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Virtual World: How can we use VR to increase donation intention to non-profit organizations through customer inspiration?

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Master in Marketing

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Abstract

One of the major challenges non-profit organisations face is to inspire people to worry about issues that seem geographically and emotionally distant. Despite consumers are increasingly adopting lifestyles in which they enjoy enhanced media content, there is still little empirical research on immersive media fundraising campaigns. The aim of this study is therefore to explore how VR can boost inspiration and encourage potential donors to contribute to non-profit fundraisings. This experimental study examined how varying the degree of immersiveness of a short documentary about a remote health issue influenced users reported social and spatial presence, inspiration, and donation intention. The documentary was shown to 150 participants using three different technologies with varying immersion levels (high, moderate, and low). The results revealed that perceived media richness gradually increases the spatial presence of the user. Next, it was tested and successfully verified the positive effect of social and spatial presence on customer inspiration. Finally, it was found that customer inspiration increases donation intention. Specifically, participants of the moderate immersive condition reported a higher inspiration and subsequent intention to donate to the non-profit organisation compared to the ones in the low immersion condition. The results for the highly immersive condition were not conclusive. This study contributes for both researchers and practitioners by identifying the key role of customer inspiration on donation intention and showing that moderate immersion devices such as a mobile HMD, can be an effective fundraising technology capable of driving inspiration and encouraging donation intentions from prospective donors to fundraisings beneficiaries.

Keywords: Virtual reality, customer inspiration, non-profit organisations, social marketing

JEL Classification: M30 – General Marketing, M31 – Marketing

Sumário

Um dos principais desafios que as organizações sem fins lucrativos enfrentam é inspirar pessoas a preocuparem-se com assuntos que lhes pareçam geográfica e emocionalmente distantes. Apesar de os consumidores cada vez mais escolherem utilizar meios de comunicação aprimorados, ainda há pouca pesquisa empírica sobre campanhas imersivas de beneficência. O objetivo deste estudo é, portanto, explorar como a realidade virtual pode impulsionar a inspiração e incentivar potenciais doadores a contribuir para organizações sem fins lucrativos. Este estudo experimental averiguou como é que a variação do grau de imersão de um documentário sobre um problema de saúde remoto influenciou a presença social e espacial, a inspiração e intenção de doar dos participantes. O documentário foi exibido a 150 participantes utilizando três tecnologias com níveis de imersão diferentes (alta, moderada e baixa). Os resultados revelaram que a qualidade do meio de comunicação aumenta a presença espacial do participante. Em seguida, foi verificado com sucesso o efeito positivo da presença social e espacial na inspiração do consumidor. Por fim, constatou-se que a inspiração do consumidor aumenta a intenção de doar. Especificamente, os participantes na condição de imersão moderada relataram maior inspiração e subsequente intenção de doar à organização sem fins lucrativos, em comparação com os da condição de baixa imersão. Os resultados para a condição de alta imersão não foram conclusivos. Este estudo identifica a importância da inspiração do consumidor na intenção de doar e demonstra que dispositivos de imersão moderada são capazes de inspirar e estimular intenções de doar a organizações sem fins lucrativos.

Palavras-chave: Realidade virtual, inspiração do consumidor, organizações sem fins lucrativos, marketing social

Classificação JEL: M30 – General Marketing, M31 – Marketing

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1. Introduction

In the last decade, immersive virtual environments have flourished and marketers started using it in commercial applications. Nevertheless, it is an opportunity to consider these technological innovations a possibility to improve many lives through charitable giving. One of the major challenges facing non-profit organizations is inspiring people to worry about issues that appear geographically and emotionally distant. Hence, online fundraising approaches and particularly virtual reality (VR), have enormous potential for non-profit marketing. Since fundamental health issues, social injustice, and environmental and political problems often do not directly affect those who might have the means to initiate change, non-profit organizations must therefore inspire potential supporters and donors to develop intimate but mostly non-reciprocal bonding with faraway beneficiaries. By using VR in this domain, small individual donors or wealthy philanthropists can safely be confronted and empathize with, for example, the harsh reality of everyday life in war-torn countries or other disadvantaged territories.

Moreover, the number of non-profit organizations is growing rapidly around the world, and this increasingly competitive fundraising environment has prompted non-profit organizations to strengthen their digital marketing capabilities, emphasizing high efficiency marketing approaches. That is why a few non-profit organizations have started using VR technology for fundraising (Yoo & Drumwright, 2018). However, because it is such a hot topic, it still raises multiple questions about its effectiveness.

In that way, the scope of this study will be to explore the relationship between non-profit organisations and immersive fundraising campaigns, namely if VR can increase donation intention to this type of organisations through customer inspiration, among individuals living in Portugal.

1.1 Research Problematic

Recently, there has been an attempt to uncover the benefits of VR and its social applications (Kandaurova & Lee, 2019). Even though two-dimensional (2D) mediums have been around for a long time and continue to remain as primary modes of visual communication and entertainment, VR is a communication medium that provides users with a three-dimensional (3D) virtual environment and is known to provide more immersive media content compared to 2D mediums, which could facilitate compassion and ultimately result in prosocial behavior.

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Thus, there is an enormous potential in online fundraising approaches and particularly in the use of VR (Yoo & Drumwright, 2018).

Due to an explosive growth of digital communication in recent years, non-profit organizations were able to access large markets of stakeholders without incurring the significant costs associated with traditional media (Maxwell & Carboni, 2016). In fact, 86% of American non-profit organisations used some form of online fundraising in 2017 (Nonprofit Research Collaborative, 2017), and 61% of donors worldwide reported that they prefer to give online (Your Public Interest Registry and Nonprofit Tech for Good, 2017). Moreover, the cost of VR technology has recently fallen making it more accessible to the public. Yoo and Drumwright (2018, p. 2) stated that "VR is ripe for investigation as a fundraising technique because it is moving beyond the stage of experimentation to the stage of marketization in the media market". Accordingly, in 2016, Facebook released its Oculus Rift VR headset, in which invested two billion U.S. dollars (Matney, 2017), and technology giants such as Google and Samsung joined the race to fulfil consumer demand and expectations (Kandaurova & Lee, 2019). According to Doyle and colleagues (2016), 25 million people worldwide would own VR devices by 2018. Moreover, studies show that 18–24 aged consumers tried VR more often than any other generation and 46% of those that still have not tried it, are willing to try (YouVisit, 2015 *in* Loureiro et al., 2020). Therefore, the total market size worldwide for virtual environments, namely, virtual, augmented, and mixed reality, is expected to move from 30.7 billion U.S. dollars in 2021 to 296.9 billion U.S. dollars in 2024 (Statista, 2021). Specifically, VR's predicted market size for 2020 was set for 143.3 billion dollars (Statista, 2018), thus showing that VR is a promising technology and that there are new market opportunities to be explored. With this accessibility to VR technology and associated content widening, VR's scope of application to tourism (e.g., Griffin et al., 2017), communication (e.g., Hammick & Lee, 2014), advertising (e.g., Van Kerrebroeck et al., 2016), education (e.g., Merchant et al., 2014), retail (Alzayat & Lee, 2021), and public relations domains (e.g., Hasan & Yu, 2017; Barnes, 2016) has correspondingly flourished.

In this context, Bowman and colleagues (1999, p.1) argue that the main hope for VR is "its useful applications that will benefit people". Among digital media, VR has the advantage of vividly communicating and enabling viewers to interact with distant beneficiaries as if they were actually present with them. This immersive experience is in tune with contemporary fundraising trends whereas (1) donors expect charities to deliver close-to-reality messages to accurately represent their social causes (Bendapudi et al., 1996), and (2) the number of non-profit organizations is rapidly growing around the world (Casey, 2016), which increases the

competition and the adoption of high efficiency marketing approaches between these organizations (Yoo & Drumwright, 2018).

New technologies, such as virtual and augmented reality, could support the creation of visual content to inspire potential donors, therefore, non-profits are encouraged to use engaging imagery (Böttger et al., 2017). In this way, several non-profit organizations such as the United Nations, UNICEF and Amnesty International have been exploring the use of VR in promoting social responsibility and spreading awareness about critical environmental and humanitarian crises (Kandaurova & Lee, 2019). In May 2015, UNICEF Korea was the first among the UNICEF member nations to raise funds for Syrian refugees using VR. This enabled donors to empathize with the refugees' suffering, even though they were unable to visit the refugee camps. Viewers who experienced the VR campaign showed 80% higher participation in donating to UNICEF Korea than those who did not (Kang, 2016 *in* Yoo & Drumwright, 2018).

Despite of that, there is still little empirical research on how VR can boost inspiration and subsequently encourage potential donors to contribute to non-profit fundraisings. Additionally, due to an accelerated lifestyle and the endless availability of options that shortens the customer journey, this moment of inspiration is becoming increasingly important from a marketing perspective (Böttger et al., 2017). Although there are several studies on customer inspiration and its antecedents and consequences among the literature (e.g., Rauschnabel et al., 2019; Böttger et al., 2017; Thrash & Elliot, 2003, 2004), there is still a gap when it comes to explore this construct in a non-profit marketing context. Thus, customer inspiration was defined by Böttger and colleagues (2017, p. 2) as "a customer's temporary motivational state that facilitates the transition from the reception of a marketing-induced idea to the intrinsic pursuit of a consumption-related goal". As such, customer inspiration holds a unique position at the beginning of the customer journey (Lemon & Verhoef, 2016) that can link the activating reception of a new idea, for example through an immersive fundraising campaign, with the intention to pursue the goal of donating to a certain non-profit organisation. Customer inspiration can therefore redirect attention toward exposing prospective donors to new and surprising ideas and serve as means for increasing charitable giving. Thus, this study also aims to add discussion about customer inspiration as a precursor of donation intention to the extant literature and offer a new perspective for marketing managers regarding this topic.

Overall, as previously mentioned, research on the use of VR devices as well as customer inspiration has been conducted in various fields, however, few academic studies have been conducted in the context of non-profit fundraising, which means that little empirical work has explored this topic and therefore there is still a large literature gap. To that end, this dissertation

aims to contribute to the field of non-profit marketing and emerging technologies, namely exploring fundraising with VR through customer inspiration, and allowing social scientists and non-profit marketers to better understand the influential nature of VR and inspiration within a non-profit marketing context. It also aims to provide important managerial insights for media design to enhance the effectiveness of immersive fundraising campaigns.

1.2 Objectives Definition and Research Questions

The main objective of this dissertation is to better understand the influence of immersive technologies, namely VR, and inspiration on donation intentions. Here an emphasis will be placed in exploring the concepts of media richness, social presence, spatial presence, sensation-seeking tendency, customer inspiration, and the subsequent donation intention. This results from the gap in the literature previously identified.

Hence, the research problem reflects on how immersive media technologies can increase donation intention through customer inspiration.

Thus, this study aims to answer the following research questions:

- Can media richness influence prospective donors' sense of presence, and will this relationship be affected by differences in potential donors' sensation-seeking tendency?
- Is the sense of presence provided by different levels of immersion an antecedent of potential donors' inspiration?
- Do potential donors in Portugal feel encouraged to donate to non-profit organisations through inspiration elicitation?
- Can immersion level strengthen the relationship between prospective donors' inspiration and charitable giving intentions?

This will be investigated in order to create empirical evidence and guidelines for non-profit marketers to be able to follow in the future.

1.3 Structure of the dissertation

The present dissertation is composed by six main chapters, following a progressive approach of structured themes that moves from general research of theory to a specific field research.

The first chapter introduces the main subjects, in order to contextualize the readers about this dissertation's theme, as well as identify limitations within the existing literature, clarify the research problem, and reveal the main research questions and objectives to accomplish.

Chapter two focuses on the literature review, exploring the main concepts related to the subject in question. A focus will be on virtual reality contextualization, media richness, presence, sensation-seeking tendency, and customer inspiration. Based on these factors a framework will be developed indicating the interrelation depicted in the literature review.

Further, chapter three approaches the methodology used for this study, through an identification of the appropriate research methods. It is specified the experiment procedures and the structure of the subsequent questionnaire used to gather data, followed by the scales used to measure the constructs under analysis.

Chapter four includes the data analysis of the results collected from the questionnaire, taking in count the hypothesis developed beforehand. Accordingly, the descriptive analysis of the data, the evaluation of the reliability of the scales used to measure the constructs in question and, finally, the test of the elaborated hypothesis, were conducted to establish an insight into the reliability of the framework developed.

In chapter five, the results obtained are discussed, as well as the main theoretical and managerial implications.

Lastly, chapter six clarify the limitations of the study and proposes suggestions for further research.

2. Literature Review

This chapter first highlights media richness theory and the psychological phenomenon of social and spatial presence in immersive media before introducing inspiration as an important precursor of charitable giving. Additionally individual user characteristics' impact on both social and spatial presence, namely sensation-seeking tendency, are discussed.

2.2 Virtual Reality Foundation and Conceptualization

At the end of the 1980s, Jaron Lanier coined the term "virtual reality" to get all his company's virtual projects under a single rubric (Loureiro et al., 2020; Steuer, 1992). Additionally, one of the most important events that marked the beginning of today's VR development happened in 1994, when interactive 3D graphics emerged on Internet with the VR modeling language. This event allowed the web-based VR to become a widespread reality for interactive simulations in diverse areas, particularly for education and gaming (Yoon et al., 2008 *in* Loureiro et al., 2020).

The most popular definitions of VR refer to a particular technological system, which usually includes a computer capable of real-time animation, controlled by a set of wired gloves and a position tracker, and a head-mounted stereoscopic display for visual output (Steuer, 1992). However, it is possible to define VR in terms of human experience without reference to a particular technological hardware; the key for that, are the concepts of presence, i.e., the sense of being in an environment, and telepresence, i.e., the experience of presence in an environment by means of a communication medium. Thus, by employing the concept of telepresence, VR can be defined as a real or simulated environment in which a perceiver experiences telepresence (Steuer, 1992).

For Milgram and colleagues (1994), a VR environment is a completely synthetic world that may or may not mimic the real world and in which the participant is immersed (Loureiro et al., 2019). It allows consumers to have immersive and stimulating different forms of reality and it abstracts the users from their surrounding environment, presenting them with both visual and audio stimuli by using stereoscopic head-mounted displays (HMD) to make them feel in a completely different setting (Hyun & O'Keefe, 2012), with the feeling of being in a real-world environment (Guttentag, 2010). Nevertheless, the real environment and the VR are at the opposite ends of the Reality-Virtuality continuum, where other types of combinations of virtuality and reality exist, namely, augmented reality, spatial augmented reality, augmented

virtuality, and mixed reality environments (Loureiro et al., 2019). Finally, VR is evolving rapidly to become much more integrated with the human body, by allowing virtual experiences to be not only immersive but also interactive and imaginative (Li et al., 2017).

2.3 Non-Profit Fundraising with Virtual Reality

Immersive computer technologies are increasingly being explored as potential means to increase empathy in humankind (Kors et al., 2016). VR technologies, in particular, have been popularly proposed as the "ultimate empathy machines" (Milk, 2015) – primarily because VR has the advantage of vividly communicating and enabling users to interact with distant beneficiaries as if they were physically present with them (Yoo & Drumwright, 2018). Moreover, VR applications have been shown to facilitate prosocial behavior and perspective taking (Asher et al., 2018).

Compared to a static image, due to its immersive nature, VR has the potential to deliver multiple verbal and paraverbal communication cues (e.g., voice volume and inflection, body posture, facial mimics, gestures and attitudes) that people can rely on while interpreting the communicated message (Fabri et al., 1999). These immediate communication cues facilitate users' interaction in a simulated virtual field and can assist in the decision-making process to donate (Kandaurova & Lee, 2019).

When discussing persuasion in a prosocial context, it is useful to move beyond attitudes to see eventual impact on behaviours (Yoo & Drumwright, 2018). To this end, Yoo and Drumwright (2018) investigated the usefulness of VR as a digital fundraising tool. They compared the media effects of experiencing the same fundraising video on two different devices, namely a head-mounted VR and a tablet, and found significant positive effects of the VR device on donation intention, meaning that fundraising communications using VR led to higher donation intentions than using tablets. Therefore, non-profit marketers can use VR devices to provide realistic, vivid, and interactive content that creates social presence for potential donors (Yoo & Drumwright, 2018). Likewise, Hung and Wyer Jr. (2009) suggest that a rich media channel such as VR will have a positive effect on intentions to donate, and Ma (2019) found that stories presented in immersive virtual (vs. traditional mediated) environments led to a higher level of spatial and social presence, which intensified users' transportation and identification. The enhanced transportation led to less counterarguing and then promoted prosocial attitudes (Ma, 2020). Recently, a few non-profit organizations have experimented VR

campaigns in fundraising. For example, in 2015, UNICEF Korea raised funds for Syrian refugees using VR, to enable people to empathize with the suffering of the refugees even though they were physically distant. Viewers who experienced the VR campaign showed 80% higher participation in donating to UNICEF Korea than those who did not (Kang, 2016).

2.4 Media Richness Theory: Vividness and Interactivity

According to Ulrich (2012), visual delivery of information can influence people by evoking emotions through powerful images. The more vivid a virtual world is, the more it feels like an actual experience, and the more directly it influences emotions (Ulrich, 2012). Due to its rich and immersive nature, VR provides users with a more direct and first-person narrative experience when compared to 2D mediums (e.g., tablet, desktop) facilitating multiple modes of empathy. This is clarified by Daft and Lengel's (1986) Media Richness Theory (MRT), which assigns a certain level of richness to various media (i.e., classifies them into "rich media" and "lean media" categories, depending on their ability to convey meaning when executing communication tasks) and argues that richer mediums of communication lead to a better understanding of messages and tasks (Daft & Lengel, 1984; Kandaurova & Lee, 2019).

The MRT assumes that the richest medium of communication is face-to-face communication, in which message senders and receivers communicate directly in a physical space (Daft & Lengel, 1984). Thus, much like face-to-face communication, VR provides a realistic and satisfying experience with practically immediate feedback in response to users' actions in an immersive and interactive environment. Depending on the movement of the user's head, hands, or feet, through various body sensors, VR is able to provide different multimedia content, thereby offering an experience that very closely resembles face-to-face communication (Yoo and Drumwright, 2018).

Therefore, vividness and interactivity are important factors that lead to individuals' positive emotional responses through media richness (Jiang & Benbasat, 2007). Vividness refers to the media device's technical ability to create a rich environment (Jiang & Benbasat, 2007), that clearly evokes colourful and well-defined mental images, such that the more mental images are vivid, the more they are perceived as real (Iachini et al., 2019). Additionally, in a virtual and immersive environment such as VR, individuals perceive the information to be fresh and novel stimuli because it is vivid, thereby enabling them to have a deeper experience (Yoo and Drumwright, 2018). Ramirez Jr. and Burgoon (2004) demonstrated that user experience is more

vivid when communicating in a multimodal environment such as VR that delivers visual, auditory, and contextual information together, than in an environment that is not multimodal. Furthermore, interactivity is defined as "the degree to which a user can transform the form and content of the mediated environment in real-time" (Fortin & Dholakia, 2005, p. 86). As such, VR's richness has the capability of increasing presence, making the user feel more in tune with the virtual environment (Kandaurova & Lee, 2019). Thus, the effect of media richness is not only limited to the cognitive responses of users, such as focused attention (Hoffman & Novak, 1996) and understanding the information transmitted (Suh & Lee, 2005), it can also induce positive emotional responses (Novak, Hoffman, & Yung, 2000). Consequently, positive emotions, such as inspiration and satisfaction with the media experience, obtained through new immersive media such as VR, can lead to higher persuasion effects (Yoo and Drumwright, 2018).

2.5 Presence and Immersive Technologies

Presence has been defined as the sense of being in an environment (Steuer, 1992; Ma, 2020). It refers not to one's surroundings as they exist in the physical world, but to the perception of those surroundings as mediated by both automatic and controlled mental processes (Gibson, 1979). Thus, presence is a psychological rather than a technological variable (Westerman & Skalski, 2010; Pressgrove & Bowman, 2020). However, when perception is mediated by a communication technology, one is forced to perceive two separate environments, simultaneously: (a) the physical environment in which one is actually present, and (b) the environment presented via the medium. The term telepresence can be used to describe the experience of presence in an environment by means of a communication medium. Specifically, presence refers to the natural perception of an environment, and telepresence refers to the mediated perception of an environment (Steuer, 1992). In other words, presence is not automatically given to users through technology, but rather technology provides an opportunity for it – the feeling of presence itself is a perception (Pressgrove & Bowman, 2020). Previous studies have demonstrated that presence can be generated by media richness (Steuer, 1992; Kandaurova & Lee, 2019). Moreover, there is a wide spectrum of antecedents to presence that goes from traditional media (e.g., television and movies) – which induces feelings of presence by immersing users in a narrative world (Busselle and Bilandzic, 2009; Green et al. 2004) – to emerging interactive media environments – which presents many features in interface design

with the ability to affect users' feelings of presence, including immersive 3D virtual reality (Jin, 2013). This sense of "being there", can therefore be induced by VR (Biocca, 1997; Lee, 2004).

Finally, there are two distinct, but related, types of presence that are core psychological mechanisms that mediate the effects of immersive virtual environments on persuasive outcomes, namely, spatial presence and social presence (Ma, 2020). Ma (2020) found that in an immersive storytelling experience with greater immersion, users are more likely to be transported to the story through the perception of being present in the story world (i.e., spatial presence) and that, similarly, users are more likely to identify with the story character when they have a greater perception of sharing the same space with that character (i.e., social presence; Ma, 2020).

2.5.1 Spatial Presence

Spatial presence is the feeling of being in a real physical environment and a perceptual response to the media systems (Steuer, 1992; Pressgrove & Bowman, 2020). People can experience spatial presence in nonnarrative settings as it does not require a story plot or a media character to produce it (Ma, 2020). This sense of spatial presence is an important mechanism that drives social influence and persuasion in immersive virtual environments (Sundar et al., 2017), and it has a significant indirect effect on prosocial attitudes (Ma, 2020).

Breves (2020) found that the level of technology's immersiveness gradually increases the spatial presence, empathic prosocial interaction and issue involvement of the user (Breves, 2020). Moreover, several researchers have proposed that users' elevated feelings of empathy are due to their sense of being there (e.g., Bindman et al., 2018). Consequently, devices that enable high levels of spatial presence, such as VR, should be better suited to generate situational empathy (Breves, 2020). However, Pressgrove and Bowman (2020) found that while immersive technologies are well equipped to facilitate spatial presence, they are ill equipped to facilitate feelings of "being in a (mediated) story". As such, these technologies alone have no appreciable impact on narrative engagement and thus, attitude or behavioral intentions. Their findings suggest that telling engaging narratives, regardless of the medium used to deliver those stories, is more critical than using cutting-edge immersive technologies (Pressgrove & Bowman, 2020).

2.5.2 Social Presence

Social presence is the perception of having real interactions and being aware of others, even while immersed in a digital experience (Steuer, 1992; Pressgrove & Bowman, 2020). It encompasses the feeling that the user is socially and emotionally interacting with others, creating the sense of an intimate relationship, and it is based on the user's perception of a high degree of similarity between mediated communication with others and meeting those individuals directly (Yoo & Drumwright, 2018). In immersive virtual environments, users experience social presence through their interactions with a virtual character or the mere perception that they exist in the same place (Ma, 2020). It has been shown that social presence facilitates attitudinal and behavioral change. Moreover, interactive (vs. non-interactive) virtual characters increase the sense of social presence, thus influencing attitudes and behavioral intentions (Skalski & Tamborini, 2007).

Furthermore, VR is likely a powerful tool to enhance social presence as it enables real-time communication and interaction (Fortin & Dholakia, 2005). Yoo and Drumwright (2018) found that social presence was significantly greater with a VR medium than with a tablet, and successfully verified the mediation effect of social presence on donation intention. As such, social presence closes the social and psychological distance between the prospective donors viewing a VR fundraising campaign in one location and the beneficiaries of the funds in another different location (Yoo & Drumwright, 2018). Accordingly, Kandaurova and Lee (2019) found that it is possible to use VR to enhance empathy and social responsibility due to the level of media richness and the augmented social presence provided by VR, as users viewing content via a VR medium reported to feel more empathetic and responsible towards a social cause. Moreover, the researchers also found that users viewing content via a VR medium indicated higher intentions to donate (Kandaurova & Lee, 2019).

Finally, as discussed above, given the fact that media richness has the capability of making the user feel more in tune with the virtual environment and, therefore, increase presence (Kandaurova & Lee, 2019), the following hypotheses were developed:

Hypothesis 1: *Perceived vividness positively influences both (H1a) social presence and (H1b) spatial presence.*

Hypothesis 2: *Perceived interactivity positively influences both (H1a) social presence and (H1b) spatial presence.*

2.6 Sensation-Seeking Tendency

In situations that create arousal, such as new and complex environments (e.g., VR), some individuals prefer to have high levels of stimulation and arousal, while others prefer to have low levels (Zuckerman, 1994). This preference of an individual regarding the level of sensory stimuli is called sensation seeking tendency (Kandaurova & Lee, 2019). Sensation seeking is therefore a personality trait that reflects an individual's desire to purposefully seek novel, exciting, varied, and intense experiences (Zuckerman 1994; Perse, 1996). Generally, individuals who score highly in sensation-seeking actively accept and pursue new and intense stimuli that excite the senses (Mittelstaedt et al., 1976). Thus, high sensation seekers tend not only to have needs for complex and adventurous experiences but also require stimuli that arouse strong emotional reactions (Park & Stangl, 2020).

Extant research has indicated that high sensation-seekers are more attentive towards alternatives and have an inclination towards innovation adoption as compared to low sensation-seekers (Kim et al., 2017). Moreover, new and innovative media technology, such as VR, provides opportunities for high arousal and stimulation (Weisskirch & Murphy, 2004). In addition, VR is considered a new technological innovation that provides users with an immersive and vivid environment (Vishwakarma et al., 2020). In a non-profit fundraising context, this may help potential donors to feel different kind of sensations as they explore unfortunate crisis that the donation beneficiaries are facing, such as poverty, illness, natural disasters, or even war, through VR in a virtual environment. Accordingly, Yoo and Drumwright (2018) verified that a user's sensation-seeking tendency served as a moderator when the device type influenced donation intention, and that the media effects of VR were stronger for high sensation seekers than for low sensation seekers (Yoo & Drumwright, 2018). Therefore, high sensation seekers can be expected to be more receptive to rich sensory experiences provided by new media technology and to be more motivated by the highly arousing messages provided by VR than low sensation seekers (Kandaurova & Lee, 2019).

Additionally, Sacau and colleagues (2008) stated that individual differences play an important role in affecting the varying levels of presence that media users can experience. These individual differences refer to individual variation within user's personal characteristics, ranging from psychological factors, such as, personality, cognitive abilities, or sensation-seeking tendency, to demographic factors, such as, age or gender (Benyon et al. 2001). Therefore, since presence is a subjective mental phenomenon, psychological factors must play a fundamental role in inducing it (Sacau et al. 2008). Likewise, Kober and Neuper (2013) stated

that individual differences can reveal different manifestations for presence experience. Accordingly, high sensation seekers are better able to focus their attention to a particular media stimulus than low sensation seekers, and therefore they may experience a higher level of presence (Laarni and colleagues, 2004).

Although technological immersiveness is often seen as the main predictor of presence and the subsequent involvement in the virtual environment (Slater, 2003), as mentioned above, some studies have shown that there might be individual differences that can generate higher levels of presence (e.g., Shin, 2018; Shin, 2019). Steuer (1992) proposed that the capability to feel presence depends on the interaction between individual factors and technological variables (e.g., interactivity and vividness). Likewise, Jin (2013) suggested that individual difference factors, such as users' sensation-seeking tendency, can function as an independent variable or moderator in the phenomenon of presence. Therefore, understanding how technological and psychological factors may influence the sense of presence is important for both theoretical and practical purposes (Iachini et al., 2019). In line with this previous research, the present study explores participants' sensation-seeking tendency as a moderator of the effects of media richness, such as perceived interactivity and perceived vividness, on feelings of both social and spatial presence. Therefore, the following hypotheses were developed:

Hypothesis 3: *Participants' sensation-seeking tendency level moderates the effect of perceived vividness on both (H3a) social presence and (H3b) spatial presence.*

Hypothesis 4: *Participants' sensation-seeking tendency level moderates the effect of perceived interactivity on both (H4a) social presence and (H4b) spatial presence.*

2.7 Customer Inspiration

Inspiration is an experience with which we are all familiar, and therefore most people can easily indicate whether they are inspired or not. However, it is challenging to explain what inspiration really is or how it was triggered (Rauschnabel et al., 2019). In extant literature, the general construct of inspiration has been described as an intrinsic motivational state activated by an external trigger that facilitates new possibilities and compels individuals to bring ideas into fruition (Oleynick et al., 2014; Thrash et al., 2014). More recently, Böttger and colleagues (2017, p. 117) conceptualized inspiration in the marketing context and defined customer inspiration as "a customer's temporary motivational state that facilitates the transition from the

reception of a marketing-induced idea to the intrinsic pursuit of a consumption-related goal".
This definition is focused on customers as the recipients of inspiration, on stimulating ideas
triggered by a conscious marketing effort, and on consumption-related goals, such as
purchasing, engaging with a brand, or donating. Thereafter, customer inspiration is evoked by
an external source and is connected to the realization of new ideas, leading to emotional,
attitudinal and behavioral consequences, such as donation intention (Thrash & Elliot, 2003,
2004; Böttger et al., 2017).

Additionally, Thrash and Elliot's (2003) tripartite framework of inspiration comprises three
core characteristics: epistemic transcendence (i.e., the recipient has gained an awareness toward
new or better possibilities), evocation (i.e., inspiration is spontaneously evoked by an external
source rather than willingly initiated by the recipient), and approach motivation (i.e., the
recipient feels compelled to take action). Corresponding to this tripartite framework, Thrash
and Elliot (2004) further proposed that a full episode of customer inspiration involves the
combination of two distinct component processes, including:

1) an *inspired-by* component, that is an activation state in which the recipient gains
   awareness of new or better possibilities that one would not have recognized by one's
   own (i.e., transcendence and evocation; Thrash & Elliot, 2004). This inspired-by state
   relates to the reception of a marketing-induced new idea and the shift in customer
   awareness toward new possibilities, which is often described as an "Aha!" moment of
   realization and insight (Böttger et al., 2017).

2) an *inspired-to* component, that is an intention state in which the recipient is motivated
   to take action on newly gained awareness (i.e., approach motivation; Thrash & Elliot,
   2004). This inspired-to state relates to the intrinsic pursuit of a consumption-related
   goal, where customers experience an urge to actualize the new idea (e.g., by purchasing
   or donating; Böttger et al., 2017).

Importantly, based on the transmission model of inspiration, in which the process of
inspiration is broken down to include an inspired-by condition that temporally precedes an
inspired-to condition (Thrash et al., 2010), Böttger and colleagues (2017) demonstrated that the
two customer inspiration components are causally linked, such that when consumers are
inspired by an external source that raises awareness of new or better possibilities (i.e., a
marketing-elicited idea), they are subsequently inspired to actualize this new idea (Böttger et
al., 2017). In this way, firstly, a state of inspiration can be evoked by an external stimulus (e.g.,
VR fundraising campaign) when customers seek and are receptive to new ideas (e.g., donating).
Secondly, inspiration involves a motivating aspect that serves as a stimulus to change a routine

consumption practice (Böttger et al., 2017). Therefore, customer inspiration is the moment of sudden realization, insight, recognition, or comprehension, where prospective donors can suddenly discover a new reality and a way of donating to the cause (Oleynick et al., 2014; Thrash et al., 2017), that promotes the transformation from an acceptance of a marketing-induced idea into the quest of a goal, such as the intention to donate (Thrash & Elliot, 2003). However, although inspired-by and inspired-to components may be perceived as a causal chain, since they are distinct processes, one may occur without the other (Böttger et al., 2017; Shiota et al., 2017).

This notion is in line with Gollwitzer's (1990) theory of action phases, which divides the decision-making process into a pre-decision phase of deliberation (i.e., goal setting) and a post-decision phase of implementation (i.e., goal striving). While the inspired-by state is part of the deliberation phase, the inspired-to state marks the transition to the implementation phase (Böttger et al., 2017). As such, customer inspiration holds a unique position at the very beginning of the customer journey (Lemon & Verhoef, 2016), between the reception of a marketing induced idea and the intrinsic pursuit of a consumption related goal (Böttger et al., 2017).

Moreover, inspiration changes existing views and perceptions, and therefore it can act to transmit or mediate between antecedents and consequences (Thrash et al., 2010; Rauschnabel et al., 2019). In this way, Böttger and colleagues (2017) classified established constructs of customer inspiration as either:

   a) antecedents – the emergence of inspiration depends on both the presence of an inspiring source (e.g., print ads, novel product assortments, VR campaigns, in-store presentations, personalized messages) and the individual characteristics of the recipient of inspiration (e.g., sensation-seeking tendency; Thrash & Elliot, 2003, 2004; Böttger et al., 2017), or
   b) consequences – customer inspiration leads to emotional, attitudinal, and behavioral consequences. In the marketing domain, inspiration prompt to an intrinsic motivation to actualize a new idea (e.g., donation intention), and the resulting behavior depends on the content of this new idea (Thrash et al., 2010; Böttger et al., 2017).

Concerning the antecedents of customer inspiration, scholars propose that due to new technologies the list of inspiring sources is constantly expanding (Böttger et al., 2017) and recent research has suggested three most inspiring source characteristics, which include the provision of inspirational content through a new idea, appeals to use one's imagination, and elicitation of an approach rather than an avoidance motivation (Böttger et al., 2017). Therefore, new technologies, such as virtual and augmented reality, could support the creation of visual

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content to inspire customers (Böttger et al., 2017). In a non-profit marketing context, a rich media such as VR is then considered an inspiring source. Since imagery processing may foster inspiration, the characteristics associated with the media (e.g., level of immersiveness, vividness, interactivity, generating feelings of presence) may predict the frequency and intensity of prospective donors' inspirational experiences (Thrash & Elliot, 2003; Böttger et al., 2017).

As discussed above, inspiring content exposes customers to new possibilities and ideas which they might find exciting but previously unaware of (Kaufman, 2011). Recent research indicates that visual contents inspire over 75% of consumers to make purchases (Chamberlain, 2017 *in* Izogo & Mpinganjira, 2020). In addition, previous research has shown that the use of negative emotions such as sadness in donation appeals can make individuals empathetic towards the unfortunate situations facing the donation beneficiaries (e.g., poverty, illness, natural disasters, war), increasing their tendency to donate (Bagozzi & Moore, 1994; Fisher et al., 2008). Liang and colleagues (2016) found that not only negative emotions (e.g., sadness) but also discrete positive emotions (e.g., strength) are key to explain prospect donors' inspiration to donate to charity. Thus, the appraisal of a VR fundraising campaign that stimulates emotions can evoke inspiration as a psychological response (Liang et al., 2016).

Furthermore, because inspiration is evoked when an external stimulus leads to the intrinsic pursuit of a consumption-related goal, such as donation intention (Böttger et al., 2017), Rauschnabel and colleagues (2019) argue that it may be difficult to generate inspiration without a sufficient level of realism, suggesting that the richness of the experience will provide more opportunities for individuals to be inspired (Herhausen et al., 2019). In addition, it has been shown that VR devices provide realistic, vivid, and interactive content that creates both spatial and social presence (e.g., Yoo & Drumwright, 2018; Breves 2020). Based on this reasoning, and despite there is still little research examining the role of presence in creating inspiration, it is expected that higher levels of social presence as well as spatial presence will be associated with customer inspiration. Additionally, as discussed above, this study hypothesises that, being inspiration the moment of sudden realization where prospective donors can suddenly discover a new reality that promotes the transformation from an acceptance of a marketing-induced idea into the quest of a goal (Thrash & Elliot, 2003), customer inspiration will therefore increase donation intention. Finally, it is hypothesised that, as VR can support the creation of visual content to inspire customers (Böttger et al., 2017), a fundraising campaign's immersion level will gradually strengthen the relationship between both social and spatial presence and

customer inspiration, as well as the relationship between customer inspiration and charitable giving intentions. Therefore, the following hypotheses were elaborated:

Hypothesis 5: *Social presence has a positive effect on customer inspiration.*

Hypothesis 6: *Spatial presence has a positive effect on customer inspiration.*

Hypothesis 7: *The fundraising campaign video's immersion level moderates the effect of social presence on customer inspiration.*

Hypothesis 8: *The fundraising campaign video's immersion level moderates the effect of spatial presence on customer inspiration.*

Hypothesis 9: *Customer inspiration positively influences donation intention.*

Hypothesis 10: *The fundraising campaign video's immersion level moderates the effect of customer inspiration on donation intention.*

2.8 Conceptual Framework and Research Hypothesis

Together with the findings from the literature review and the initial objectives for this dissertation, a conceptual framework was developed to display the assumed interaction between the constructs. An a priori assertion was considered that a serial causal chain should be observed in that media richness should increase both spatial and social presence, which would in turn boost inspiration and thus encourage donation intentions. Therefore, the current framework proposes that media richness factors, namely perceived vividness and perceived interactivity, will influence spatial presence and social presence, and that further, participants' sensation-seeking tendency will moderate these relationships. Additionally, both spatial and social presence will influence customer inspiration, which, in turn, will have an impact on donation intention. These latter relationships will all be moderated by the immersion level. From this framework presented in Figure 2.1, ten hypothesis were formulated.
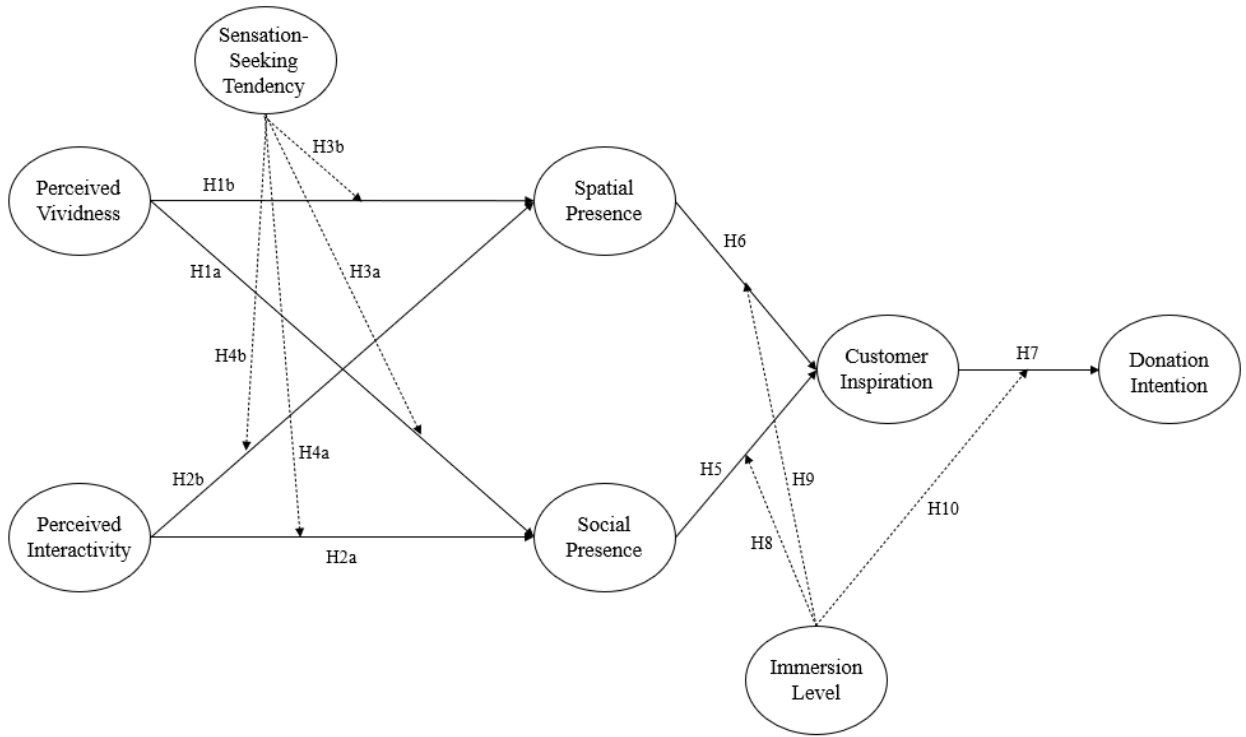
Figure 2.1: Conceptual framework.

Source: Author's own creation

Based on the conceptual framework, attained through the literature review, the following hypotheses have been proposed:

Hypothesis 1: Perceived vividness positively influences both (H1a) social presence and (H1b) spatial presence.

Hypothesis 2: Perceived interactivity positively influences both (H2a) social presence and (H2b) spatial presence.

Hypothesis 3: Participants' sensation-seeking tendency level moderates the effect of perceived vividness on both (H3a) social presence and (H3b) spatial presence.

Hypothesis 4: Participants' sensation-seeking tendency level moderates the effect of perceived interactivity on both (H4a) social presence and (H4b) spatial presence.

Hypothesis 5: Social presence has a positive effect on customer inspiration.

Hypothesis 6: Spatial presence has a positive effect on customer inspiration.

Hypothesis 7: Customer inspiration positively influences donation intention.

Hypothesis 8: The fundraising campaign video's immersion level moderates the effect of social presence on customer inspiration.

Hypothesis 9: The fundraising campaign video's immersion level moderates the effect of spatial presence on customer inspiration.

Hypothesis 10: The fundraising campaign video's immersion level moderates the effect of customer inspiration on donation intention.

3. Methodology

3.1 Research Approach

This chapter presents the methodology followed to achieve the main objectives of the study as well as to verify the previously announced research hypothesis. Moreover, the aim of this study is to understand the relationship between the use of a virtual environment such as VR, and the subsequent intention to donate to non-profit organizations elicited by inspiration. Thus, in order to accomplish this proposal, a literature review was developed to get a deeper understanding on immersive virtual environments, more specifically VR, and on what drives donation intention.

In that way, to conduct the study taking into account the proposed theoretical framework previously presented, the hypotheses development and testing were based on a priori assertion that a serial causal chain should be observed (Pressgrove & Bowman, 2020) in that (a) VR should increase both spatial and social presence, which would in turn (b) boost customer inspiration and subsequently (c) encourage donation intentions. A quasi-experimental between-subjects design was implemented to verify the research hypothesis. The process under which this experiment was developed will be further explained in this chapter. A quantitative method was followed so the necessary data could be collected through a final questionnaire which was delivered to the participants after they underwent the experiment (see Appendix A).

3.2 Research Design and Stimulus

The study incorporated a three group between-subjects experiment with the immersion level as moderator variable. Therefore, three different conditions for the VR experience were created, operationalizing three levels of immersion (high vs. moderate vs. low immersion). To this end, the participants either watched the stimulus passively on a computer desktop (low

immersion, "LI"; n = 46) or in two different head-mounted displays (HMDs). The desktop condition can be understood as a control group in which participants passively watched the video and did not interact with the 360º technology. A mobile HMD with an iPhone 11 was used in the moderate immersion condition ("MI"; n = 47), and the Oculus Quest was employed in the high immersion condition ("HI"; n = 49). The detailed technological specifications for each device are displayed in Table 3.1.

The short documentary "Under the Net" was selected as the stimulus. The video tells the story of Amisa, an 11-year-old girl who lives in the Nyarugusu Refugee Camp, in Tanzania, and is exposed to the grave danger of malaria after escaping from the violence in Congo. Struggling to survive each day, with no protection from mosquitoes that carry malaria at night, the viewer experienced Amisa's life through her eyes. Hope abounds as her family moves into a new home, receives treatment for malaria, and then she and her siblings prepare to start school – none of which would be possible without the life-saving protection of bed nets (United Nations Foundation, 2017a). The United Nations Foundation asks viewers to send money at the end of the video to help prevent the disease from spreading. This short documentary was named "Best VR Documentary" and has raised impressive funds (United Nations Foundation, 2017b).

Table 3.1: Technological specifications of the media devices.

Media device	Weight (g)	Screen size	Resolution	Field of view	Frame rate
Standard computer screen	2200	14"	1600 x 900 pixeis	-	60hz
Woxter Neo VR1	210+194	6,1"	1792 x 828 pixeis	60º	60hz
Oculus Quest	571	-	1440 x 1600 pixeis per eye	90º	72hz

Source: Author's own elaboration.

3.3 Procedure

The experiment took place between the 26th of May and the 24th of June 2021, and it was conducted in three different places depending on the condition to which the participants were assigned. Participants assigned to the LI condition participated remotely from their homes, due to Covid-19 restrictions and to avoid unnecessary personal contacts, while participants assigned to the MI and HI conditions participated in person at Iscte - Instituto Universitário de Lisboa.

Specifically, the HI condition was conducted at Iscte's Mixed Reality Lab and the MI condition was conducted in the study room or in other quiet rooms in Iscte.

Nevertheless, under all three conditions, participants were briefly explained the purpose of the experiment as a study of user experience using new immersive media devices. The true purpose of the study was concealed to minimize participant bias, which can occur when the participant is aware of the real purpose of the study and reacts accordingly (Yoo & Drumright, 2018; Breves 2020). After signing the informed consent, participants responded to an initial questionnaire measuring sensation-seeking tendency, and inquiring about immersive media usage (e.g., "Have you ever used a VR device?") and basic socio-demographic information. In an effort to simulate a real-world setting, the fundraising VR stimulus of Nothing but Nets campaign from the United Nations Foundation, entitled "Under the Net", was used. This short documentary was also available in a 2D format. Participants watched the eight-minute fundraising VR video using a randomly assigned media device. Sample frames from the video are presented in Figure 3.1.

A five-minute training session on basic VR device usage was provided for participants assigned to the MI and HI conditions who were using a VR device for the first time. On one hand, once the video was ready, those in the MI and HI conditions put the glasses on (i.e., the mobile HMD and the Oculus Quest, respectively) and were able to experience the image moving according to the movement of their heads when watching the VR video. The participants watched it standing up so they could look and move around the Nyarugusu Refugee Camp. Once the ending credits started to appear, the video ended and they would remove the glasses. On the other hand, participants assigned to the LI condition passively watched the video and did not interact with the 360º technology.

After watching the eight-minute VR fundraising video, participants in all three conditions completed a final questionnaire handed in a digital format. The questionnaire took about seven minutes to be filled and consisted of several questions, in which the participants reported how well they understood the video in English, followed by their level of perceived vividness, perceived interactivity, both spatial and social presence, inspiration, and finally, they were asked about their intention to donate to the Nyarugusu Refugee Camp and the Nothing but Nets campaign from the United Nations Foundation. Both parts from the questionnaire are presented in Appendix A. Finally, in a debriefing session, participants were told the true purpose of the experiment.

Figure 3.1: Sample image frames from the documentary "Under the Net".

3.4 Participants

The sampling method chosen was the non-probability type with a convenience approach. In this case, it is the researcher who controls the respondents, meaning that the sample is more subjective, limited and it may be influenced by situational factors (Sarstedt & Mooi, 2014). Thus, 150 individuals who are currently living in Portugal participated in this experiment; therefore, this study includes not only Portuguese individuals but also foreign individuals who are settled in Portugal. As further explained, after adjusting control variables and outliers, only 142 responses were considered valid. Firstly, two responses from participants younger than 18 years old were withdrawn from the sample. Secondly, since the original English documentary was chosen as the stimulus, the participants were asked to report on a five-point Likert-type scale how well they had understood the video content. Further, participants were asked seven right or wrong questions about the content and a scale was created, ranging from 0 to 7 correct answers. Six participants who indicated that they had problems understanding the video (i.e., score of 3 or less on the Likert-type scale or only answered four or less of the correct answers) were excluded from the analysis, thus resulting in a final sample of 142 participants who

reported that they understood "moderately well" (n = 13), "very well" (n = 51) or "extremely well" (n = 78) the video, and who answered most of the items correctly (M = 6.56, SD = 0.729).

In this final sample (N = 142), there were 79 male participants (55.6%) and, consequently, 63 (44.4%) participants were women. The majority of the participants were young adults as 78 (54.9%) participants were between the ages of 18 and 24 years old; followed by 42 (29.6%) participants that were between 45 and 64 years old, 20 (14.1%) participants between 25 and 44 years old, and only 2 (1.4%) participants with 65 years old or more. Regarding the employment status, the majority of the participants (50%) were employed, given that 43.7% were employees and 6.3% were self-employed; additionally, 43% of the participants were students, 6.3% were unemployed, and only 0.7% were retired. Furthermore, 81 (57%) participants reported having already used a VR device and, from this, 85.2% used it at least "2 to 3 times". The participants' socio-demographic information is shown in Table 3.2.

Table 3.2: Demographic characteristics of the sample.

Demographics	Descriptive statistics
Gender	Male ($N = 79$)
	Female ($N = 63$)
Age	18-24 ($N = 78$)
	25-34 ($N = 18$)
	35-44 ($N = 2$)
	45-54 ($N = 23$)
	55-64 ($N = 19$)
	65-74 ($N = 2$)
Employment status	Student ($N = 61$)
	Employed ($N = 62$)
	Self-employed ($N = 9$)
	Unemployed ($N = 9$)
	Retired ($N = 1$)
Previous usage of VR	Yes ($N = 81$)
	No ($N = 61$)
Frequency of VR usage	Once ($N = 28$)
	2 to 3 times ($N = 41$)
	4 to 7 times ($N = 2$)
	More than 7 times ($N = 10$)

Source: Author's own creation based on PLS and SPSS outputs.

3.5 Measures

The immersion level was considered a moderator variable of the model, and both perceived vividness and perceived interactivity were considered as independent variables. Furthermore, a questionnaire consisting of ten sections was created in a digital format (see Appendix A) and the construct measurements were developed by using well-established scales adapted from extant literature, as further described. Nevertheless, in some cases there were slight modifications to the wording to fit the research context. Alongside the questions regarding participant's socio-demographic information and immersive media usage, there were several questions concerning the chosen measures of the investigated variables, which are further detailed.

Sensation-seeking tendency. The Brief Sensation Seeking Scale (Hoyle et al., 2002) was used to measure participants' sensation-seeking tendency. The scale had a total of eight items (e.g., "I would like to explore strange places.", "I would like to try bungee jumping.") and participants rated each of these items using a five-point Likert-type scale, ranging from 1 = "Strongly disagree", to 5 = "Strongly agree".

Perceived vividness. Two items adapted from previous VR research (Yoo & Drumwright, 2018) were used to measure participants' perceived vividness on a seven-point Likert-type scale, ranging from 1 = "Strongly disagree", to 7 = "Strongly disagree". The two items were (a) "I could fully visualize the Nyarugusu Refugee Camp", and (b) "I was directly experiencing the Nyarugusu Refugee Camp".

Perceived interactivity. To assess participants' perceived interactivity, three items were adapted from extant VR research (Yoo & Drumwright, 2018). The three items (e.g., "I felt that my Nyarugusu Refugee Camp media experience was interactive.") were measured on a seven-point Likert-type scale, ranging from 1 = "Strongly disagree", to 7 = "Strongly agree".

Spatial presence. To assess the spatial presence felt by the participants during the experiment, the Spatial Presence Experience Scale (Hartmann et al., 2015) was adapted. The scale consists of eight items measuring two dimensions, namely self-location (e.g., "I felt like I was actually there in the Nyarugusu Refugee Camp") and possible actions (e.g., "I had the impression that I could act in the environment of the Nyarugusu Refugee Camp."). The participants indicated their level of agreement on a seven-point Likert-type scale, ranging from 1 = "Strongly disagree", to 7 = "Strongly agree".

Social presence. Four items were selected from extant VR literature (Ma, 2020) to assess the social presence felt by the participants watching the video (e.g., "How much did it seem as

if you and the people you saw/heard were together in the same place?"). The participants indicated their level of agreement on a seven-point Likert-type scale, ranging from 1 = "Not at all", to 7 = "Very much".

Customer inspiration. The ten-item scale used to operationalize customer inspiration as a second-order construct composed by inspired-by (e.g., "I was intrigued by a new idea.") and inspired-to ("I was inspired to donate something.") was adapted from the original customer inspiration scale developed and validated by Böttger and colleagues (2017). The ten items were measured on a 7-point Likert-type scale, ranging from 1 = "Not at all" to 7 = "Very much".

Donation intention. A measure of behavioral intention from previous literature (Yoo & Drumwright, 2018) was adapted to assess donation intention. The three items (e.g., "It is very likely that I will donate money to the Nothing but Nets' campaign helping the Nyarugusu Refugee Camp in the next two months") were measured on a seven-point Likert-type scale, ranging from 1 = "Strongly disagree" to 7 = "Strongly agree".

Control variables. The proposed model includes four control variables, namely gender, age, employment status, and previous usage of VR. Thus, questions on the participant's age, gender and employment status, and previous usage of VR were used. Its effects on the participants' levels of customer inspiration and donation intention were assessed.

4. Data Analysis

4.1 Descriptive Analysis

The initial stage to conduct an analysis is to produce a descriptive statistical analysis for all the constructs that constitute the conceptual framework (Figure 2.1). Therefore, in this primary step, the mean and standard deviation will be applied to present a concise description of the sample and employed measures.

Firstly, a new variable for all the questions presented in the survey was generated through the calculation of the mean of each mean associated with the specific variable to create the constructs. These means were computed using SPSS software. Further, this chapter presents an analysis of each variable with values acquired through both PLS and SPSS software's outputs.

4.1.1 Sensation-seeking tendency

The following variable, Sensation-Seeking Tendency (SST), initially comprised eight items, presented in Table 4.1. However, SST1, SST2, and SST3 were excluded from the measure as these items presented loadings lower than 0.7. Thus, this construct is constituted by the five remaining items (i.e., SST4, SST5, SST6, SST7, and SST8). Nevertheless, the item that scores the highest mean among the other items is SST1: I would like to explore strange places, namely 4.04, being the item with the highest agreement rate between responses. In terms of standard deviation, the item SST6: I would like to try bungee jumping, assumes the maximum value of 1.641, being the item with the biggest disparity between responses. Additionally, the new construct SST presents an average value of 3.35 and a standard deviation of 1.276.

Table 4.1: Descriptive Statistics – Sensation-Seeking Tendency.

	Mean	Std. Deviation
SST1: I would like to explore strange places.	4.04	0.952
SST2: I would like to take off on a trip with no pre-planned routes or timetables.	3.94	1.119
SST3: I get restless when I spend too much time at home.	3.38	1.096
SST4: I prefer friends who are excitingly unpredictable.	3.37	1.014
SST5: I like to do frightening things.	2.90	1.205
SST6: I would like to try bungee jumping.	3.04	1.641
SST7: I like wild parties.	3.30	1.270
SST8: I would love to have new and exciting experiences, even if they are illegal.	2.85	1.254
Construct: Sensation-Seeking Tendency	3.35	1.276

Source: Author's own elaboration based on SPSS and PLS outputs.

4.1.2 Perceived Vividness

As it is possible to verify on Table 4.2, Perceived Vividness (PV) is composed by two items (PV1 and PV2), where PV1: I could fully visualize the Nyarugusu Refugee Camp, scores the highest mean, and therefore the highest level of agreement in participants' answers, namely

5.78. Regarding standard deviation, the item PV2: I was directly experiencing the Nyarugusu Refugee Camp, assumes the maximum value of 1.533, which corresponds to the highest disparity among the participant's answers. Additionally, the new construct PV presents an average value of 5.44 and a standard deviation of 1.509.

Table 4.2: Descriptive Statistics – Perceived Vividness.

	Mean	Std. Deviation
PV1: I could fully visualize the Nyarugusu Refugee Camp.	5.78	1.410
PV2: I was directly experiencing the Nyarugusu Refugee Camp.	5.11	1.533
Construct: Perceived Vividness	5.44	1.509

Source: Author's own elaboration based on SPSS and PLS outputs.

4.1.3 Perceived Interactivity

As described on Table 4.3, Perceived Interactivity (PI) is composed by three items (PI1, PI2, and PI3), where PI1: I felt that my Nyarugusu Refugee Camp media experience was interactive, scores the highest mean among the other items, namely 5.33, and the lowest standard deviation, namely 1.496, meaning that this specific statement presents the highest agreement rate and the highest similarity among the participants' answers. In contrast, the item PI3: I felt that I could react to the refugees in the media, assumes the maximum value of standard deviation, namely 1.875, corresponding to the highest level of disparity between responses. Additionally, the new construct PI presents an average value of 4.78 and a standard deviation of 1.786.

Table 4.3: Descriptive Statistics – Perceived Interactivity.

	Mean	Std. Deviation
PI1: I felt that my Nyarugusu Refugee Camp media experience was interactive.	5.33	1.496
PI2: I felt that I could respond to the refugees in the media.	4.39	1.837
PI3 : I felt that I could react to the refugees in the media.	4.61	1.875
Construct: Perceived Interactivity	4.78	1.786

4.1.4 Spatial presence

As shown in Table 4.4, Spatial Presence is composed by eight items (SPAT1, SPAT2, SPAT3, SPAT4, SPAT5, SPAT6, SPAT7, and SPAT8), where SPAT1: I felt like I was actually there in the Nyarugusu Refugee Camp, scores the highest mean among the other items, namely 4.96, corresponding to the highest level of agreement in the participants' answers. Regarding the standard deviation, the item SPAT4: I felt as though I was physically present in the environment of the Nyarugusu Refugee Camp, corresponds to the highest disparity among the participants' answers, assuming the maximum value of 1.849. Additionally, the new construct spatial presence presents an average value of 4.49 and a standard deviation of 1.826.

Table 4.4: Descriptive Statistics – Spatial Presence.

	Mean	Std. Deviation
SPAT1: I feel like I was actually there in the Nyarugusu Refugee Camp.	4.96	1.678
SPAT2: It seem as though I actually took part in the action of the Nyarugusu Refugee Camp.	4.38	1.821
SPAT3: It was though my true location has shifted to the environment of the Nyarugusu Refugee Camp.	4.58	1.807
SPAT4: I felt as though I was physically present in the environment of the Nyarugusu Refugee Camp.	4.65	1.849
SPAT5: The objects in the presentation gave me the feeling that I could do things with them.	4.41	1.803
SPAT6: I had the impression that I could act in the environment of the Nyarugusu Refugee Camp.	4.36	1.846
SPAT7: I felt like I could move around among the objects in the Nyarugusu Refugee Camp.	4.78	1.767
SPAT8: It seem to me that I could do whatever I wanted in the environment of the Nyarugusu Refugee Camp.	3.80	1.838
Construct: Spatial Presence	4.49	1.826

4.1.5 Social presence

As presented in Table 4.5, Social Presence is composed by four items (SOC1, SOC2, SPAT3, and SOC4), where SOC4: How often did it feel as if someone you saw/heard in the environment was talking directly to you?, scores the highest mean among the other items,

namely 4.66, and the lowest standard deviation, namely 1.833, meaning that this item presents the highest agreement rate and the highest similarity among the participants' answers. In contrast, the item SOC3: How much did it seem as if you and the people you saw/heard were together in the same place?, assumes the maximum value of 1.921, corresponding to lowest similarity among the participants' answers. Additionally, the new construct social presence presents an average value of 4.24 and a standard deviation of 1.920.

Table 4.5: Descriptive Statistics – Social Presence.

	Mean	Std. Deviation
SOC1: How often did you have the sensation that people you saw/heard could also see/hear you?	3.83	1.909
SOC2: To what extend did you feel you could interact with the person or people you saw/heard?	3.83	1.856
SOC3: How much did it seem as if you and the people you saw/heard were together in the same place?	4.65	1.921
SOC4: How often did it feel as if someone you saw/heard in the environment was talking directly to you?	4.66	1.833
Construct: Social Presence	4.24	1.920

Source: Author's own elaboration based on SPSS and PLS outputs.

4.1.6 Customer inspiration

Customer inspiration (CI) is composed by two dimensions: Inspired-By and Inspired-To. To establish this reflective-reflective second-order construct, the repeated indicators approach was draw. The constructs Inspired-By and Inspired-To represent the first-order constructs of the more general higher-order construct CI, which is measured with ten indicators (CI1, CI2, CI3, CI4, CI5, CI6, CI7, CI8, CI9, and CI10). As presented in Table 4.6, Inspired-By comprises five items (CI1, CI2, CI3, CI4, and CI5), where CI5: I discovered something new, scores the highest mean among the other items, namely 5.41, meaning that this item presents the highest agreement rate between participants' answers, and where the item CI2: I was intrigued by a new idea, assumes the maximum value of standard deviation, namely 1.730, corresponding to the highest level of disparity between responses. This dimension presents an average value of 5.04 and a standard deviation of 1.666. Additionally, Inspired-To comprises five items as well (CI6, CI7, CI8, CI9, and CI10), where CI6: I was inspired to donate something, scores the highest mean among the other items, namely 5.39, meaning that this item presents the highest agreement rate between participants' answers, and where the item CI10: I felt an urge to donate

something, assumes the maximum value of standard deviation, namely 1.851, corresponding to the highest level of disparity between responses. This dimension presents a higher average value of 5.25 and a also a higher standard deviation of 1.768, comparing with Inspired-By. Ultimately, the new construct CI presents an average value of 5.15 and a standard deviation of 1.721.

Table 4.6: Descriptive Statistics – Customer Inspiration.

	Mean	Std. Deviation
Inspired-By	**5.04**	**1.666**
CI1: My imagination was estimulated.	5.14	1.476
CI2: I was intrigued by a new idea.	4.99	1.730
CI3: I unexpectedly and spontaneously got new ideas.	4.40	1.718
CI4: My horizon was broadned.	5.24	1.598
CI5: I discovered something new.	5.41	1.638
Inspired-To	**5.25**	**1.768**
CI6: I was inspired to donate something.	5.39	1.722
CI7: I felt a desire to donate something.	5.30	1.709
CI8: My interest to donate something was raised.	5.35	1.807
CI9: I was motivated to donate something.	5.30	1.733
C10: I felt an urge to donate something.	4.93	1.851
Construct: Customer Inspiration	**5.15**	**1.721**

Source: Author's own elaboration based on SPSS and PLS outputs.

4.1.7 Donation intention

As it is possible to verify on Table 4.7, Donation Intention (DI) is composed by three items (DI1, DI2, and DI3), where DI1: It is very likely that I will donate money to the Nothing but Nets' campaign from the United Nations Foundation, scores the highest mean among the other items, namely 4.24, and the lowest standard deviation, namely 1.688, meaning that this specific statement presents the highest agreement rate and the highest similarity among the participants' answers. In contrast, the item DI3: I will definitely donate to the United Nations Foundation

helping the Nyarugusu Refugee Camp, scores the lowest mean among the other items, namely 3.73, and assumes the maximum value of standard deviation, namely 1.787, corresponding to the lowest agreement rate and highest level of disparity between responses. Additionally, the new construct DI presents an average value of 3.95 and a standard deviation of 1.759.

Table 4.7: Descriptive Statistics – Donation Intention.

	Mean	Std. Deviation
DI1: It is very likely that I will donate to the Nothing but Nets' campaign from the United Nation Foundation.	4.24	1.688
DI2: It is very likely that I will donate money to the United Nation Foundation helping the Nyarugusu Refugee Camp.	3.89	1.773
DI3: I will definitely donate to the United Nation Foundation helping the Nyarugusu Refugee Camp.	3.73	1.787
Construct: Donation Intention	3.95	1.759

Source: Author's own elaboration based on SPSS and PLS outputs.

4.2 Model Estimation

The Partial Least Squares-Structural Equation Modeling (PLS-SEM) approach was employed to analyse the proposed model. This approach was conducted in two steps: (1) the measurement model and (2) the structural model. The model is constituted by seven first-order constructs, namely, donation intention, immersion level, sensation-seeking tendency, social presence, spatial presence, perceived interactivity, and perceived vividness, and by one second-order construct. The constructs inspired-by and inspired-to represent the lower-order constructs of the more general higher-order construct customer inspiration, which is alleged as a reflective-reflective construct. To estimate this higher-order construct, the repeated indicators approach was followed. The results are further presented.

4.3 Assessment of Measurement Model

Reflective measurement models are assessed through the observation of several criterions, such as internal consistency reliability, convergent validity, and discriminant validity (Hair et al. 2017). The results of the measurement model of the first-order reflective constructs, namely

Donation Intention, Immersion Level, Sensation-Seeking Tendency, Social Presence, Spatial Presence, Perceived Interactivity, and Perceived Vividness, and the components of Customer Inspiration, i.e., Inspired-By and Inspired-To, will be further presented and analysed.

Primarily, through a reliability inspection of the construct's items, three items (SST1, SST2, and SST3) from the construct Sensation-Seeking Tendency were eliminated. The effects of item removal on the composite reliability, as well as on the content validity of the construct Sensation-Seeking Tendency, were examined. According to Hair and colleagues (2017), items with outer loadings between 0.40 and 0.70 should only be removed from the scale when deleting them leads to an increase in the composite reliability, in the average variance extracted (AVE), or in content validity, above the suggested threshold value (Hair et al., 2017). In this way, items with weaker outer loadings, such as SST6 and SST8, with loadings of 0.687 and 0.691 (see Appendix B), respectively, were retained based on their contribution to composite reliability and AVE above the suggested threshold value, and the three items (SST1, SST2, and SST3) were eliminated because neither of them contributed to an increase above the suggested threshold value in any of the criterions. All remaining items present outer loadings above 0.708 (see Appendix B) and, therefore, are considered reliable (Hair et al., 2017).

Moreover, the first criterion to be assessed was the internal consistency reliability through the Cronbach's alpha, which provides an estimate of the reliability based on the intercorrelations of the observed item variables (Hair et al., 2017), rho_A values, and composite reliability, which is also a measure of internal consistency and considers the different outer loadings of the item variables (Hair et al., 2017). All Cronbach's alpha, rho_A and composite reliability values overcome the lower limit of 0.7 (Table 4.8) and therefore, all constructs are reliable.

To evaluate convergent validity of the reflective constructs, i.e., the extent to which a measure correlates positively with alternative measures of the same construct (Hair et al., 2017), the outer loadings of the items, commonly called indicator reliability, and the average variance extracted (AVE) were considered. As mentioned above, items with weaker outer loadings, such as SST6 and SST8, with loadings of 0.687 and 0.691, respectively, were retained based on their contribution to composite reliability and AVE above the suggested threshold value. All remaining items present outer loadings above 0.708, and therefore, are considered reliable (Hair et al., 2017). All loadings can be found in Appendix B. Regarding AVE, i.e., the mean value of the squared loadings of the items associated with the construct, should be at least 0.50, indicating that, on average, the construct explains more than half of the variance of its item

(Hair et al., 2017). This criterion has been successfully met as the values overcome the recommended lower limit, as demonstrated in Table 4.8.

Table 4.8: Construct Reliability and Convergent Validity.

	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
Sensation Seeking Tendency	0.807	0.828	0.864	0.560
Perceived Vividness	0.766	0.881	0.891	0.803
Perceived Interactivity	0.870	0.887	0.921	0.796
Spatial Presence	0.966	0.967	0.971	0.806
Social Presence	0.928	0.932	0.949	0.822
Inspired By	0.888	0.891	0.918	0.692
Inspired To	0.972	0.974	0.979	0.901
Donation Intention	0.941	0.942	0.962	0.895

Source: Author's own creation based on PLS outputs.

Additionally, establishing discriminant validity implies that a construct is unique and captures phenomena not represented by other constructs in the model (Hair et al., 2017). To analyse it, the Fornell-Larcker criterion and the assessment of cross-loadings were employed. The first criterion stresses that the square root of each construct's AVE should be greater than its highest correlation with any other construct in the model (Fornell & Larcker, 1981). As demonstrated in Table 4.9, this criterion was met. The assessment of cross-loadings (see Appendix C) also suggests that discriminant validity has been established as each item share more variance with its own construct than with other constructs in the path model (Hair et al., 2017).

Finally, the variance inflation factor (VIF) scores of all sets of predictor constructs were examined. As can be seen in Table 4.10, all VIF values are clearly below the threshold of 5 (Hair et al., 2014), showing that there are no inner collinearity issues.

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Table 4.9: Discriminant Validity: Fornell-Larcker Criterion.

	1	2	3	4	5	6	7	8
1. Donation Intention	**0.946**							
2. Inspired By	0.653	**0.832**						
3. Inspired To	0.776	0.718	**0.949**					
4. Perceived Interactivity	0.452	0.634	0.521	**0.892**				
5. Perceived Vividness	0.352	0.456	0.388	0.635	**0.896**			
6. Social Presence	0.531	0.669	0.580	0.748	0.476	**0.907**		
7. Spatial Presence	0.565	0.663	0.580	0.865	0.641	0.856	**0.898**	
8. Sensation-Seeking Tencency	0.113	0.296	0.190	0.414	0.211	0.422	0.359	**0.746**

Source: Author's own creation based on PLS output.

Note: The diagonal values in bold indicate the square root of average variances extracted (AVE). The values in the lower diagonal indicate inter-construct correlations.

Table 4.10: Collinearity Assessment for Structural Model.

	Customer Inspiration	Donation Intention	Perceived Interactivity	Perceived Vividness	Social Presence	Spatial Presence
Customer Inspiration		1.000				
Donation Intention						
Perceived Interactivity					1.677	1.677
Perceived Vividness					1.677	1.677
Social Presence	3.745					
Spatial Presence	3.745					

Source: Author's own creation based on PLS output.

Note: Variance Inflation Factor (VIF) less than 5 (Hair et al., 2014).

4.4. Assessment of structural model

The assessment of the structural model, also described as the inner model, aims to study the model's predictive capabilities and the relationships between the latent variables. The assessment of the structural model builds on the results from the standard model estimation, the bootstrapping routine, and the blindfolding procedure, conducted to analyse the path coefficients, the variance explained, and the statistical significance levels (Hair et al., 2017). The structural model (Figure 4.1) is constituted by two types of variables: (1) exogenous latent constructs, i.e., variables with no structural path relationships, namely, perceived vividness and

perceived interactivity; and (2) endogenous latent variables, i.e., variables that are predicted by the model and analysed through structural model relationships with other constructs, namely, social presence, spatial presence, customer inspiration, and donation intention (Hair et al., 2011).

To evaluate the structural model relationships, i.e., the path coefficients, which represent the hypothesised relationships among the constructs, the non-parametric bootstrapping procedure was conducted (Hair et al., 2017). Considering that all paths should be positive, greater than 0.1 (Chin, 1998) and the p-values should be lower than 0.05, all hypotheses, except H1a, are supported by the results (Table 4.11), as further described. H1a, which evaluates if perceived vividness positively influences social presence, is not supported by the results (β = .001, t = 0.80, p = .992), meaning that perceived vividness is not a good predictor for social presence. On the contrary, H1b, which proposes that perceived vividness positively influences spatial presence, is supported by the results (β = .15, t = 0.75, p < .05). Hence, the more the user perceives the immersive video as vivid, the more strongly will experience spatial presence. Moreover, H2a proposes that perceived interactivity positively influences social presence, and H2b posits that perceived interactivity positively influences spatial presence. Both hypotheses are supported by the results (β = .75, t = 6.23, p < .001; and β = .77, t = 5.60, p < .001, respectively), and therefore, one can state that the more the user perceives the immersive video as interactive, the more strongly will experience both social and spatial presence. Further, H5 theorizes that social presence positively influences customer inspiration, and H6 proposes that spatial presence positively influences customer inspiration. Both hypotheses are supported by the results (β = .37, t = 2.22, p < .05; and β = .35, t = 1.63, p < .05, respectively), and thus, when the user experiences higher levels of social presence as well as higher levels of spatial presence, the level of customer inspiration increase. Finally, H7 posits that customer inspiration positively influences donation intention. This hypothesis is supported by the results (β = .78, t = 14.84, p < .001), meaning that customer inspiration is a good predictor of donation intention. Consequently, the structural model reveals that all path coefficients are significant at the 0.001, 0.01 and 0.05 levels, except the path between perceived vividness and social presence (H1a), as mentioned before. All these direct effects can be found in Table 4.11.

Table 4.11: Results of the structural model: Direct Effects.

Hypothesis	Relationships	β	Std. Deviation	t-value	p-value
H1a: not supported	PV → Social Presence	0.001	0.165	0.795	0.992
H1b: supported	PV → Spatial Presence	0.154	0.158	0.746	0.011
H2a: supported	PI → Social Presence	0.748	0.141	6.229	0.000
H2b: supported	PI → Spatial Presence	0.766	0.134	5.603	0.000
H5: supported	Social Presence → CI	0.368	0.207	2.220	0.003
H6: supported	Spatial Presence → CI	0.349	0.195	1.629	0.005
H7: supported	CI → DI	0.780	0.053	14.841	0.000

Source: Author's own creation based on PLS output.
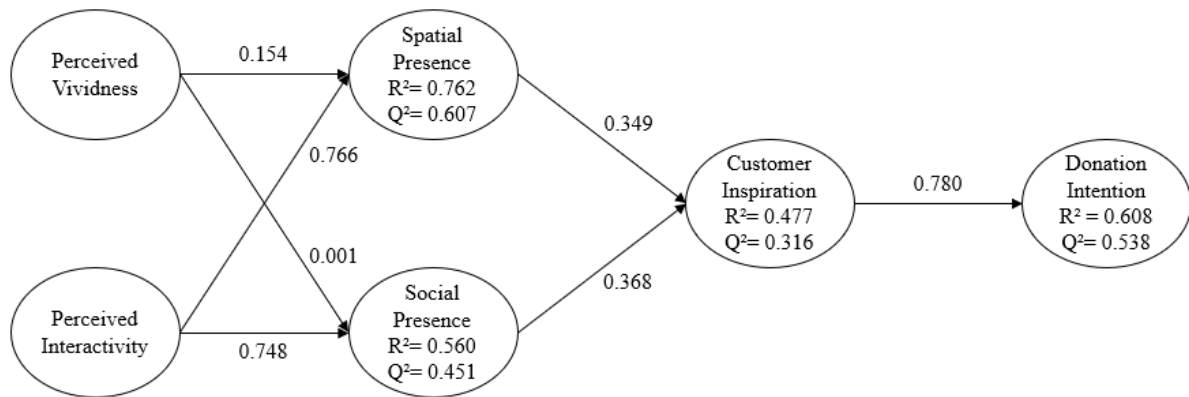
Figure 4.1: Structural Model.

Source: Author's own creation based on PLS output.

The Table 4.12 displays the coefficient of determination (R^2), Stone-Geisser's Chi-square (Q^2), and Model fit. The R^2 is a measure of the model's predictive accuracy, which represents the amount of variance in the endogenous construct explained by the exogenous construct(s) linked to it in the model. The R^2 scores range from 0 to 1, with higher values indicating a higher predictive accuracy (Hair et al., 2017). Additionally, Q^2 is an indicator of the model's predictive relevance and it can be measured in PLS through the blindfolding procedure. There is proof of relevance when Q^2 scores are above 0 for a specific reflective endogenous variable (Hair et al.,

2011). As it is possible to see in Table 4.12, Perceived Vividness and Perceived Interactivity explain 56,0% (R^2= 0.560) of the variance in Social Presence, and 76,2% (R^2= 0.762) of the variance in Spatial Presence, and both are relevant for these variables (Q^2=0.451; Q^2=0.607, respectively). Additionally, Social Presence and Spatial Presence explain 47,7% (R^2= 0.477) of the variance in Customer Inspiration and are relevant for this variable (Q^2= 0.316). Finally, Customer Inspiration explain 60,8% (R^2 = 0.608) of the variance in Donation Intention and is relevant for this variable (Q^2= 0.538). The aforementioned results indicate that the model has predictive relevance and a good predictive power (Hair et al., 2011; Hair et al., 2017).

In addition, the model fit, measured through the standardized root mean residual (SRMR), should be applied to identify model misspecifications. Following a conservative approach, a good fit corresponds to an SRMR lower than 0.08 (Hu & Bentler, 1999). Hence, the model presents a good fit as the SRMR equals 0.078 (Table 4.12).

Lastly, four control variables are taken into consideration in this study, namely, gender, age, employment status, and previous usage of VR. For all groups, none of the control variables has proven to influence customer inspiration or donation intention (see Appendix D).

Table 4.12: Results of the structural model: R-square, Chi-square and Model Fit.

	R²	Q²
Customer Inspiration	0.477	0.316
Donation Intention	0.608	0.538
Social Presence	0.560	0.451
Spatial Presence	0.762	0.607
Model Fit		
SRMR	0.078	

Source: Author's own creation based on PLS output.

4.5 Moderation analysis

The present study proposes that sensation-seeking tendency has a moderating effect on four different relationships, namely, perceived vividness to social presence, perceived vividness to spatial presence, perceived interactivity to social presence, and perceived interactivity to spatial presence.

In line with Hair and colleagues (2019), the two-stage approach for moderator analysis was followed. This approach reveals significance of the moderating effect when exogenous and moderator constructs are reflective (Hair et al., 2017). The results do not support both H3a (β

= -.02, t = 0.22, p > 0.05) and H3b (β = -.01, t = 0.06, p > 0.05); hence, sensation-seeking tendency does not moderate the relationship between perceived vividness and social presence or the relationship between perceived vividness and spatial presence. Additionally, the results do not support both H4a (β = .01, t = 0.19, p > 0.05) and H4b (β = .01, t = 0.14, p > 0.05); thus, sensation-seeking tendency does not moderate the relationship between perceived interactivity and social presence or the relationship between perceived interactivity and spatial presence. Overall, these results do not provide support that sensation-seeking tendency exerts a significant and positive effect on the relationships between perceived vividness and social presence; perceived vividness and spatial presence; perceived interactivity and social presence; and perceived interactivity and spatial presence. Table 4.13 shows the results of the moderation analysis.

Table 4.13: Results of Moderation Analysis.

Hypothesis	Relationships	β	t-value	p-value	Bias Corrected Confidence Interval	
					Lower Bound	Upper Bound
	PV $\rightarrow$ Social Presence	0.01	0.17	0.863	-0.141	0.145
	SST $\rightarrow$ Social Presence	0.14	2.03	0.042	0.003	0.262
H3a: not supported	PV*SST $\rightarrow$ Social Presence	-0.02	0.22	0.830	-0.183	0.116
	PV $\rightarrow$ Spatial Presence	0.16	2.56	0.011	0.034	0.271
	SST $\rightarrow$ Spatial Presence	0.01	0.24	0.811	-0.077	0.100
H3b: not supported	PV*SST $\rightarrow$ Spatial Presence	-0.01	0.17	0.867	-0.125	0.097
	PI $\rightarrow$ Social Presence	0.68	9.45	0.000	0.542	0.820
	SST $\rightarrow$ Social Presence	0.14	2.03	0.042	0.003	0.262
H4a: not supported	PI*SST $\rightarrow$ Social Presence	0.01	0.19	0.847	-0.103	0.138
	PI $\rightarrow$ Spatial Presence	0.76	13.78	0.000	0.657	0.865
	SST $\rightarrow$ Spatial Presence	0.01	0.24	0.811	-0.077	0.100
H4b: not supported	PI*SST $\rightarrow$ Spatial Presence	0.01	0.14	0.888	-0.080	0.119

Source: Author's own creation based on PLS output.

Note: β: Path Coefficient.

4.6 Multigroup analysis

To analyse the moderating effect of video immersiveness on the relationship between customer inspiration and donation intention, the immersion level shall be considered a moderating factor. In this case, a multigroup analysis procedure seems appropriate given the categorical variability of immersion level. For this purpose, a comparative two-level of immersion approach was devised, resulting in three comparisons: High Immersion-Moderate Immersion, High Immersion-Low Immersion, and Moderate Immersion-Low Immersion. Before testing the moderating effect of the immersion level, quantification of measurement invariance has been crucial. Measurement invariance is regarded as a major issue when conducting PLS-SEM multigroup analysis. To assess it, a measurement invariance of composite models (MICOM) procedure (Henseler et al., 2016) was developed, involving three steps.

Firstly, configurational invariance interpreted both as a homogeneous parameterization system and way of estimation. To analyse configuration invariance, the measurement model, structural model, and algorithm for all model estimates must be identical both for the integrity of each sample and for each group, relying on both an identical questionnaire (see Appendix A) and conceptual framework (Figure 2.1). In this case, configuration invariance has been successfully established (Figure 4.1).

Secondly, compositional invariance, which occurs when composite scores are created equally across groups (Dijkstra and Henseler 2011), was assessed through a MICOM procedure that has been implemented in a SmartPLS 3 software, involving a total of 5000 permutations. As shown in Table 4.14, the results for the second step indicate that compositional invariance has been demonstrated for all the constructs. This is evident based on the original correlations being equal to, or greater, than the 5.00% quantile correlations (Mattheus, 2017). Additionally, a permutation test has allowed confirmation that none of the values for correlation c differ significantly from this same figure. Therefore, it is possible to conclude that composite invariance occurs in all constructs considered for the model.

Table 4.14: MICOM: Compositional invariance.

Relationship	Comparison	Original correlation	Correlation permutation mean	5.0%	Permutation p-values
Customer Inspiration	HI vs. MI	0.999	1.000	0.999	0.102
	HI vs. LI	1.000	1.000	0.999	0.864
	MI vs. LI	0.999	1.000	0.999	0.243
Donation Intention	HI vs. MI	1.000	1.000	1.000	0.801
	HI vs. LI	1.000	1.000	1.000	0.330
	MI vs. LI	1.000	1.000	1.000	0.281
Perceived Interactivity	HI vs. MI	0.999	0.998	0.994	0.421
	HI vs. LI	0.999	0.999	0.998	0.143
	MI vs. LI	1.000	0.999	0.997	0.523
Perceived Vividness	HI vs. MI	1.000	0.994	0.979	0.829
	HI vs. LI	0.998	0.996	0.984	0.491
	MI vs. LI	0.999	0.995	0.979	0.671
Social Presence	HI vs. MI	1.000	1.000	0.999	0.816
	HI vs. LI	1.000	1.000	0.999	1.000
	MI vs. LI	1.000	1.000	0.999	0.867
Spatial Presence	HI vs. MI	1.000	1.000	1.000	0.065
	HI vs. LI	1.000	1.000	1.000	0.917
	MI vs. LI	1.000	1.000	1.000	0.165

Source: Author's own creation based on PLS output.

Note: For procedure MICOM use the program SmartPLS 3 for 5000 permutations.

Finally, the constructs' equality of mean values and variances across groups has been assessed. Table 4.15 shows the first portion of the results. For invariance to be established, the mean original difference must be a value that falls within the 95% confidence interval, i.e., the range of the lower and upper boundaries. In order to conclude full measurement invariance for the constructs (Henseler et al. 2016), all constructs must fall within the 95% confidence interval. However, the mean original difference value for all constructs, except for donation intention, does not fall within the 95% interval, when comparing HI vs. MI, and HI vs. LI, thus only providing initial evidence of invariance for the construct of donation intention. On the contrary, when comparing MI vs. LI, all constructs pass this portion of the test, thus providing initial evidence of invariance for all constructs considered. The second portion of the results is shown in Table 4.16. Similarly to the first portion, the variance original difference must be a value that falls within the 95% confidence interval. All constructs considered, except for perceived vividness, pass this portion of the test for invariance when comparing all groups. However, as the constructs costumer inspiration, perceived interactivity, social presence, and spatial presence, did not meet the guidelines in the first portion (Table 4.15) for establishing full

invariance, only partial invariance is confirmed for those constructs, when comparing HI vs. MI, and HI vs. LI. The permutation p-values greater than 0.05 in Table 4.16 provide additional support for those constructs passing the measurement invariance test. However, when comparing HI vs. LI, the construct perceived vividness failed both tests (Tables 4.15 and 4.16), showing no invariance, and therefore, the construct should be removed from the analysis (Mattheus, 2017). Additionally, when comparing MI vs. LI, all constructs pass this second portion of the test, thus establishing full invariance for all constructs considered.

Table 4.15: MICOM: Equal means.

Relationship	Comparison	Mean original difference	Mean permutation mean difference	2.5%	97.5%	Permutation p-values
Customer Inspiration	HI vs. MI	0.418	-0.001	-0.402	0.417	0.045
	HI vs. LI	0.426	0.002	-0.382	0.407	0.033
	MI vs. LI	0.016	-0.001	-0.400	0.402	0.935
Donation Intention	HI vs. MI	0.194	-0.001	-0.405	0.399	0.345
	HI vs. LI	0.149	0.004	-0.384	0.402	0.459
	MI vs. LI	-0.042	-0.002	-0.409	0.403	0.838
Perceived Interactivity	HI vs. MI	0.687	0.001	-0.383	0.411	0.001
	HI vs. LI	0.756	0.000	-0.395	0.394	
	MI vs. LI	0.132	0.002	-0.402	0.416	0.517
Perceived Vividness	HI vs. MI	0.627	-0.004	-0.404	0.404	0.002
	HI vs. LI	0.689	0.001	-0.401	0.399	0.000
	MI vs. LI	0.135	0.001	-0.406	0.395	0.515
Social Presence	HI vs. MI	0.552	0.002	-0.397	0.399	0.007
	HI vs. LI	0.852	0.001	-0.399	0.396	
	MI vs. LI	0.322	-0.001	-0.414	0.409	0.122
Spatial Presence	HI vs. MI	0.632	-0.001	-0.390	0.409	0.002
	HI vs. LI	0.875	0.001	-0.404	0.401	
	MI vs. LI	0.277	0.000	-0.406	0.407	0.182

Table 4.16: MICOM: Equal variances.

Relationship	Comparison	Variance original difference	Variance permutation mean difference	2.5%	97.5%	Permutation p-values
Customer Inspiration	HI vs. MI	-0.296	0.000	-0.550	0.547	0.282
	HI vs. LI	-0.394	0.001	-0.674	0.673	0.248
	MI vs. LI	-0.079	0.007	-0.564	0.572	0.782
Donation Intention	HI vs. MI	-0.107	0.001	-0.457	0.450	0.639
	HI vs. LI	-0.143	0.001	-0.432	0.428	0.524
	MI vs. LI	-0.034	0.007	-0.423	0.437	0.876
Perceived Interactivity	HI vs. MI	-0.164	0.003	-0.529	0.546	0.542
	HI vs. LI	-0.402	0.004	-0.501	0.513	0.130
	MI vs. LI	-0.241	-0.001	-0.503	0.484	0.331
Perceived Vividness	HI vs. MI	-0.383	0.004	-0.480	0.493	0.125
	HI vs. LI	-0.777	0.001	-0.625	0.616	0.016
	MI vs. LI	-0.349	-0.001	-0.491	0.500	0.170
Social Presence	HI vs. MI	-0.355	0.002	-0.481	0.460	0.141
	HI vs. LI	-0.273	0.001	-0.434	0.451	0.223
	MI vs. LI	0.084	-0.001	-0.410	0.410	0.705
Spatial Presence	HI vs. MI	-0.383	-0.000	-0.503	0.497	0.127
	HI vs. LI	-0.410	0.005	-0.427	0.435	0.063
	MI vs. LI	-0.028	0.001	-0.443	0.434	0.895

Source: Author's own creation based on PLS output.

Note: For procedure MICOM use the program SmartPLS 3 for 5000 permutations.

Once finalized, the three aforementioned procedures support the existence of a quantify measurement invariance. Consequently, the application of a multigroup analysis protocol has been pursued (Henseler et al., 2016). In this sense, depending on the immersion level under analysis, both social and spatial presence shall affect customer inspiration differently, as well as customer inspiration shall affect donation intention differently. As noted in Table 4.17, the relationship between social presence and customer inspiration is significant for both HI (p=0.023) and MI (p=0.008) conditions and is not for LI (p=0.872) condition. Additionally, the relationship between spatial presence and customer inspiration is significant for MI (p=0.000) condition and is not for both HI (p=0.105) and LI (p=0.961) conditions. Finally, the relationship between customer inspiration and donation intention do not indicate a major difference between all immersion levels, i.e., HI, MI, and LI conditions. Further, it is necessary to determine if the differences between groups are significant. The relationship between social presence and customer inspiration, as well as the relationship between spatial presence and customer inspiration, indicates a significant difference between MI and LI conditions. This is evident by the permutation p-values of 0.094 and 0.019, respectively, in Table 4.18 (Mattheus, 2017).

Additionally, the relationship between customer inspiration and donation intention indicates a significant difference between MI and LI conditions, with a permutation p-value of 0.075 (Table 4.18). No significant differences were found between HI and LI conditions, or between HI and MI conditions (Mattheus, 2017). Thereafter, H8, H9, and H10 are only partially supported. In a way that only the MI and the LI conditions differed significantly, thus showing that the MI level strengthens the positive relationships between social presence and customer inspiration, between spatial presence and customer inspiration, and between customer inspiration and donation intention, more than the LI level.

Table 4.17: Bootstrapping results for HI, MI, and LI separately.

Relationship		Original sample	Sample mean	Std. Deviation	t-value	p-value
Social Presence → CI	HI	0.463	0.420	0.204	2.273	0.023
	MI	0.579	0.613	0.216	2.674	0.008
	LI	0.037	0.056	0.231	0.161	0.872
Spatial Presence → CI	HI	0.314	0.362	0.194	1.621	0.105
	MI	0.755	0.736	0.216	3.497	0.000
	LI	0.011	-0.026	0.218	0.049	0.961
CI → DI	HI	0.792	0.791	0.052	15.320	0.000
	MI	0.858	0.856	0.040	21.463	0.000
	LI	0.706	0.709	0.076	9.342	0.000

Source: Author's own creation based on PLS output.

Table 4.18: Permutation test path coefficient results.

Relationship	Comparison	|diff|	2.5%	97.5%	p-value Permutation
Social Presence → CI	HI vs. MI	0.423	-0.697	0.674	0.255
	HI vs. LI	-0.120	-0.557	0.546	0.733
	MI vs. LI	0.543	-0.651	0.624	0.094
Spatial Presence → CI	HI vs. MI	-0.440	-0.644	0.659	0.208
	HI vs. LI	0.307	-0.564	0.546	0.310
	MI vs. LI	0.747	-0.632	0.627	0.019
CI → DI	HI vs. MI	-0.066	-0.126	0.123	0.306
	HI vs. LI	0.087	-0.180	0.185	0.349
	MI vs. LI	0.153	-0.162	0.168	0.075

Source: Author's own creation based on PLS output.

5. Discussion

This study explores the usefulness of VR and inspiration as tools for non-profit fundraising and non-profit marketing. With that in mind, an a priori assertion was considered that a serial causal chain should be observed in that media's perceived vividness and perceived interactivity should increase both spatial and social presence, which would in turn boost inspiration and subsequently encourage donation intentions.

Primarily, the role of media richness influencing both spatial and social presence through viewers' perceived vividness and perceived interactivity was tested. Hypothesis 1 (a), which evaluates if perceived vividness positively influences social presence, was not supported by the results, meaning that vividness as a media effect is not a good predictor for social presence. On the contrary, Hypothesis 1 (b) posits that perceived vividness positively influences spatial presence, and it was supported by the results, revealing that the more vivid the media is perceived, the more strongly the viewer will experience spatial presence. Additionally, Hypothesis 2 proposes that perceived interactivity positively influences (H2a) social presence, and (H2b) spatial presence. Both hypotheses were supported by the results, and therefore, the more interactive the media is perceived, the more strongly the viewer will experience both social and spatial presence. Moreover, as previous studies have demonstrated, presence can be generated by media richness (e.g., Steuer, 1992; Kandaurova & Lee, 2019), hence, this study findings reinforce the important role of media richness to leverage spatial presence, i.e., the sense of "being there", in a real physical environment (Pressgrove & Bowman, 2020), as well as the important role of interactivity to generate social presence, i.e., the perception of having real interactions and being aware of others (Pressgrove & Bowman, 2020). This latter finding goes in line with Ma (2020) conclusions that users experience social presence through either their interactions with a virtual character or the mere perception that they exist in the same place.

Additionally, the capability to feel presence depends not only on technological variables, such as interactivity and vividness, but rather on the interaction between these technological variables and individual factors (Steuer, 1992). Thus, to understand how technological and psychological factors may influence the sense of presence, this study explored participants' sensation-seeking tendency as a moderator of the effects of technological media richness, namely, perceived vividness and perceived interactivity, on feelings of both social and spatial presence. However, the results were not in line with previous literature, as Hypothesis 3 was

not supported, meaning that sensation-seeking tendency does not moderate the relationship between perceived vividness and both (H3a) social presence and (H3b) spatial presence. Additionally, Hypothesis 4 was not supported as well, meaning that sensation-seeking tendency does not moderate the relationship between perceived interactivity and both (H4a) social presence and (H4b) spatial presence. This reveals that participants' different levels of sensation seeking tendency did not play a role in moderating the effects of media richness, i.e., interactivity and vividness, on spatial and social presence. As mentioned above, this study results are not consistent with previous researchers' findings. For example, Jin (2013) found that users' sensation-seeking tendency played a significant moderating role in generating feelings of presence in an immersive virtual environment. This raises questions related to uncovering individual difference factors that might in fact moderate these media effects.

Further, the path sequence of social presence and spatial presence leading to customer inspiration is evident by this study results. Concerning the antecedents of customer inspiration, scholars propose that due to new technologies, the list of inspiring sources is constantly expanding (Böttger et al., 2017), therefore Hypothesis 5 and Hypothesis 6 add new variables to the inspiration literature and theorise that customer inspiration is positively influenced by social presence and spatial presence, respectively. Both hypotheses were supported by the results, thus highlighting that the potential donors would feel more inspired when experiencing greater levels of both spatial and social presence. Although there is still little research linking feelings of presence and inspiration, these findings are in line with Rauschnabel and colleagues (2019) that argue that it is difficult to generate inspiration without a sufficient level of realism, suggesting that rich media experiences create social and spatial presence and thus provide more opportunities for individuals to be inspired.

Customer inspiration is therefore a moment of sudden realization, insight, recognition, and comprehension (Oleynick et al., 2014) that stimulates the transformation from an acceptance of a marketing-induced idea into the pursuit of a consumption-related goal (Böttger et al., 2017). In that way, Hypothesis 7 posited that customer inspiration positively influences donation intention, and it was supported by the results. It is crucial to highlight that the positive effect of customer inspiration in donation intention was the strongest direct effect of the whole model, pointing out the important role that inspiration can play in donation intentions. In line with previous research, customer inspiration, evoked by an external source, is connected to the realization of new ideas, leading to behavioral consequences, such as donation intention to charity (Thrash & Elliot, 2003, 2004; Böttger et al., 2017). This behavioral consequence is thus linked with "inspired-to", that is an intention state in which the potential donor is motivated to

take action on newly gained awareness (Thrash & Elliot, 2004). Consistent with the views of Böttger and colleagues (2017) this study findings show that individuals who feel inspired with the sense of presence are more likely to exhibit positive behavioral actions, such as donation intention. Therefore, stimulating potential donors' inspiration can lead to a higher intention to contribute to non-profit fundraisings.

Lastly, this study results revealed that only the MI and LI conditions differed significantly; contradicting part of the assumptions, and thus leading to the partial support of Hypothesis 8, Hypothesis 9, and Hypothesis 10, as no significant differences were found between HI and LI conditions, or between HI and MI conditions. Hence concluding that a moderate level of immersion can leverage the link between social presence and customer inspiration and between spatial presence and customer inspiration, more than a low level of immersion. The results were therefore not conclusive for the higher immersion level. These unexpected findings could be due to the fact that although a complete sense of presence may be elicited only by immersive technologies (such as VR, used in both MI and LI conditions), more traditional media (such as a computer desktop, used in the LI condition) offer a lesser degree of both social and spatial presence as well (Cummings & Bailenson, 2016; Lombard & Ditton, 1997). Additionally, immersive environments have been shown to facilitate prosocial behavior (Asher et al., 2018), such as donation intention. Hence, this study findings reinforce that a moderate level of immersion can also strengthen the relationship between customer inspiration and donation intention, more than a low level of immersion. However, the results were not conclusive for the higher immersion level. Accordingly, non-profit marketers can make use of devices with moderate levels of immersion, such as a mobile HMD device, to provide realistic, vivid, and interactive content that creates both spatial and social presence and consequently inspires potential donors to donate to non-profit fundraisings.

5.1 Theoretical Contributions

The present study has several theoretical and practical implications. With regard to theoretical contributions, this study provides empirical evidence about the relationship between media richness effects, namely perceived vividness and perceived interactivity, and the level of both social and spatial presence. Additionally, several authors (e.g., Sacau et al., 2008) have pointed out the importance of individual factors to understand and elicit the sense of both social and spatial presence. However, there is little research addressing the role of these factors. Even

though user-related variables, such as sensation-seeking tendency, are important determinants of presence, quite little is known about their role (Laarni et al., 2004). Therefore, this study added theoretical discussion about users' individual difference factors, in general, and users' sensation-seeking tendency, in particular, as a moderating variable, to the extant literature on media richness and presence. Thus, suggesting further examination of individual factors, as it can be an integral component of theory building in presence and non-profit marketing literature.

Further, it was highlighted the critical role that both spatial and social presence play in generating inspiration to potential donors. These findings indicate that social presence – the sense of being there with other people, interacting with them, and empathizing with their plight (Pressgrove & Bowman, 2020; Kandaurova & Lee, 2019) –, and spatial presence – the sense of being there, in a real physical environment (Pressgrove & Bowman, 2020) – are the psychological mechanisms that close the social and spatial, and therefore, psychological distance between potential donors and the beneficiaries of non-profit fundraising, creating here an opportunity for them to be inspired (Rauschnabel et al., 2019).

Finally, this study brings attention to the construct of customer inspiration in a non-profit marketing context. Thrash and Elliot (2003) suggest that inspiration is a motivational state that is evoked by an external stimulus and motivates the expression of what is being inspired in behaviours. The findings presented above provide theoretical discussion as well as empirical evidence for the positive impact of customer inspiration on donation intention. Therefore, this study includes potential donors' inspiration as a new predictor variable of donation intention to the extant literature on non-profit marketing. As well as bring into the table the discussion about the moderation effect that the immersion level can have on the relationship between potential donors' inspiration and donation intention.

5.2 Practical Implications

From a practical perspective, this study findings provide non-profit marketers with important insights for media design to enhance the effectiveness of fundraising and marketing. There was an explosive growth of digital communication in recent years that enabled non-profit organisations to enhance their communication strategy (Yoo & Drumwright, 2018). Therefore, considering the rapid penetration rate of VR media, non-profit marketers would benefit from understanding how to maximize the effects of fundraising campaigns using VR (Yoo & Drumwright, 2018). This study found that perceived vividness and perceived interactivity can

increase spatial presence, and that social presence can be intensified by perceived interactivity. This posits an important role of media richness on generating a sense of presence. Additionally, findings from this study show that the sense of both social and spatial presence have a significant role in eliciting customer inspiration. Therefore, one way of providing an inspiring experience to prospective donors is to use rich media content, namely immersive technology, which is vivid and interactive, and creates both social presence and spatial presence. Potential donors will feel as if they were actually with faraway beneficiaries of non-profit donations, such as the refugees in the Nyarugusu Refugee Camp, in Congo. And, consistent with the views of Rauschnabel and colleagues (2019), this social and spatial closeness creates an opportunity for prospect doners to be inspired to contribute to the charitable giving.

Furthermore, although the results regarding the moderation of the immersion level condition on the relationships between both social and spatial presence and customer inspiration, and between customer inspiration and donation intention, were not what was expected based on the literature review, these findings might actually be good news for non-profit organisations and non-profit marketers. Since the results reveal that using a device that provides a moderate level of immersion might be enough for accomplishing the final purpose of fundraising. There is very real financial expense, as such high immersion levels provided by more sophisticated VR devices as the one used in the HI condition, can cost a considerable amount of money, and specially money that may seem wasted since new technologies come out an increasingly short time later, with finer features (Cummings & Bailenson, 2016). There is also the pragmatic issue of usability, as HI hardware often correlates with cumbersomeness and calibration requirements for both the user and the researcher or marketer (Cummings & Bailenson, 2016). This contrasts with MI hardware, that is cheaper, and more practical and easier to use, not requiring, for example, dedicated spaces.

6. Conclusion

New digital media and immersive devices can be persuasive technologies that non-profit organizations should understand and use efficiently. Consumers are increasingly adopting lifestyles in which they enjoy enhanced media content, and fundraising campaigns are also evolving to incorporate superior experiences through enriched media content (Yoo & Drumwright, 2018). As demonstrated in this study, moderate immersion devices such as a mobile HMD, can be an effective fundraising technology capable of driving inspiration and

encouraging donation intentions from potential donors, by providing vivid imagery as well as a realistic interaction between prospective donors and the fundraisings beneficiaries that are going through critical environmental or humanitarian crisis. Hence, it is hoped that this dissertation will encourage further digital fundraising research and that it may help those involved in non-profit fundraisings while planning new media campaigns.

Limitations and directions for further research

Despite its theoretical and managerial contributions, this study has some limitations that suggest opportunities for future research.

Firstly, this study final goal was assessing participant's donation intention, which is a self-reported measure of behavioral intention and not a measure of actual behavior (Yoo & Drumwright, 2018). Behavioral intention is therefore not a perfect predictor of an individual's real behavior (Ajzen, 1985). As such, it is recommended that future research replicates this study findings by using actual donation amount as a dependent variable. As for example, Breves (2020), that placed a laminated savings box with the logo of the campaign behind a dividing wall to enable privacy, and once the participants had completed the online survey, the final page asked them to donate to the non-profit that was the focus of the experiment. It was stressed that donations were optional and that they could leave a donation in the box if they wanted to contribute. The amount of donated money was further recorded (Breves, 2020).

Additionally, participants in this study were relatively young. Mostly young adults between the ages of 18 and 24 years old, participated in the experiment. Since people in their 20s have lower income levels, researching with more individuals over the age of 30, who are more likely to donate to non-profit organisations (Yoo & Drumwright, 2018), would provide meaningful insights for fundraising and non-profit marketing research. Furthermore, this study's participants all lived in Portugal, where digital media, including VR technology, is considerably developed, and that could limit the generalisability and external validity of the study findings. For example, young people in Portugal may be more receptive to new media technology such as VR and more willing to experience it than people in other parts of the world. Thus, research using participants in other parts of the world and with a greater age representation needs to be conducted.

In line with the previous limitation, this study added theoretical discussion about only one user's individual difference factor, namely, sensation-seeking tendency, as a moderating

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variable. Further research should explore other individual difference factors that may interact with various media effects and affect the sense of both social and spatial presence. For example, familiarity with new technologies or personal innovativeness, which refers to an individual's propensity to experiment with new media technologies (Kourouthanassis et al.,2015). As it can be an integral component of theory building in presence and non-profit marketing literature, as well as it can provide helpful insights into designing VR non-profit campaigns and developing customised strategies to segment the interactive media market.

Moreover, a major problem conducting the current experiment was the fact that the three different conditions were conducted in three different places, depending on the condition to which the participants were assigned to. Due to Covid-19 pandemic restrictions and to avoid unnecessary personal contacts, participants assigned to the LI condition participated remotely from their homes, while participants assigned to the MI and HI conditions participated in person at Iscte - Instituto Universitário de Lisboa, specifically, the HI condition was conducted at Iscte's Mixed Reality Lab and the MI condition was conducted in the study room or in other quiet rooms in Iscte. As such, although an effort was made to ensure that the three conditions were conducted in an environment as similar as possible, ideally, this experiment should have been conducted in the same place, for all the three conditions, to avoid the impact of extraneous factors on the dependent variables investigated in the study. Thus, it is recommended that future research replicates this study findings by conducting the three different conditions, i.e., LI, MI, and HI, in the same room of experiment.

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Appendices

Appendix A – Questionnaire.

The following study was developed with the aim of collecting information within the scope of the Master's in Marketing dissertation at ISCTE-IUL.

This study is related with the user's experience using new immersive media devices and your participation is highly valuable.

We remind you that this is not a test to your knowledge but an understanding of your perception in relation to the topic in question. All answers will be anonymous. The completion of your participation in the experiment will take approximately 20 minutes and will include answering an initial questionnaire, followed by watching a short documentary and finally answering a final questionnaire. You are asked to honestly answer the questions. It may happen that you feel nauseous due to the media's immersion. In that case, please notify the person in charge. You can always stop participating if you need to.

Thank you in advance for your time.

Do you wish to proceed?

| Yes |
| No |

For each sentence select the right option that better describes your point of view regarding the subject in question. Going from 1 - "Strongly disagree", to 5 - "Strongly agree".

	1 - Strongly disagree	2	3	4	5 - Strongly agree
I would like to explore strange places.	O	O	O	O	O
I would like to take off on a trip with no pre-planned routes or timetables.	O	O	O	O	O
I get restless when I spend too much time at home.	O	O	O	O	O
I prefer friends who are excitingly unpredictable.	O	O	O	O	O
I like to do frightening things.	O	O	O	O	O
I would like to try bungee jumping.	O	O	O	O	O
I like wild parties.	O	O	O	O	O
I would love to have new and exciting experiences, even if they are illegal.	O	O	O	O	O

← →

Have you ever used a Virtual Reality device?

Yes

No

If yes, how many times?

Once

2 to 3 times

4 to 5 times

6-7 times

More than 7 times

What is your age?

< 18 years old

18-24 years old

25-34 years old

35-44 years old

45-54 years old

55-64 years old

65-74 years old

> 74 years old

What is your gender?

Male

Female

Other

Prefer not to say

←   →

64

What is your current employment status?

Student

Employed

Self-Employed

Unemployed

Retired

← →

Thank you for completing the first part of the survey!
Before continuing, please advise the person responsible for the study that you have finished.

← →

How well did you understand the video?

Extremely well

Very well

Moderately well

Slightly well

Not well at all

← →

Please select whether the sentences below are true or false, considering the Under the Nets' documentary you just saw from the United Nation Foundation's campaign.

	True	False
The Nyarugusu Refugee Camp in Tanzania is one of the world's largest refugee camps.	O	O
Malaria is the biggest killer in the Nyarugusu Refugee Camp.	O	O
Amisa and her family are living in the Nyarugusu Refugee Camp after escaping the violence in the Congo.	O	O
Amisa is living with her father and siblings.	O	O
Despite the lack of protection, Amisa and her siblings have never been infected with malaria.	O	O
Amisa's life gets better when her family moves into a new tent, receives treatment for malaria, and gets bed nets to protect them from malaria-carrying mosquitoes.	O	O
When Amisa moved to a new tent, she was unable to go to school because it was too far away.	O	O

← →

Vividness and interactivity are important elements of an immersive video. Keeping that in mind, please choose the option that better fits you in each sentence. Going from 1 - "Strongly disagree", to 7 - "Strongly agree".

	1 - Strongly disagree	2	3	4	5	6	7 - Strongly agree
I could fully visualize the Nyarugusu Refugee Camp.	O	O	O	O	O	O	O
I was directly experiencing the Nyarugusu Refugee Camp.	O	O	O	O	O	O	O
I felt that my Nyarugusu Refugee Camp media experience was interactive.	O	O	O	O	O	O	O
I felt that I could respond to the refugees in the media.	O	O	O	O	O	O	O
I felt that I could react to the refugees in the media.	O	O	O	O	O	O	O

← →

Considering the experience you had watching the Under the Nets' documentary, choose the option that better fits your perception of presence while watching. Going from 1 - "Strongly disagree", to 7 - "Strongly agree".

	1 - Strongly disagree	2	3	4	5	6	7 - Strongly agree
I felt like I was actually there in the Nyarugusu Refugee Camp.	O	O	O	O	O	O	O
It seemed as though I actually took part in the action of the Nyarugusu Refugee Camp.	O	O	O	O	O	O	O
It was as though my true location had shifted to the environment in the Nyarugusu Refugee Camp.	O	O	O	O	O	O	O
I felt as though I was physically present in the environment of the Nyarugusu Refugee Camp.	O	O	O	O	O	O	O
The objects in the presentation gave me the feeling that I could do things with them.	O	O	O	O	O	O	O
I had the impression that I could act in the environment of the Nyarugusu Refugee Camp.	O	O	O	O	O	O	O
I felt like I could move around among the objects in the Nyarugusu Refugee Camp.	O	O	O	O	O	O	O
It seemed to me that I could do whatever I wanted in the environment of the Nyarugusu Refugee Camp.	O	O	O	O	O	O	O

Please choose the option that better fits you in each sentence regarding your experience watching the Under the Nets' documentary. Going from 1 - "Not at all", to 7 - "Very much".

	1 - Not at all	2	3	4	5	6	7 - Very much
How often did you have the sensation that people you saw/heard could also see/hear you?	O	O	O	O	O	O	O
To what extent did you feel you could interact with the person or people you saw/heard?	O	O	O	O	O	O	O
How much did it seem as if you and the people you saw/heard were together in the same place?	O	O	O	O	O	O	O
How often did it feel as if someone you saw/heard in the environment was talking directly to you?	O	O	O	O	O	O	O

←　　　　→

Considering the experience you had watching the Under the Nets' documentary, please choose the option that better fits you. Going from 1 - "Not at all", to 7 - "Very much".

	1 - Not at all	2	3	4	5	6	7 - Very much
My imagination was stimulated.	O	O	O	O	O	O	O
I was intrigued by a new idea.	O	O	O	O	O	O	O
I unexpectedly and spontaneously got new ideas.	O	O	O	O	O	O	O
My horizon was broadened.	O	O	O	O	O	O	O
I discovered something new.	O	O	O	O	O	O	O
I was inspired to donate something.	O	O	O	O	O	O	O
I felt a desire to donate something.	O	O	O	O	O	O	O
My interest to donate something was raised.	O	O	O	O	O	O	O
I was motivated to donate something.	O	O	O	O	O	O	O
I felt an urge to donate something.	O	O	O	O	O	O	O

The Under the Nets' documentary is part of the Nothing but Nets' campaign from the United Nation Foundation. Please choose the option that better fits you in each sentence. Going from 1 - "Strongly disagree", to 7 - "Strongly agree".

	1 - Strongly disagree	2	3	4	5	6	7 - Strongly agree
It is very likely that I will donate to the Nothing but Nets' campaign from the United Nation Foundation.	O	O	O	O	O	O	O
It is very likely that I will donate money to the United Nation Foundation helping the Nyarugusu Refugee Camp in the next two months.	O	O	O	O	O	O	O
I will definitely donate to the United Nation Foundation helping the Nyarugusu Refugee Camp.	O	O	O	O	O	O	O

←   →

Appendix B – Outer Loadings.

Constructs and Items	Outer Loading
Sensation-Seeking Tendency	
SST4: I prefer friends who are excitingly unpredictable.	0.786
SST5: I like to do frightening things.	0.772
SST6: I would like to try bungee jumping.	0.669
SST7: I like wild parties.	0.810
SST8: I would love to have new and exciting experiences, even if they are illegal.	0.685
Perceived Vividness	
PV1: I could fully visualize the Nyarugusu Refugee Camp.	0.848
PV2: I was directly experiencing the Nyarugusu Refugee Camp.	0.942
Perceived Interactivity	
PI1: I felt that my Nyarugusu Refugee Camp media experience was interactive.	0.797
PI2: I felt that I could respond to the refugees in the media.	0.943
PI3: I felt that I could react to the refugees in the media.	0.929
Spatial Presence	
SPAT1: I feel like I was actually there in the Nyarugusu Refugee Camp.	0.878
SPAT2: It seem as though I actually took part in the action of the Nyarugusu Refugee Camp.	0.918
SPAT3: It was though my true location has shifted to the environment of the Nyarugusu Refugee Camp.	0.923
SPAT4: I felt as though I was physically present in the environment of the Nyarugusu Refugee Camp.	0.925
SPAT5: The objects in the presentation gave me the feeling that I could do things with them.	0.893
SPAT6: I had the impression that I could act in the environment of the Nyarugusu Refugee Camp.	0.922
SPAT7: I felt like I could move around among the objects in the Nyarugusu Refugee Camp.	0.837
SPAT8: It seem to me that I could do whatever I wanted in the environment of the Nyarugusu Refugee Camp.	0.883
Social Presence	
SOC1: How often did you have the sensation that people you saw/heard could also see/hear you?	0.910
SOC2: To what extend did you feel you could interact with the person or people you saw/heard?	0.937
SOC3: How much did it seem as if you and the people you saw/heard were together in the same place?	0.911
SOC4: How often did it feel as if someone you saw/heard in the environment was talking directly to you?	0.867
Inspired By	
CI1: My imagination was estimulated.	0.821
CI2: I was intrigued by a new idea.	0.875
CI3: I unexpectedly and spontaneously got new ideas.	0.816
CI4: My horizon was broadned.	0.872
CI5: I discovered something new.	0.772
Inspired To	
CI6: I was inspired to donate something.	0.961
CI7: I felt a desire to donate something.	0.970
CI8: My interest to donate something was raised.	0.932
CI9: I was motivated to donate something.	0.973
CI10: I felt an urge to donate something.	0.909
Donation Intention	
DI1: It is very likely that I will donate to the Nothing but Nets' campaign from the United Nation Foundation.	0.935
DI2: It is very likely that I will donate money to the United Nation Foundation helping the Nyarugusu Refugee Camp.	0.958
DI3: I will definitely donate to the United Nation Foundation helping the Nyarugusu Refugee Camp.	0.946

Source: Author's own elaboration based on PLS output.

Appendix C – Discriminant Validity: Cross-Loadings.

	Donation Intention	Inspired By	Inspired To	Perceived Interactivity	Perceived Vividness	Social Presence	Spatial Presence	Sensation-Seeking Tendency
DI1	**0.935**	0.627	0.764	0.434	0.344	0.495	0.530	0.047
DI2	**0.958**	0.605	0.743	0.412	0.322	0.488	0.527	0.092
DI3	**0.946**	0.621	0.693	0.437	0.333	0.526	0.547	0.185
CI1	0.567	**0.821**	0.601	0.546	0.473	0.580	0.604	0.176
CI2	0.521	**0.875**	0.556	0.566	0.358	0.564	0.534	0.286
CI3	0.543	**0.816**	0.597	0.540	0.328	0.574	0.587	0.282
CI4	0.573	**0.872**	0.681	0.549	0.439	0.592	0.596	0.213
CI5	0.509	**0.772**	0.539	0.430	0.289	0.466	0.423	0.282
CI6	0.750	0.760	**0.961**	0.543	0.425	0.578	0.586	0.217
CI7	0.748	0.679	**0.970**	0.483	0.385	0.542	0.535	0.148
CI8	0.677	0.672	**0.932**	0.472	0.336	0.532	0.504	0.156
CI9	0.753	0.692	**0.973**	0.489	0.369	0.543	0.545	0.163
CI10	0.757	0.596	**0.909**	0.486	0.323	0.560	0.587	0.221
PI1	0.347	0.499	0.469	**0.797**	0.665	0.566	0.677	0.378
PI2	0.428	0.597	0.476	**0.943**	0.548	0.734	0.840	0.377
PI3	0.428	0.596	0.456	**0.929**	0.511	0.690	0.787	0.360
PV1	0.225	0.319	0.246	0.421	**0.848**	0.309	0.435	0.060
PV2	0.378	0.473	0.418	0.673	**0.942**	0.508	0.673	0.274
SOC1	0.509	0.592	0.480	0.685	0.386	**0.910**	0.763	0.377
SOC2	0.499	0.596	0.527	0.738	0.491	**0.937**	0.822	0.382
SOC3	0.481	0.670	0.561	0.723	0.478	**0.911**	0.844	0.373
SOC4	0.435	0.564	0.537	0.551	0.357	**0.867**	0.659	0.402
SPAT1	0.449	0.570	0.507	0.748	0.653	0.741	**0.878**	0.316
SPAT2	0.496	0.623	0.521	0.818	0.606	0.758	**0.918**	0.306
SPAT3	0.512	0.633	0.565	0.795	0.619	0.783	**0.923**	0.334
SPAT4	0.551	0.654	0.593	0.793	0.574	0.806	**0.925**	0.380
SPAT5	0.565	0.572	0.531	0.769	0.502	0.743	**0.893**	0.249
SPAT6	0.542	0.649	0.555	0.816	0.563	0.795	**0.923**	0.305
SPAT7	0.421	0.496	0.436	0.688	0.577	0.738	**0.837**	0.335
SPAT8	0.515	0.545	0.445	0.776	0.515	0.784	**0.883**	0.358
SST4	0.193	0.286	0.263	0.416	0.203	0.383	0.370	**0.786**
SST5	0.010	0.165	0.112	0.310	0.112	0.329	0.252	**0.772**
SST6	-0.016	0.194	-0.021	0.184	0.061	0.244	0.152	**0.669**
SST7	0.146	0.297	0.212	0.364	0.223	0.353	0.324	**0.810**
SST8	-0.039	0.062	-0.023	0.134	0.145	0.172	0.113	**0.685**

Source: Author's own creation based on PLS output.

Note: The values marked in bold indicate where the highest value is expected.

Appendix D – Control Variables Estimation Model.

		Original sample	Sample mean	Std. Deviation	t-value	p-value
Age → CI	HI	0.085	0.103	0.112	0.759	0.448
	MI	0.031	0.036	0.101	0.305	0.760
	LI	0.206	0.206	0.191	1.080	0.281
Age → DI	HI	-0.029	-0.028	0.078	0.370	0.711
	MI	0.034	0.032	0.096	0.354	0.724
	LI	0.081	0.078	0.144	0.562	0.574
Employment Status → CI	HI	0.125	0.103	0.155	0.806	0.420
	MI	0.086	0.076	0.109	0.787	0.432
	LI	-0.220	-0.206	0.219	1.004	0.315
Employment Status → DI	HI	0.093	0.095	0.084	1.108	0.268
	MI	0.074	0.077	0.108	0.684	0.494
	LI	0.128	0.131	0.178	0.718	0.473
Gender → CI	HI	0.086	0.079	0.107	0.804	0.422
	MI	0.198	0.198	0.102	1.940	0.053
	LI	0.034	0.012	0.141	0.238	0.812
Gender → DI	HI	0.229	0.230	0.110	2.083	0.051
	MI	0.121	0.124	0.091	1.327	0.185
	LI	0.085	0.078	0.111	0.767	0.443
VR usage → CI	HI	0.042	0.054	0.113	0.368	0.713
	MI	-0.115	-0.108	0.097	1.189	0.235
	LI	-0.190	-0.188	0.125	1.518	0.129
VR usage → DI	HI	-0.044	-0.050	0.093	0.468	0.640
	MI	-0.073	-0.077	0.080	0.911	0.362
	LI	0.058	0.056	0.119	0.483	0.629

Source: Author's own elaboration based on PLS output.