. 2020, p. 2). As referenced by the UNWTO, "*a 20-30% decline in 2020 international arrivals […] would translate into losses of tourism receipts of US$300-450 billion*" (as cited in Gössling et al. 2020, p. 10), whereas WTTC declared that there might be a loss of US$2.1 trillion (Gössling et al. 2020, p. 10).

Although many countries were first opening for 'necessary' travel, including business tourism, it is yet to see whether business tourism will recover to the same level, as it was before the pandemic. Our data shows that most of the users think there has been an evident shift, due to the development of the corona pandemic in these months. Even the interviews with virtual reality providers suggest that due to the outbreak of the COVID-19 — and the remote ways of working — the future of business tourism has changed. According to Interviewee 3, "*people got used to travel less, and they have become more lazy, so to say. So, they will prefer to travel less. That's a very common complaint from people who travel a lot and don't enjoy travelling so much.*" (Appendix 4, ll. 96-8) Furthermore, Interviewee 3 points out that once having the right technology to minimise the amount of travel, people and companies will hold on to it even after the pandemic (ibid., ll. 98-9). Although this does not refer only to virtual reality itself, but also to other types of technologies, such as Zoom, Skype, Google Hangouts, etc. The following chapter prospects the future of work in more detail.

4.2.1 REFLECTIONS ON THE FUTURE OF WORK AND BUSINESS COMMUNICATIONS

It is difficult to project a possible future regarding the decision of maintaining online business meetings or a return to the previous normality, with physical meetings. With the changes due to COVID-19 and the virus being an intervention to the 'normal,' many have been forced to switch into

video conferencing and utilise the online meetings. This has formed divisive opinions on the future of work; some see it as an opportunity to make communications easier, and perhaps, to experiment with new technology, while others prefer to go back to regular in-person meetings. For instance, according to Sandre (2020);

> *On one side, companies are considering going fully remote. This week, for example, Twitter informed their team they can work from home "forever." Google and Facebook Google have announced they're going work from home until 2021.*

Such remote work has also increased companies' interest in implementing new technological solutions to make the ways of meeting more productive. The Agarawala (2020), the CEO of Spatial (a software providing meetings in VR), described to have "*about a 1,000% increase*" in their business due to the pandemic (as cited in Houser, 2020). This high number of requests indicate that companies are interested to use VR, perhaps due to the immersive benefit of being more physically present at the office and in a meeting. Interviewee 3 also mentions that "*for people to shift to VR from Zoom, there needs to be something that they can't do on Zoom*" (Appendix 4, ll. 117-8). As per cultural aspect, people would need to physically meet, in order to establish a meaningful relationship. However, given a specific context where it is impossible to meet, i.e. a global pandemic, VR represents a solution to compensate, given its features to replicate human features and behaviour, as it was further discussed in chapter 4.1.3.

Furthermore, as also many of the business professionals have mentioned throughout the interviews, virtual reality might be a possible solution for performing work-related tasks, given the current impossibility to travel. As mentioned by Chen (2020) in her article "Is virtual travel here to stay, even after the pandemic subsides?", virtual reality is still in the early stages, even though in these last years it has developed further than expected due to the advancement of new technologies. Virtual reality still holds countless possibilities, as a support for both at leisure and business level. The participants throughout the different interviews have also expressed different views in regard to this topic:

> *I think as business purpose, VR will be used more and more also after this pandemic situation. Also, because in the future it may cost less for the businesses to buy of VR instead of sending all over the world employees.* (Participant 9, Appendix 11, ll. 137-9)

> *Pandemic has changed everybody's life and I do not believe that everything will turn normal for both social and business aspects. Anyhow, multimedia gear will be used more and more in the future.* (Participant 10, Appendix 11, ll. 140-2)

Participants 9 and 10 both agree on the fact that not only VR, but also other types of gears will become more and more used throughout the next years, even when the pandemic will not represent a threat anymore. Possible solutions also for the recovery plans might vary from incentives to visit different cities as participant 9 suggests, whereas participant 10 thinks that finding a vaccine is the only possible solution. Moreover, it is interesting to see how change management plays a role here; with the intervention to the 'normal,' people have realised that more can be achieved online with less effort. As expressed by participant 1 and 2:

> *But in terms of the permanency of the meetings, I think, it has shifted the mindset of introducing the concept of online meetings and working from home to a lot of people, so, in the future, there will be a lot more these meetings. In-person meetings, it has also opened people's minds to thinking do we really need that meeting.* (Participant 2, Appendix 7, ll. 338-46)

> *And, do I really need to fly around the whole world for this meeting. Yeah, that might change. Not sure, I think, it's not that common yet for business purposes, so it needs still a little bit of time, but it's possible. Because, now, everything went online, like even kids in schools had to do it. So, yeah, that will change a little bit, how we do meetings in general, I would say.* (Participant 1, Appendix 7, ll. 347-50)

As regarding for participants 2 and 1, both agree on the fact that there would not be an extreme necessity to fly for a compulsory meeting, but rather this pandemic allowed the population, as well as the companies, to re-think the role of meetings and its necessities, evaluating alternatives, such as Zoom, VR, XR, etc. According to Interviewee 4:

> *So, one of the funny aspects of COVID, if there could be one, is that everyone was forced to use online services. So, a ton of fields have been totally disrupted, because all of a sudden, especially, people of a certain age and also the people that don't like innovation [...] realised that they weren't given a choice. It's all of a sudden, they realise that with this I get to stay home, I don't need to go into traffic, I don't pollute, I don't need to go to talk to a store clerk*

> *who doesn't want to do his job, and I get my product. So, they're not going back. Because as the saying goes, you can't unring a bell. So, the same will happen in VR in some fields.* (Appendix 5, ll. 245-52)

As seen above, Interviewee 4 believes in the permanency of remote collaboration, as people would realise that it is saving time and resources without cutting on the productivity. Regarding the permanency of VR implemented in some companies, participant 15 believes that the new technology could be a permanent solution rather than people going back to normal ways of meeting:

> *I, definitely, think that it [VR] will stay. Not in the same extent, as it has been during pandemic, because you didn't have a choice. But, as we could see in our company, although we have all the opportunities to meet physically and do the meetings as we could before the pandemic, we still do it online just to include everybody and give people this opportunity. So, I definitely, think you could see some of the same trends with the virtual reality as well, because it has some... fordele [advantages]. [...] because you save time and you can save money. So, once in a while, you would use that option instead of traveling the world just for a meeting or a conference or something.* (Participant 15, Appendix 14, ll. 305-9, 314-6)

Participant 15 also agrees with the other participants in terms of adopting new measures for meetings instead of travelling, has currently more advantages than disadvantages. Although these measures seem to have become quite established due to the recent events, such as the pandemic and the introduction of smart-working, most people still remain within the idea that this type of technology will not last much longer, in particular after the pandemic will come to an end in a few years. An example is Participant 12 that mentions: *"I think people tend to forget easily. So, I think, if we won't have another pandemic, in a year of two, everything will go back to normal."* (Appendix 12, ll. 351-352) The fact that people have always been behaving a certain way, as a rule of habit, seems to have a peculiar influence on the choice between the virtual meeting and a physical one. Possibly, the strong desire to return to the old customs, to give back a sense of normality seems to be a recurrent thought among the participants. Another example are participants 5 and 6, who discuss the unlikelihood of VR becoming a permanent solution for business communications:

> *In this [pandemic], that we are facing now, no. Because, of course, it was something serious and has changed the way we do things, but, again, I wouldn't say that much. Maybe with*

something even more serious with more strict rules, maybe. But, in this one, I wouldn't say so. (Participant 5, Appendix 9, ll. 313-5)

I think the same, I mean, implementing VR as a permanent solution in the pandemic, no. (Participant 6, Appendix 9, ll. 316-7)

These responses further fuel the theory that people want to go back to the old way of doing business and meet that is ingrained as a cultural and societal archetype. Thus, given the very different views from both the providers and participants, it is indeed difficult to identify a common pattern for business communications in the future. However, the divisive opinions on the future of work indicate that there are business professionals willing to remain remote, especially if the meeting is not considered important. Some of these professionals are also intrigued to experiment with new technology in order to make the meetings more productive, which is also indicated by the growing number of collaboration VR purchases. But, there are also ones that prefer to go back to in-person face-to-face interaction and do not see remote collaboration as a permanent solution. These concluding remarks bring us to the next chapter, which will discuss the sustainable considerations on business tourism and the impact of VR business meetings on sustainability.

4.3 Discussion: The contribution of VR in the context of business tourism to sustainability

To begin with, it is important to clarify that our data supported by already existing research shows that virtual reality meetings do not seem to radically change the business tourism industry in the near future. As mentioned previously, the early adopters of the technology are less than ten percent (Appendix 5, ll. 542-3), and it is important to take into account that VR will not be a solution for all industries, as discussed in detail in chapter 4.1.1, e.g. when dealing with new customers and suppliers, or new products and materials. Therefore, the current percentage of companies substituting meetings requiring travel with VR is small. However, people working in the VR industry are positive - although potentially biased - that the industry will keep growing slowly:

I don't think VR meetings are going to become mainstream from one day to another, it will be progressive, like little by little, an exponential growth, and right now, it's growing slowly [...]

VR meetings are still tiny, they have just been born and will grow slowly until the product is compelling enough. So, it will still take some years. (Interviewee 3, Appendix 4, ll. 128-32)

There's a very steady growth, so although people think that there was a hype and now people are not that interested anymore, it's not like that. In fact, it's constantly growing, so it's a very steady growth now. [...] it's predicted by Gardner that, by 2022, 77% of enterprises will be experimenting with XR but it's not for travel necessarily, it's just for their company. And 20% or 25% will have already deployed some kind of XR to production. So, companies are adopting VR and AR very rapidly. (Interviewee 1, Appendix 2, ll. 130-32, 240-3)

In addition to these views regarding the growth of VR, as discussed in chapter 4.2.2, people working in the VR industry believe that those, who have adopted VR during the pandemic, will not be going back to normal ways of meeting even whenever the current extraordinary situation is over. Data presented in the first chapter shows that the experiment participants find lots of opportunities in VR and they are not completely against the idea of VR meetings becoming relevant for them in the future, however, it just does not seem to be compelling enough yet to make a switch. To conclude from all this and to bring to the following discussion, VR meetings can be expected to slowly increase, especially with the restrictions and higher travel costs due to COVID-19. Thus, the following chapters will discuss the contribution of business tourism to sustainability and propose how the increasing use of VR for work and business purposes (read: a world with less business tourism) would impact sustainability. Furthermore, social and economic sustainability in the context of factors — identified by different stakeholders — impacting companies' choice between VR and face-to-face will be discussed.

4.3.1 SUSTAINABILITY IN THE GLOBAL CONTEXT

SOCIAL AND ECONOMIC SUSTAINABILITY

Business tourism has a positive influence on the global economy. In fact, business tourism spending is in average a lot higher compared to average leisure tourism spending: "*business tourism [...] is seen to be the most economically beneficial form of tourism. [...] business tourists, and particularly conference delegates, spend between two and four times as much money as tourists as a whole.*" (Swarbrooke & Horner, 2001, p. 75) Therefore, reduction in business tourism could negatively impact

economic sustainability. The experiment participants mention the following regarding the impact in global employment in the tourism industry:

> *There are pros and cons with it. So, of course, it's good that you don't use all the CO^2 by travelling around, but, in the other way, you can support some societies and some tourism industries that need it. And some countries are really dependent on those kind of economy boosts in that way.* (Participant 3, Appendix 8, ll. 300-3)

> *Definitely a lot of jobs lost in many places.* (Participant 4, Appendix 12, l. 299)

> *[...] that would, of course, be a big hit [for the global tourism industry] if everyone now starts to do virtual reality meetings instead of business travels. But, I don't thing that's realistic.* (Participant 11, Appendix 12, ll. 300-1)

To articulate the significance of tourism industry in the global economy, it covers "*1 out of every 10 jobs in the world*," as well as 10% of world GDP, and the industry provides employment e.g. to many women and young people worldwide (UNPD, n.d., p. 14). It is also important to note that as mentioned in the literature review, many business travellers bring their family members on business trips and these family members count as leisure travellers (Swarbrooke & Horner, 2001). Therefore, if these business trips are alternated by VR meetings, the tourism industry will lose some leisure travellers (the family members coming along on a business trip) as well. Interviewee 3, however, suggests that less time and effort spent on business travel could result in business travellers willing and being able to travel more for leisure purposes (Appendix 4, ll. 191-6). This would also make sense considering the substantiality of leisure activities in business trips. So, this would mean that overall international travel would not be reduced due to decrease in business travel. Nevertheless, as mentioned above, the spending of business and leisure tourists are not comparable, so even if what Interviewee 3 suggested was the case, the economic contribution would still be of negative kind.

SOCIAL AND ENVIRONMENTAL SUSTAINABILITY

As mentioned previously, the terms overtourism and undertourism are highly subjective and debatable, for instance, in terms of how many tourists are too much or too little, and which places can be considered as overcrowded. What was also discussed previously in the analytical part about the authenticity of leisure experiences in virtual reality, we can comprehend that VR could not replace

tourism experiences. The following discussion between participants happened during one of the interviews:

> Participant 7: "*[...] you could take half of the Nyhavn [touring] people and put them in a box and show them Nyhavn in a VR headset.*"
> Participant 8: "*Yeah. But then it might not stop them wanting to go there.*"
> Participant 7: "*I don't think it does, no.*"
> Participant 8: "*But then again, if people are satisfied with it, and then, they say, "no, I don't need to go and see it".*"
> Participant 7: "*Yeah, maybe they are. I wouldn't be. That depends on the individual.*" (Appendix 10, ll. 407-13)

In summary, the participants doubt whether the VR tourism experience would be satifying enough. Research conducted on VR in tourism indicates the same results (e.g. Chen, 2020; Martin, 2017), as discussed in chapter 4.1.6 about business leisure experiences: "*almost all (92%) said they would not consider visiting a destination in virtual reality to equate having been to that destination.*" (Martin, 2017) Hence, virtual reality could not directly make a positive impact on overtourism, and therefore, the society and environment, by substituting the real experience and reducing the number of tourists visiting the actual spot. In fact, according to Dewailly (1999), "*virtual reality seems to promote tourism, rather than discourage it.*" (p. 41) Indeed, one of the potentialities of VR is mentioned to be the ability to present a preview of a tourism destination, and therefore, work as a destination marketing tool. For instance, the following were discussed during the experiment interviews:

> *I guess, you could let people experience the places that have undertourism [in VR], and then, persuade them to go there. Maybe countries could use virtual reality as a marketing tool.* (Participant 8, Appendix 10, ll. 403-4)

> *[...] you can use it as advertisement for the regions that are undertouristic. And yeah, I don't know, how you would keep away people from overtouristic places with virtual reality. [...] it can be part of advertisement for, or against the place.* (Participant 11, Appendix 12, ll. 319-21, 328)

> *[...] I think it would be a cool way to, actually, promote some places, and maybe even increase tourism in some places. And, to be able to maybe take people to more remote places, where*

> *they don't go much and don't hear much [about], or see much about. But then you get an experience like this, where you get the feeling of actually being there, and they might think, well, I would really love to go to this super small isolated Greek island somewhere.* (Participant 15, Appendix 14, ll. 287-92)

As suggested in the quotes above, VR could succeed as a destination marketing tool; VR could potentially showcase, for instance, some areas within a city, and, in this way, distribute the tourism. Some DMOs are already using VR as a way for visitors to find out more about possible points of interest to visit in the city. As an example, Copenhagen Visitor Centre provides free 360 tours in virtual reality in order to inspire the traveller and showcase e.g. the different neighbourhoods ("Welcome to Wonderful Copenhagen 360º," n.d.). Furthermore, travel agencies and airlines, such as Lufthansa, are providing virtual previews of some of the destinations that they offer trips to (Campbell, 2017; Chen, 2020).

Again, this could be topic for a paper on its own, however, it is extremely relevant to business tourism, as business travellers tend to do leisure activities between business-related events (Lawson, 1982; Swarbrooke & Horner, 2001), and the modern business traveller considers leisure activities in business trips important (Litteljohn, 2001; Reid, 2019). Dewailly (1999) suggests that by linking virtual reality with reality sustainability could be better achieved in tourism. Such possibility to view places before making the decision of travelling could positively contribute to the issue of undertourism, if undertouristic destinations provided a 360 preview. However, on a larger scale, when considering entire cities or countries, this may not be extremely relevant to business tourism, as the business traveller rarely decides the destination, and it rather comes to where the work-related purpose for travel is based on. But, when it comes to undertouristic spots in a city, where MICE travel takes place, VR could potentially attract business travellers to visit a less-known attraction. Therefore, by incentivising people to visit an attraction, VR could positively contribute to environmental and social sustainability by advancing smarter and greener cities for both locals as well as tourists (UNWTO & UNDP, n.d.). However, the contribution could also be negative if showcasing an already overtouristic place since VR could suggest people to visit there.

When considering sustainability, the most prominent positive contribution of VR meetings is on the environmental aspect. Without a doubt, the production of CO^2 from methods of transportation will be reduced when using VR to substitute travel for meetings. This is also one of the selling arguments of the application producer:

> *[...] there's like three billion dollars spent each year, I think, globally on business travel, and it's just growing, like business travel is extremely expensive for companies. We're looking into reducing some of this business travel and carbon footprint that it produces, by having some of the unnecessary business travel done in virtual reality. [...] Big corporations were starting to have travel bans, for example, they are not allowed to take the plane as much as they wanted to, because of carbon footprint.* (Interviewee 1, Appendix 2, ll. 206-9, 215-7)

The experiment participants also recognise the environmental value of VR; the saving of CO^2 in the use of virtual meetings is pointed out in many of the interviews (e.g. Appendix 7, ll. 284-5; Appendix 11, l. 117-20; Appendix 12, ll. 222-3). Moreover, the ability to avoid pollution from travelling by airplane, train or car is frequently listed as one of the advantages of using VR in business communications (Johansson, n.d.).

In terms of sustainable consumption and production patterns business tourism contributes negatively. Not only is "*the tourism sector [...] a significant consumer of natural materials and producer of carbon footprint - directly and indirectly through services of accommodation, transport and consumption of food*" (UNWTO & UNDP, n.d., p. 29) but also business tourism can be even less sustainable compared to other forms of tourism in terms of consumption (Gracan, Sander & Rudancic-Lugaric, 2010). In fact, "*[b]usiness meetings and other organised events may often exploit the environment in terms of excessive energy consumption and waste production before, during and after the events [...] by using large amounts of disposable material, [...] spend[ing] huge amounts of electricity and other energy resources to meet the needs of meeting attendees. All this leaves a large amount of waste that negatively impacts the environment.*" (Gracan, Sander & Rudancic-Lugaric, 2010, pp. 337-8) Due to such unsustainable consumption during business tourism events, there is no doubt that using VR for business purposes, and therefore, reduction in business tourism, would positively contribute to responsible consumption.

However, many participants confronted the degree of sustainability in the production and the use of the VR technology:

> *[...] you need all this technology for the virtual reality, which have to be produced, you need the electricity. [...] I think, if you have a computer you have it anyway, but, this device, there's probably a better one to use, and then, you need to invest in that again. That's also taking a*

lot of resources to create this device itself and to have a new one, or have an update. (Participant 1, Appendix 7, ll. 285-6, 289-92)

[...] given the sector [I am] working in, I would ask first, how do they produce them and where do they produce them, like, everything that goes into it. (Participant 4, Appendix 8, ll. 288-9)

I mean, everything that you produce is the trash and the production, CO^2 and electricity. That's the footprint of the thing. (Participant 7, Appendix 10, ll. 386-7)

Neither producers nor people working in the VR industry commented on the sustainability on production of the devices in the interviews. Furthermore, no literature on the production process of the devices could be accessed. Agreeing with the experiment participants' arguments, the sustainability in the production of the VR devices is questionable. What we know, however, is that using the technology for meeting purposes consumes a lot of energy due to being run by a high-performing computer and requiring a proper network as well as hardware. On top of the above-mentioned statements, participant 11 mentions that: "*I don't know how much energy it takes for such a meeting, but it's certainly less than travelling around the world to have a meeting somewhere.*" (Appendix 12, ll. 285-6) In this way, in terms of environmental sustainability, VR can enable sustainability in business meetings when compared to travel for such meetings.

4.3.2 SUSTAINABILITY IN THE COMPANY CONTEXT

When diving deeper into the discussion of how sustainable VR would in comparison to face-to-face meetings end up being, it is crucial to note that it has to do with much more than the technology, environment, and economic benefits. Furthermore, there is much more in consideration in the adoption of VR than the technology and environmental benefits. Focusing on the importance of the social aspect in business meetings, this discursive chapter aims to study *which are the factors impacting companies' choice between VR and face-to-face meetings*.

On one hand, VR could improve cross-borders collaboration, as it enables and makes it easier to meet stakeholders located dispersedly around the world. For instance, participant 11 considers that "*[...] if you, actually, had these virtual meetings, I think they could replace a lot of the meetings and make it easier for people to meet, also, from different countries and time zones and so on.*" (Appendix 12, ll.

114-6) This is consistent with what one of the interviewees working in the field of VR say: "*[...] this solution is very helpful in the time of COVID, because they can share presentations, insights, trainings, modifications to projects with simply putting on the headset, communicate from one office to the other. And I'm not talking about physical distance, I'm talking about internationally; one is in Boston, the other one is in London and the other one is in Paris, they can all communicate*." (Interviewee 4, Appendix 5, ll. 180-4) Based on these examples, it can be argued that VR could enhance international collaboration by making meetings across different time zones possible regardless of the current pandemic situation. Thus, meetings in VR could positively contribute to social and economic sustainability due to the ability to grow the business across borders.

On the other hand, Denstadli and Dripsrud (2010) argue that "*co-presence also signals commitment — by travelling and meeting face-to-face one is investing time and money in the relationship*" (p. 217), as the meeting participants are required at a certain place at a specific time, and in today's highly international world the place can be anywhere globally. Therefore, face-to-face business meetings prove the meeting participants' interest in the other and function as "*arenas for decision making, executing procedures, building and strengthening friendship, judging commitment and so on*" (Urry, 2002, as cited in Denstadli & Gripsrud, 2010, p. 217). Such social relationships go hand in hand with economic resilience, as also discussed in one of the experiment interviews:

> Participant 7: "*I don't know if it [replacing face-to-face meetings with VR] would save a lot of money, because what if your competitor goes there in person and leaves a better impression than you and your crummy VR room? Then you lost money.*"
> Participant 8: "*Yeah, what I mean is, the money that you'd spend on travel that you can save. Business class flights. I know it's a big expense. I think it's upwards of $50 million dollars.*"
> Participant 7: "*It is a huge expense. But then, we'd assume that VR meetings are then the same as going there, and, for me, video conferencing and VR are on the same level. So, we already have a solution and people are still travelling, we could just go for a video conference. So, VR has to add something on top of that. And be kind of equal to physical meetings in order to substitute it. But yes, it's massive, I mean, you pay for dinner and hotel and travelling there.*" (Appendix 10, ll. 275-84)

The discussion above emphasises the significance of in-person meetings and compares the ability to conduct meetings in the virtual environment to video conferencing. Interestingly, Denstadli and Gripsrud (2010) argue that the modern '*communication technologies*,' such as video conferencing,

and today's VR settings, "*provide many of the same features as personal meetings*" (p. 217). Although such solutions are able to transmit the meeting participants' voices, real-time video, as well as '*data collaboration*' including functions i.e. screen sharing (ibid., p. 217), and the adoption of video conferencing, as well as VR, have increased to a significant extent during the COVID-19 pandemic, it is still argued that there are certain social obligations to meet face-to-face. Lassen (2010) explains that "*co-presence is still the fundamental mode of human interaction and socialisation in modern society*." (p. 183) As given as an example by Lassen (2010), "*[...] business meetings often begin with preliminary meetings involving 'small talk' where participants update one another on both work and leisure. Items such as 'Just sent you a message regarding the things which we talked about yesterday' are interwoven with informal remarks about appearance, weather, lunch, plans, overwork, family news, etc.*" (p. 183) Such importance of small talk is also pointed out in one of the interviews:

> Participant 4: "*[...] what I've learned as well is that you need to really know the culture. When I lived in Mexico and had meetings, the first 15 minutes, minimum, had to be just, we're just kind of chilling, we were just talking. And it was just like a must. If you just jumped to it, they would just be annoyed. They wouldn't deal with it.*"
> Interviewer 1: "*So, it's like, kind of impolite, just to go there and deal with the business that actually should be the focus?*"
> Participant 4: "*Yeah, exactly. [...] So, very culturally definitive.*" (Appendix 8, ll. 24-34)

The logic behind the significance of small talk is, according to Boden and Molotoch (1994), that it prepares one for the following business meeting, as it gives hints on what type of person the other attendee is (as cited in Lassen, 2010). Such could be associated with the establishment of trust and partnerships. Trust together with connectivity and dependence are often classified as vital elements to have in a business meeting in order to reach a business agreement and transactions, and such can be best achieved in face-to-face meetings (Boden & Molotoch, 1994, as cited in Lassen, 2010). Face-to-face meetings are described to have the ability to "*transmit equivocal information and build a personal atmosphere*," which are significant in the process of building a partnership (Denstadli & Gripsrud, 2010, p. 217). What is also identified as crucial, is the "*ability to access the other participants eyes, since eye contact enables the establishment of intimacy and trust, as well as fear, power and control.*" (ibid., p. 217) Based on these definitions of compulsions when building a business relationship, establishing trust in the virtual environment can be extremely difficult due to the use of avatars. Salt (2010) argues that "*virtual techniques fail to compensate for the need for face-to-face meetings when complex interactions are involved and when non-verbal clues are important.*"

(p. 120) As presented in chapter 4.1.3, many of the business professionals were concerned about inter-personal inauthenticity in terms of the lack of facial expressions, as well as the inability to see the co-attendee's face and read the 'unspoken' words based on the looks or expressions. Salt (2010) continues by explaining that face-to-face settings are crucial, especially in "*the early stage of a client relationship, when there are high levels of uncertainty on both sides*," which is often the case, for instance, in transactions or establishing contracts (p. 120). Along the lines, Participant 3 explains about their experience in transactions: "*it would, definitely, be more trustworthy for us to have a look into the eyes of, whoever we are transferring this money to*" (Appendix 8, ll. 134-5). Thus, based on the arguments above, establishing a trusting relationship with early-stage partners can be tremendously challenging, if not impossible.

However, after a trusting relationship is formed and once dealing with an already familiar business partner, it could be possible to have business communications in the virtual environment. Participant 4 suggests that "*[... VR has] probably more advantages, when you already have the [business] relationship. [...] when you have already met them, then you can just take some of these [VR] meetings from time to time except when it's a big deal or something, but the first couple of times, you still need that human touch.*" (Appendix 8, ll. 194-7) Participant 3 continues that VR fits better for "*[...] smaller basic meetings. If you have to discuss bigger things, then you need to meet in person again, and use the personal connection that you already have established to your advantage*" (Appendix 8, ll. 200-2). Therefore, it can be argued that VR is not an appropriate procedure to make first impressions but could be used as a way of communication in maintaining business. However, this would be in contrast with the statement by Beaverstock, Derudder, Faulconbridge and Witlox (2010) regarding compulsions of business travel, which include "*maintaining various forms of stretched, social management practices, control and relationships.*" (p. 2)

It is yet to see how the future of business meetings and business tourism will look like due to the current COVID-19 situation and its unpredictable future. Although many have expressed the benefits of remote work and meetings, as presented in chapter 4.2.1, it seems clear that certain parts of business cannot go virtual. For instance, Participant 3 emphasises the importance of maintaining a good business relationship, which goes in line with what Beaverstock et al. (2010) explained above:

> "*[...] we normally do a trip to China once a year to visit our producers, and I think we'll still keep doing that [after the outbreak of COVID-19] in order to keep a good relationship and*

see how things are, and kind of, to look at the fabrics as well, and see how it is done and if everything is working right." (Participant 3, Appendix 8, ll. 42-5)

So, even the outbreak of the COVID-19 virus will not in all cases change in person meetings to virtual ones. In addition to that, the statement above would indicate that advanced communication alternatives, e.g. VR and video conferencing are not enough to keep good relations to the already established business partner. This compliments the previously done research by Orlikowski (2002) and Jones (2007), who discard the conception that remote collaboration software could substitute face-to-face meetings and end the necessity for business tourism (as cited in Beaverstock et al., 2010).

Another question regarding the ability of VR to create a complete experience concerns the quality of life of the meeting attendee. As discussed in the analytical chapter 4.1.6, business tourism is frequently involved with 'informal' leisure activities, "*not only attached to the traditional work life*" (Denstadli & Gripsrud, 2010, p. 235). Beaverstock et al. (2010) confirm that in addition to the importance of co-presence, many do not want to substitute business tourism "*[...] partly because of the blurring of motives and the indistinct boundary between business and leisure involved in that form of travel.*" (Beaverstock, Derudder, Faulconbridge & Witlox, 2010, p. xxiii) Taking into account the significance of leisure activities, this would mean that meetings in the VEs, compared to face-to-face encounters, would not be able to provide the complete experience nor to enable people to connect on the same level. This is also mentioned by one of the experiment participants: "*[...] those sorts of things are just impossible to replicate. [...] if you close a nice deal, you might want to grab a beer afterwards, like, celebrate with them*." (Participant 4, Appendix 8, ll. 183-5) Forming such personal relationships with business partners would be limited in the virtual environment. However, in terms of work-life balance, switching to meetings in VR could have a positive impact, as it can be easier to define the distinction between spare time and on-duty hours. When having dinner or celebrating with a new partner, the distinction is not so evident.

5. CONCLUSION

This research set out to explore virtual reality in the context of business tourism with a focus on sustainability by collecting qualitative data through VR experiments with business professionals and VR industry professionals' insights. In other words, the initial research question developed is:

"*How do different stakeholders identify the use of VR in the context of business tourism?*"

In order to reach conclusions on the initial research question, the sub-questions this research aims at providing a comprehension to are:

"*What are the business professionals' reflections and industry provider insights concerning MICE in virtual reality?*"

and

"*How has the COVID-19 pandemic impacted MICE travel, and what could be expected regarding the future of work and business meetings?*"

The corona-crisis offered the unique opportunity to observe the influence of reduced business tourism and increased use of virtual meetings in MICE purposes, as well as how fast people can switch from one to another without an enormous loss of productivity. Business professionals' reflections on the future of work indicate that remote meetings are functional for some of them, whereas part of the professionals prefer to go back to in-person meetings. According to the interviewees working in the field of VR, the ones deploying the technology are hardly going back to regular ways of meeting.

As of now, sustainability in business tourism is not impacted on a large scale due to business meetings being executed in virtual reality. Instead, what has both positive and negative impact on sustainability, is the current pandemic, as all travel is restricted and cut to minimum. It is yet to see how the future of business tourism industry will look like, and whether business travellers are going back to regular ways of meeting or taking advantage of numerous online tools available, as people working in the field of VR and some of the experiment participants suggest. If this will be the case, or if VR will become compelling enough for a significant percentage of the companies to adopt it for business communications, there will be contributions to sustainability:

- Business tourism, by estimation, covered 13-30% of the overall international tourism before the outbreak of the COVID-19 (Sharma, 2004; UNWTO 2019). Particularly, the economic

benefits of this type of tourism are substantial. Therefore, the financial losses due to VR replacing meetings requiring travel can turn out to be significantly negative.

- In terms of social contribution, reduction in business travel would evidently result in less employment in the tourism industry. Nevertheless, introducing more efficient ways of global collaboration may result in more interest in interaction across borders and, perhaps, working towards a more sustainable future together.
- The environmental aspect in sustainability will rather face positive contributions than negative. Although the production of all the required equipment uses resources and participating in the VR meetings consumes e.g. energy to a high degree, a lot of CO^2 and materials will be saved with reduction in business tourism.

The empirical data indicates that business professionals are hesitant to adopt the VR technology for work and business communications. The initial expenses and knowledge required outweigh the added value provided by VR. The role of co-presence is emphasised in business settings and can be argued to be one of the most important factors in making business successfully. While co-presence achieved in the immersive virtual environment adds to the authenticity of the virtual experience, which is considered significant in business meetings, concerns of the lack of personal contact still exist due to the attendees being in the form of avatars, as well as not being able to interpret non-verbal feelings from each other's faces. These sensations of inauthenticity take even more significant role when forming new business relationships where personal connection establishes trust. Moreover, there are certain social obligations to meet face-to-face, which VR fails to fulfil. Such are, for instance, the investment of time and money on travelling for the meeting, which signals commitment and interest in being there (Denstadli & Gripsrud, 2010). Another vital feature present in face-to-face encounters is small talk before getting into the business in order to build a personal atmosphere and trust (Lassen, 2010). These social obligations are crucial in establishing business partnerships, particularly in the early stage of the relationship when both parties feel uncertainty, which frequently happens in transactions or when signing contracts (Salt, 2010).

At a later stage of a business partnership, some of the business professionals consider meetings in VR as an appropriate solution to reconnect with already existing business partners. Previous research done on the ability of remote collaboration to substitute business tourism (e.g. Beaverstock et al., 2010), however, denies the idea, as arguably, maintaining a good business relationship is a compulsion for business travel. Therefore, virtual reality would not be a socially and economically sustainable solution for companies to do business. Nevertheless, it is vital to mention that the way of

meeting does not need to be an '*either/or*'-situation, choosing between remote and physical, but rather a healthy combination of different methods of meeting providing variation, appropriate to the industry and the (already established) business relationship.

5.1 RECOMMENDATIONS FOR FURTHER RESEARCH

As mentioned throughout the research, virtual reality meetings are still at the early stage. Hence, further research could be done later on when the fate of VR meetings in work and business purposes is more defined and when it can be seen whether the industry has indeed grown, as people working in the field predict. Furthermore, when the times of the pandemic are a bit more certain and it will be easier to articulate anything more definitive about the future of work and business tourism, it could be intriguing to look at how business meeting habits have changed, if at all. On top of that, further research could be done on different age groups in order to find out if professionals' motivations regarding the adoption of VR differ according to their generation, as suggested in Appendix 5 (ll. 551-2). Such a study would be of importance when considering the future of VR.

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APPENDICES