Journal of Business Research 217 (2026) 116432



Contents lists available at ScienceDirect

Journal of Business Research

journal homepage: www.elsevier.com/locate/jbusres



Exploring the impact of virtual reality on voluntourism engagement and well-being☆

Mariana Berga Rodrigues, Sandra Maria Correia Loureiro *, Ricardo Godinho Bilro

ISCTE-Instituto Universitário de Lisboa and Business Research Unit (BRU-Iscte), Av. Das Forças Armadas, 1649-026 Lisbon, Portugal

ARTICLE INFO

Keywords:
Well-being
Virtual reality
Voluntourism
Willingness to engage
Self-congruence
Self-determination theory

ABSTRACT

Immersive technologies are increasingly used in promotional contexts. However, their potential to foster prosocial behaviors remains underexplored. This study examines how virtual reality (VR) shapes willingness to engage in voluntourism and how this willingness relates to psychological well-being. Across four studies using netnography, experiment, focus group, and structural modeling, we develop and test an integrative framework grounded in self-determination and self-congruence theories. Study 1 identifies perceived (in)authenticity and curiosity as key motivational pathways. Study 2 demonstrates that VR increases willingness to engage indirectly through these mechanisms and that the authenticity pathway weakens among individuals higher in cultural adventurousness and aspiring indulger orientation. Studies 3 and 4 reveal that self-congruence positively predicts willingness to engage, whereas moral obligation is negatively associated with it. Finally, willingness to engage positively relates to psychological well-being. These findings extend research on immersive technology and voluntourism by showing how VR-based appeals can strengthen prosocial engagement.

1. Introduction

Immersive technologies are reshaping how individuals engage with brands, organizations, and social causes, creating new pathways to influence attitudes and behaviors (Kalender & Guzmán, 2025). Among these, virtual reality (VR) stands out as the most immersive, generating lifelike environments through head-mounted displays that evoke a heightened sense of telepresence (Barta et al., 2025; Mishra et al., 2021). Consequently, VR has been widely examined in marketing and consumer research, demonstrating its effectiveness in enhancing tourism experiences (Flavián et al., 2020; Leveau & Camus, 2023), strengthening brand engagement (Hilken et al., 2022), increasing purchase intentions (Lee et al., 2025), and stimulating charitable giving (Kristofferson et al., 2022).

Although significant progress has been made, the potential of VR to influence prosocial motivations and volunteering behaviors remains largely unexplored (Atzeni et al., 2022; Kandaurova & Lee, 2019) (see Appendix A.1 for an overview of existing research). This lack of attention is striking because nonprofit organizations increasingly adopt VR to evoke empathy and moral responsibility, as illustrated by UNICEF's Clouds Over Sidra (2015) and PETA's Eye to Eye (2018) (Yoo & Drumwright, 2018; Kandaurova & Lee, 2019). By immersing users in simulated environments that mirror pressing social challenges, VR has the potential to heighten awareness and encourage willingness to engage in voluntourism, a form of tourism that combines travel with volunteer work to support local communities (Foller-Carroll & Charlebois, 2016).

Despite the rising popularity of voluntourism and the growing use of VR in social campaigns, three critical gaps persist in the literature. First, prior research on VR in marketing primarily focuses on consumer behavior outcomes (e.g., purchase intentions, brand engagement) (Cowan & Ketron, 2019; Rather et al., 2024), rather than prosocial engagement. Whether and how VR motivates individuals to participate in voluntourism remains unclear. Second, studies on voluntourism broadly examine destination attributes and traveler motivations but rarely incorporate psychological mechanisms or immersive technologies that can trigger these motivations (Lorente et al., 2024; Blaer, 2024). Third, although psychological theories such as self-determination (Deci & Ryan, 2000) and self-congruence (Sirgy, 1982) have been applied to volunteering and well-being (Zarantonello et al., 2024), no research integrates these frameworks to explain how VR experiences activate intrinsic needs and self-identity processes to foster willingness to engage

☆ This article is part of a special issue entitled: 'Immersive Technologies' published in Journal of Business Research.

* Corresponding author.
E-mail addresses: mariana.o.b.rodrigues@gmail.com (M.B. Rodrigues), sandramloureiro@netcabo.pt (S.M.C. Loureiro), bilro.ricardo@gmail.com (R.G. Bilro).

https://doi.org/10.1016/j.jbusres.2026.116432
Received 27 March 2025; Received in revised form 22 July 2026; Accepted 23 July 2026
Available online 30 July 2026
0148-2963/© 2026 The Author(s). Published by Elsevier Inc. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/).

in voluntourism and enhance individual well-being.

Guided by this perspective, this paper addresses two research questions: (i) What motivations drive individuals' willingness to engage in voluntourism programs and (ii) how do self-identity processes shape willingness to engage in voluntourism and, in turn, individual well-being? To answer these questions, we adopt a multimethod approach (Venkatesh et al., 2013) across four studies. Study 1 uses netnography (Kozinets, 2015) to analyze online discussions and volunteer testimonials, uncovering real-world motivations. Study 2 employs an experiment to examine how VR shapes voluntourism motivation through the lens of self-determination. Study 3 relies on a focus group with individuals experienced in socially responsible initiatives to explore how self-congruence links willingness to engage in voluntourism with well-being. Finally, Study 4 combines VR stimuli with quantitative measures to test relationships among moral obligation, self-congruence, willingness to engage in voluntourism, and well-being. Two studies (Studies 2 and 4) draw on the VR documentary *Komodo: A Paradise Under Pressure*, which highlights environmental challenges in Komodo National Park, to examine VR's role in shaping voluntourism motivations and outcomes.

This research advances the literature in four ways. First, it extends VR research beyond consumer behavior and brand engagement (e.g., Cowan & Ketron, 2019; Rather et al., 2024) to prosocial behavior, demonstrating how immersive technology can foster social responsibility and willingness to engage in voluntourism. Second, it provides empirical evidence on voluntourism's contribution to psychological well-being, positioning it as both an altruistic activity and a source of personal fulfillment, consistent with emerging well-being research (e.g., Balderjahn et al., 2023; Zarantonello et al., 2024). Third, by contrasting self-determination and self-congruence, it clarifies whether these motivations operate independently, complementarily, or hierarchically in driving voluntourism. Finally, it offers practical insights for organizations seeking to design VR-based campaigns that resonate with individuals' psychological needs and self-perceptions, thereby enhancing participation and well-being.

2. Literature review

2.1. Well-being

Subjective well-being (SWB) has three key characteristics. First, it is subjective and depends on the individual's experience, focusing on personal judgments rather than criteria created by researchers (Diener et al., 1985). Second, it includes positive aspects, not only the absence of negative factors. Third, SWB involves a global assessment of one's life rather than a narrow evaluation of specific domains (Diener, 1994).

Consumers continuously appraise events, life circumstances, and themselves (Diener, 1994). These universal appraisals lead to emotional reactions that can be pleasant or unpleasant, according to Lazarus's theory (1991). Pleasant experiences are regarded as desirable and valuable, leading consumers to perceive their lives more positively (e.g., Dennis et al., 2016; Loureiro et al., 2025; Zarantonello et al., 2024). This perception is based on a predominance of positive appraisals of life events and circumstances, whereas unhappy individuals who view most aspects of their lives as harmful or obstructive to their goals (Diener, 1994).

SWB is viewed from different perspectives, including ethical, theological, political, economic, and psychological perspectives (e.g., Dolan et al., 2008; Ryff & Singer, 2008). Three other terms frequently appear in well-being studies: happiness, quality of life, and life satisfaction. Happiness is seen as a temporary mood of joy and elation, reflecting how consumers feel about their current situation and emphasizing positive feelings over negative ones (Zhao et al., 2023). SWB involves two main aspects: the affective (hedonic) aspect–the degree to which one's experiences are pleasant–and the cognitive aspect (contentment), representing the extent to which individuals feel they have achieved their aspirations (Ryan & Deci, 2001; El Hedhli et al., 2013).

Well-being is a consumer's evaluation of their quality of life based on their chosen criteria. Consumers compare their life circumstances to the standards they have set for themselves (Hernandez et al., 2018; Schafer et al., 2013). Socioeconomic status, mental health, relationships, travel, and leisure are among the leading influences on well-being (Salinas-Jiménez et al., 2013; Sirgy et al., 2011). Tourism enhances well-being by creating opportunities for relaxation, cultural exchange, social interaction, and economic value, benefiting tourists and local communities (Kim et al., 2013). Emerging forms of tourism, such as VR-based experiences, can similarly foster immersion and enjoyment, thereby enhancing subjective well-being (Guo et al., 2025; Kim & Hall, 2019; Mandal et al., 2025; Sinha et al., 2025). Regarding volunteer work, including voluntourism, prior research suggests that individuals who volunteer or have volunteered in the past are generally more satisfied with life (Hansen et al., 2018).

Emotional and cognitive evaluations of life contribute to well-being (Diener et al., 2003). Thus, we argue that being engaged in an activity such as volunteering means being emotionally and cognitively connected to helping others. In voluntourism, such engagement may emerge when travelers combine the desire to explore new places with the intention to contribute positively to the communities they visit.

2.2. Willingness to engage

Consumer engagement emphasizes the consumer's active, involved, and co-creational role instead of treating the consumer as a passive recipient of firm initiatives (e.g., Brodie et al., 2011; Hollebeek et al., 2019; Kumar et al., 2010). Brodie et al. (2011) focus on an attitudinal perspective of engagement, highlighting the importance of interactive consumer experiences and co-created value. They define consumer engagement as a psychological state arising from interactive, co-creative experiences with a focal agent or object (e.g., a brand) in service relationships. This engagement is multi-dimensional, encompassing cognitive, emotional, and behavioral aspects.

Similarly, Hollebeek et al. (2014) identify three dimensions of consumer engagement: cognitive processing (the level of relationship with a brand through processing and elaboration), affection (the degree of positive emotional connection with a brand), and activation (the energy, effort, and time spent on a brand). Vivek et al. (2012) highlight the significance of interactions and connections with a brand or product, regardless of purchase intent, and propose a broader view of multidimensional consumer engagement that includes cognitive, emotional, behavioral, and social dimensions. Thus, active involvement and connection of consumers with an organization, activity, or cause constitute the engagement process. This active willingness to participate in specific activities or behaviors depends on personal motivation or interest, personality traits, emotional responses, and past experiences (Schwartz-Tayri, 2021).

Voluntourism is an example of an activity that creates engagement (Blaer, 2024; Krasniqi, 2024; Gruber & Deschênes, 2024). Research on volunteer engagement predominantly takes a human resources management approach, leaving its marketing perspective underexplored (Fernandes & Matos, 2023). Our research adopts a marketing lens, positioning volunteer engagement as a challenge of attraction and retention (Mitchell & Clark, 2021). Thus, volunteering is not only an altruistic act but also a means of self-expression for individuals (Shirahada & Wilson, 2023), while nonprofit organizations should strategically align their offerings to meet volunteers' needs and expectations, enhancing their overall experience (Randle & Dolnicar, 2011).

2.3. Self-determination

Self-Determination Theory (SDT) is a widely recognized framework for understanding human motivation (Deci & Ryan, 2000, 2008). The theory is built upon three fundamental principles: (1) individuals are

naturally proactive in regulating their drives and emotions, (2) they possess an innate inclination toward growth and personal development, and (3) humans have an inherent potential for optimal development and actions, which require supportive conditions (Ryan & Deci, 2017).

Motivation is the internal psychological process that drives and sustains individual behavior, guiding it toward the achievement of specific goals (Deci & Ryan, 1985). The SDT distinguishes between intrinsic and extrinsic motivation, emphasizing the natural human tendency to engage in activities driven by interest and enjoyment rather than external incentives (Ryan & Deci, 2019). Intrinsic motivation arises when activities fulfill fundamental psychological needs: competence (a sense of mastery and effectiveness), autonomy (the ability to make self-directed choices), and relatedness (a feeling of connection and belonging) (Ryan & Deci, 2000, 2017). Fulfilling these inherent needs influences individual motivation, personal growth, and overall well-being (Su et al., 2022). Extrinsic motivation, however, means engaging in actions to achieve outcomes separate from the activity itself, often influenced by external pressures or rewards (Ryan & Deci, 2019). A specific form of extrinsic motivation, known as external regulation, occurs when behaviors are performed primarily to meet external demands or obtain tangible rewards, such as monetary compensation (Ryan & Deci, 2000).

Meeting the psychological needs for autonomy, competence, and relatedness boosts well-being, enjoyment, and motivation in various contexts, including sports and exercise (Puente & Anshel, 2010), participation in socially responsible initiatives (van Schie et al., 2019), destination choices (Su et al., 2022), and immersive technology use (Reer et al., 2022).

However, further research is needed to understand how VR influences individuals' intentions to visit locations after virtual experiences (Kim et al., 2020; Uslu & Tosun, 2024). This study uses SDT to explore how experiencing a promotional voluntourism video in VR can increase willingness to engage in voluntourism by appealing to intrinsic and extrinsic motivations.

2.4. *Self-congruence*

Self-congruence means the alignment between an individual's self-image and the image of another entity (Japutra et al., 2019; Sirgy, 1982). Self-congruence represents the extent to which a person perceives a brand or product's image or personality to match their own self-concept (Wallace et al., 2017; Zogaj et al., 2021).

Self-congruence involves actual and ideal components (Malär et al., 2011; Zhu et al., 2019). The actual self reflects how individuals see themselves, while the ideal self represents who they aspire to be – the "perfect me". Both are driven by self-esteem and the desire for self-improvement (Gough et al., 1978). As virtual experiences become more immersive, it is relevant to investigate self-congruence in these settings. However, few studies (Elmashhara et al., 2024; Suh et al., 2011) explore how alignment with one's actual or ideal self influences engagement with virtual content. This highlights the need to examine self-congruence in VR, particularly in the context of voluntourism promotion.

Consumer behavior is often directed toward enhancing one's self-concept, as brands and products serve as personality enhancers, helping individuals express themselves better (Grubb & Grathwohl, 1967). Individuals with high self-congruence are expected to show positive behavior toward a brand, product, or cause, whereas those with low self-congruence are likely to exhibit less favorable behavior (Wallace et al., 2017). Higher self-congruence leads to stronger emotional bonds between consumers and brands or causes, resulting in higher engagement (Giakoumaki & Krepapa, 2020).

The alignment between an individual's self-concept and a volunteer organization's values plays a crucial role in fostering volunteer engagement. Volunteer engagement thrives when strong value congruence exists between the organization and its volunteers (Penner, 2004; Fernandes & Matos, 2023). Thus, when individuals perceive a nonprofit organization's values and characteristics as aligned with their own, their involvement in the organization becomes more than just an activity; it becomes an extension of their identity (Fernandes & Matos, 2023).

The rise in voluntourism can be driven by consumers' growing desire to use resources as a form of self-expression (Cherrier, 2007). This extends to purchasing goods and experiences, including tourism, that align with their actual or ideal self-image (Beerli et al., 2007). Thus, the closer a destination's image aligns with an individual's self-concept, the more likely they are to visit that destination (Ong et al., 2014).

3. Overview of the studies

This research employed a sequential mixed-methods approach (Venkatesh et al., 2013) in which each study informs and strengthens the next, creating a cumulative pathway toward the overall research objectives (see Fig. 1). The design integrates qualitative exploration and quantitative testing to explain how VR influences motivations for voluntourism and how willingness to engage in voluntourism affects individual well-being.

Study 1 serves as the exploratory foundation. Using a netnographic approach (Kozinets, 2015), we analyze online discussions and volunteer testimonials to uncover the core motivations that drive willingness to participate in voluntourism programs (Appendix B.1). These emergent motivations provided the conceptual building blocks for subsequent studies by identifying key psychological drivers and relevant measurement constructs.

Study 2 builds directly on these insights through a controlled experiment that examines how VR exposure shapes the motivations identified in Study 1. By validating the qualitative findings in a causal setting, Study 2 tests whether immersive VR experiences amplify self-determined motives and willingness to engage in voluntourism. It also examines cultural adventurousness and aspiring indulger orientation as lifestyle-based moderators of these effects, clarifying when the authenticity pathway is more or less influential. Together, Studies 1 and 2 address our first research objective: to understand and empirically verify the motivations influencing individuals' willingness to engage in voluntourism programs and the boundary conditions shaping this process.

Moving from motivations to the role of self, Study 3 explores how self-processes influence willingness to engage in voluntourism and well-being. A focus group composed of individuals with prior experience in socially responsible initiatives and a stated intention to volunteer within the next 12 months provides rich, qualitative data to refine the constructs of self-congruence and moral obligation, as well as to identify potential well-being outcomes. The themes derived from Study 3 inform the development of hypotheses and measurement instruments for the final quantitative test.

Study 4 integrates the entire research stream in a VR-based experiment (see Fig. 2). Using the same 20-minute documentary (Komodo: A Paradise Under Pressure), this study tests the relationships uncovered across the previous studies in a VR-based setting. Specifically, Study 4 examines how moral obligation and self-congruence (concepts refined in Study 3 and initially hinted at in Study 1) influence willingness to engage in voluntourism and whether this willingness enhances psychological well-being. By incorporating the motivations and constructs identified in earlier phases, the final study provides quantitative evidence linking VR exposure, motivational mechanisms, and well-being outcomes.

The 20-minute documentary "*Komodo: A Paradise Under Pressure*" was carefully selected to provide a consistent and controlled stimulus across our experimental studies. This film is available in both fully immersive VR and standard 2D formats with identical narrative content, allowing us to vary only the level of immersion while holding the storyline constant (Kandaurova & Lee, 2019). This unique feature enabled a clean test of the psychological effects of VR (specifically, perceived authenticity and curiosity) without confounding content

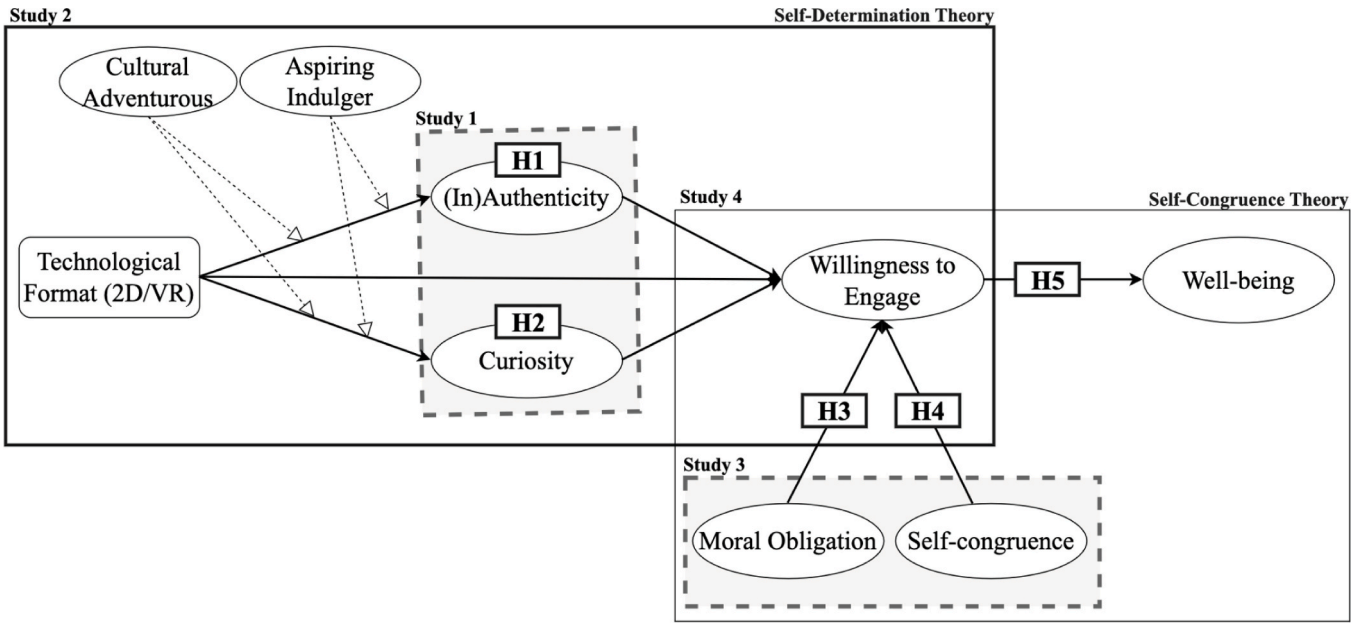


Fig. 1. Proposed Framework. .
Source: Authors' elaboration



Fig. 2. Participants watching *Komodo: A Paradise Under Pressure. Note: Images were captured while participants wore the VR headset, ensuring their faces remained obscured to protect their identity.*

differences. The documentary's focus on the environmental challenges of Indonesia's Komodo National Park offers an ecologically valid yet ethically neutral context that resonates with global audiences and directly relates to the moral obligation and self-congruence constructs central to our research. Its professional production quality and free accessibility further ensured a reliable and immersive experience across devices, strengthening the internal validity of our experimental comparisons.

4. Study 1: Searching for motivations and hypotheses development

4.1. Data collection

Data were extracted from Reddit threads and comments. We focused on two subreddits: r/travel and r/volunteer. In total, 3,114 comments were collected from r/travel and 536 from r/volunteer, resulting in 3,650 Reddit comments overall (see Web Appendix B1 for details). Data extraction was performed using the R package RedditExtractoR. To complement the Reddit data, we also collected and analyzed testimonials and reviews from the websites of voluntourism organizations, specifically GoEco, Global Crossroads, and European Heritage Volunteers. These testimonials provided structured insights from individuals already participating in voluntourism programs. Analyzing both sources allowed us to compare informal, peer-driven discourse with more curated, organization-provided narratives. Once collected, the data were subjected to thematic analysis to identify recurring patterns and key themes.

4.2. Findings and discussion

The data were analyzed using MaxQDA24 and examined through reflexive thematic analysis. We followed a primarily deductive approach, using SDT to assess how intrinsic and extrinsic motivations drive individuals. At the same time, we remained open to inductive discoveries, allowing unexpected themes to emerge and potentially refine existing theoretical perspectives (Proudfoot, 2023). By combining deductive and inductive techniques, we grounded our findings in established literature while accommodating new insights from the data (Kumar et al., 2025).

Overall, we identified curiosity and (in)authenticity as axial codes, as they encapsulate key dimensions shaping voluntourism motivations (see Web Appendix B2 for details). These, in turn, structure the selective codes into two overarching themes: reasons to engage and not to engage. Thus, curiosity reflects a desire for exploration and learning, while (in) authenticity captures two contrasting perspectives: (1) the pursuit of meaningful, authentic, and unique experiences that genuinely contribute to local communities, making voluntourism an appealing choice, and (2) concerns about voluntourism being performative, exploitative, or motivated by social validation rather than genuine impact, which can discourage willingness to engage in such initiatives (see Fig. 3).

Individuals who seek to engage in voluntourism programs are motivated by authentic cultural exchanges. Volunteers actively seeking authentic opportunities – such as genuine conservation efforts or cultural immersion experiences – feel a greater sense of ownership over their contributions. As one individual shared, *"[Volunteering] was the best thing I could ever have done! (…) it felt so enriching to get to know and experience the 'real' Maldives and its culture."* (Testimony, 2021). This testimonial aligns with SDT by showing how authentic engagement in community-based projects fulfills the psychological needs of competence and relatedness. These fulfilled needs enhance intrinsic motivation, making volunteers more likely to participate and remain engaged.

Similarly, another testimony highlighted how authenticity fuels intrinsic motivations by deepening one's connection to local cultures: *"Participating as a volunteer motivates me even more to get to know new places, to be in touch with the local community, and to have authentic experiences while looking for new stories"* (Testimony, 2017). This suggests that the opportunity to engage authentically with communities and immerse oneself in new cultures fosters a strong sense of relatedness, reinforcing the desire to participate in voluntourism when it feels authentic.

Voluntourism is often perceived as inauthentic on volunteer forums and subreddits, and as a result, it is not recommended. The SDT suggests that individuals are most intrinsically motivated when they experience autonomy, competence, and relatedness (Ryan & Deci, 2000). Voluntourism, however, is frequently criticized for lacking these elements. Volunteers may feel restricted by programs that limit their autonomy and genuine contribution. As a Reddit user shares, *"Yes, and [by volunteering] you are also contributing to taking jobs from the locals. You can have authentic experiences while traveling without participating in voluntourism."* (Redditor, 2018). This finding aligns with Guttentag (2009) and Sin (2010), who argue that voluntourism can distort local economies and reinforce income disparities.

Volunteers can also doubt their competence if tasks fail to create a lasting impact. Individuals who initially aspire to volunteer become disillusioned after learning that some voluntourism programs prioritize profit over real aid (Ong et al., 2014). As one Reddit user warned another: "*99.9% of volunteering overseas with wildlife is a scam. And participating in this type of volunteering does NOT look good to any credible rescue organization; rather than directing you into a wildlife-focused career, participating in voluntourism will derail you from it*" (Redditor, 2022).

Voluntourism is often described as an activity that prioritizes short-term experiences over meaningful relationships with local communities,

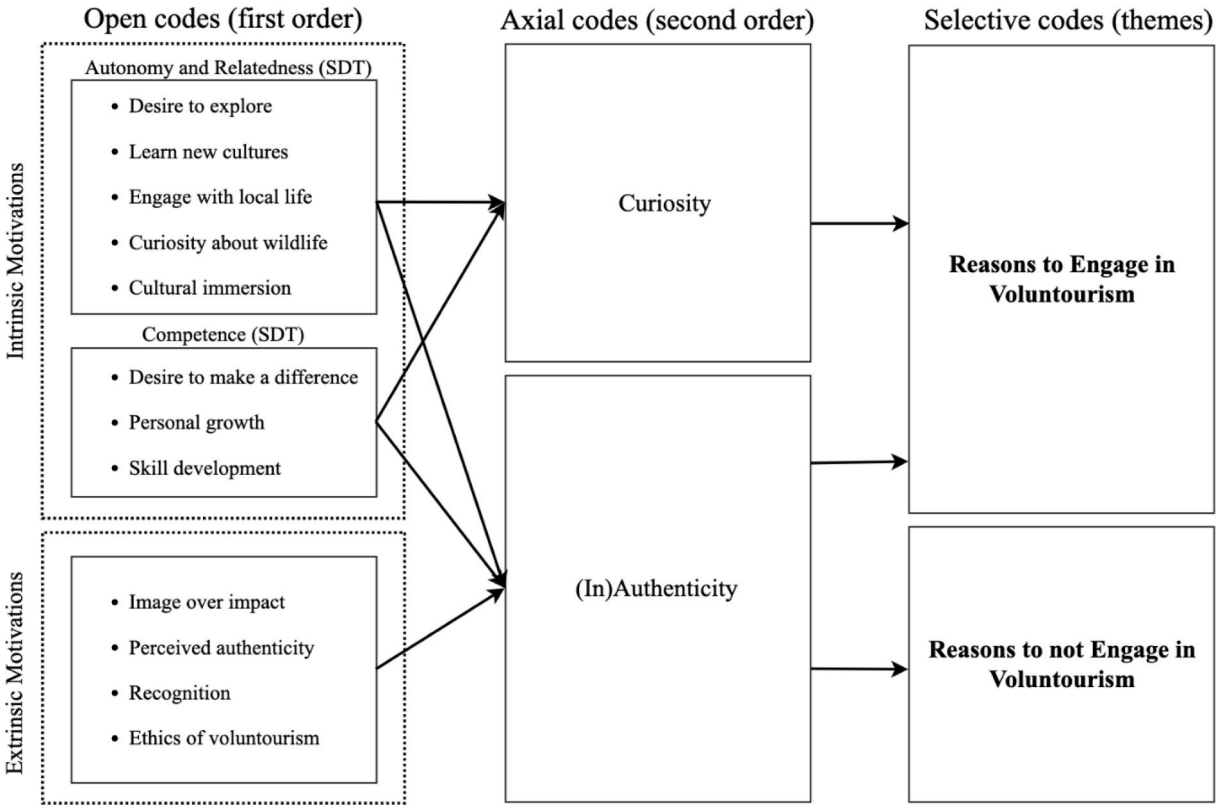


Fig. 3. Study 1 Results. .
Source: Authors' elaboration

undermining the sense of relatedness that fosters genuine motivation: *"I helped a local hill tribe people for 3 months while volunteering in Thailand. One thing I would like to underscore is that you cannot really get much out of it if you are only going to commit to the project for about 2 weeks. I saw many short-term volunteers who came and went while I was there, and all of them had to leave as soon as they were starting to settle in and getting used to the lifestyle there"* (Reddit, 2012). These factors contribute to the inauthenticity surrounding voluntourism, reinforcing its reputation as a practice often driven by extrinsic motivations, such as social validation, rather than by a genuine desire to contribute meaningfully. As one Redditor stated, *"(…) Unfortunately, for many people volunteer tourism in a third world country makes a better status on Facebook than opting for volunteering in a soup kitchen in their own town."* (Redditor, 2015).

Overall, we propose that the perceived (in)authenticity of voluntourism experiences plays a crucial role in individuals' motivation to engage in such activities. The perception of authenticity is shaped by prior knowledge and information about the destination (Kim & Kim, 2020). When this information is perceived as inauthentic, it diminishes individuals' willingness to participate in voluntourism by undermining their intrinsic motivations. One Reddit user said, *"After reading about voluntourism, we kind of quit that dream. We do not want to take jobs from local people; we don't want to pay a lot of money that ends up not being spent on actually helping the wildlife, and we don't wish to come in contact with animals if this will harm them. We want to truly make a real, not fake, impact."* (Redditor, 2021). This highlights how a perceived lack of authenticity can lead to a decline in motivation. Yet, emerging research suggests that virtual experiences can evoke a sense of "realness" akin to that of real-world tourism (Atzeni et al., 2022). This finding implies that VR has more potential than traditional tools to enhance the authenticity of voluntourism programs, reinforcing individuals' willingness to engage. Hence, we hypothesize that creating immersive virtual experiences, such as VR, can address concerns about inauthenticity and foster greater willingness to engage in voluntourism initiatives.

A destination brand's authenticity is shaped by tourists' subjective and internal perceptions, influenced by the destination's consistency over time, credibility, and (in)authenticity (Jiménez-Barreto et al., 2020). Considering the findings of our netnography analysis, we focus on perceived (in)authenticity and curiosity as distinct but related mechanisms through which VR may shape willingness to engage in voluntourism. We argue, in line with SDT, that immersive VR experiences can enhance perceptions of authenticity in voluntourism, thereby fostering curiosity and a deeper emotional connection to the destination. By presenting destinations as genuine, unique, and culturally rich, VR can help individuals feel more competent in their understanding, more connected to the local culture, and more autonomous in choosing meaningful experiences (Barta et al., 2025). This fulfillment of psychological needs increases intrinsic motivation to participate in voluntourism programs, consistent with the principles of SDT. Therefore, we formulate:

H1: Perceived (in)authenticity mediates the relationship between the technological format and willingness to engage in voluntourism.

Curiosity is characterized as the innate tendency to identify, explore, and seek new knowledge and experiences (Kaczmarek et al., 2013; Totsune et al., 2021). This trait plays a fundamental role in personal growth and development, thus aligning with the organismic needs outlined in SDT (Kashdan, 2004). Within voluntourism, curiosity fuels the desire to engage with different cultures, contribute to meaningful projects, and explore unfamiliar environments, reinforcing intrinsic motivation (Deci, 1975; Safa & Von Solms, 2016).

Our findings reveal how volunteers communicate curiosity as a motivating force behind their participation. As one individual described, *"It was my dream to work and to learn in different cultural heritage sites while also collaborating with different people from different cultures. For two weeks, I've lived my dream. Every day, we learned something new, and every day, we learned how to promote and protect cultural heritage"* (Testimony, 2015). This testimony illustrates how curiosity about cultural heritage led to meaningful learning experiences, fulfilling both competence (gaining new knowledge) and relatedness (engaging with diverse individuals).

Similarly, another volunteer expressed how curiosity about their future career and passion for wildlife motivated their participation: *"I've always wanted to become a veterinarian since I was 5 years old, and I have always desired to work at a zoo because I am in love with wildlife, so I thought this internship opportunity was perfect to see if my dream is what I wanted and also to be a part of a volunteer project. During the project, I was able to do so many things I never thought I'd be able to do for years to come" (Testimony, 2015)*. This highlights how curiosity fosters autonomy (pursuing a personal dream) and competence (gaining valuable hands-on experience).

From an SDT perspective, curiosity is closely linked to competence, as individuals are naturally driven to explore and understand their own abilities (Deci, 1975). Voluntourism often provides skill-building opportunities, such as conservation efforts, teaching programs, and cultural preservation projects, which allow individuals to test and refine their skills (Ong et al., 2014). As volunteers acquire knowledge and experience, their sense of competence grows, reinforcing their intrinsic motivation to continue participating. This aligns with research suggesting that the pleasure of developing and sharing knowledge fuels intrinsic motivation (Hau et al., 2013; Murayama, 2022).

Although the specific link between VR and curiosity remains underexplored, the literature suggests that VR, as a media tool, can prompt curiosity (Arnone et al., 2011; Kim & Choo, 2023). Immersive VR experiences lead to heightened enjoyment, arousal, and telepresence levels compared to non-immersive VR environments (Manis & Choi, 2019). Hence, given VR's potential to stimulate curiosity, we argue that this psychological response mediates the relationship between experiencing VR exposure and willingness to engage with voluntourism. As individuals experience the appeal of voluntourism through VR, their curiosity about the program increases their willingness to engage.

According to SDT and our findings, individuals are intrinsically motivated when their needs for autonomy, competence, and relatedness are met (Deci & Ryan, 1985). Curiosity – regarded as the drive to seek new knowledge and experiences – reflects this intrinsic growth tendency, especially in relation to competence.

When voluntourism programs are designed to stimulate curiosity, they enhance intrinsic motivation, leading to deeper involvement and sustained participation. Curiosity, therefore, plays a key role in transforming interest into willingness to engage by supporting the psychological conditions that drive long-term commitment. Consequently, we posit:

H2: Curiosity mediates the relationship between the technological format and willingness to engage in voluntourism.

Voluntourism participants often exhibit adventurous tendencies, curiosity about different cultures, and a desire for meaningful experiences, as one testimony pointed out: "*Personally, I found the project an amazing way to learn about new cultures, to meet people from all over the world, who share the same interests as me, and who are open-minded."* (Appendix B.2). Many seek immersion in unfamiliar environments, engage with local communities, and pursue personal growth. These tendencies align with the cultural adventurousness and aspiring indulger profiles.

This first study highlights curiosity and (in)authenticity as recurring experiential mechanisms through which individuals make sense of, and become motivated by, voluntourism offerings, with willingness to engage emerging consistently as the subsequent behavioral intention. Study 2 builds directly on these insights by translating the two emergent mechanisms into mediators in a causal model, testing whether technological format increases willingness to engage through curiosity and (in) authenticity. In addition, consistent with lifestyle segmentation research suggesting that consumers differ in how they seek novelty, immersion, and self-oriented experiences (Srihadi et al., 2016), Study 2 examines cultural adventurousness and aspiring indulger orientations as

moderators of those effects.

5. Study 2: Willingness to engage through self-determination

5.1. Data collection

We employed a stimulus-based between-subjects experimental design, offering a high degree of control, the ability to manipulate individual variables, and the opportunity to identify causal relationships. Participants were recruited from the downtown area of a European city (an area attracting a diverse mix of travelers, digital nomads, and young professionals) and invited to a coworking space lab nearby for data collection, ensuring access to individuals with varied interests in travel, voluntourism, and cultural experiences. The inclusion criteria were prior experience in socially responsible initiatives and a willingness to engage in voluntourism within the next 12 months.

First, participants were randomly assigned to one of two groups: a control group that viewed stimuli in 2D or an experimental group that experienced the same stimuli in VR. Both groups were tasked with watching a short documentary titled *Komodo: A Paradise Under Pressure*. Second, after viewing the documentary, participants completed a structured questionnaire. All items were measured on a seven-point Likert scale and adapted from established research. (In)authenticity was adapted from Jiménez-Barreto et al. (2020), curiosity from Naylor (1981), and willingness to engage from O'Brien et al. (2020). The lifestyle moderators, cultural adventurousness and aspiring indulger orientation were adapted from Srihadi et al. (2016) (Appendix C.1). Before using this questionnaire, a pilot test was conducted with fifteen respondents to ensure the clarity of its content, design, and structure. Minor adjustments were made.

The final sample consisted of 208 valid participants. The control group comprised 104 participants (62% female, 49% aged between 18 and 24, 51.9% holding a bachelor's degree), and the experimental group consisted of the other 104 participants (51.9% female and 57.7% holding a bachelor's degree).

5.2. Findings and discussion

5.2.1. Serial multiple mediator analysis: H1 and H2 tests

This study employed Hayes Model 6 using the SPSS PROCESS Macro (Hayes, 2022), with 5,000 bootstrap samples and a 95% confidence interval. The analysis examined the total and indirect effects of the independent variable, the technological format (2D or VR), on the dependent variable, willingness to engage, through two mediators: (in) authenticity and curiosity (see Fig. 4).

The results indicate that the total effect of technological format on willingness to engage is significant (B = 0.9079, SE = 0.1311, 95% CI [0.6697, 1.1884]), as the confidence interval does not include zero. However, the direct effect is not significant (B = 0.1919, SE = 0.1111, p = 0.0857, 95% CI [-0.0272, 0.4110]). The analysis further reveals significant indirect effects. The indirect effect of the technological format on willingness to engage in voluntourism activities through the first mediator, (in)authenticity, is significant (B = 0.1218, BootSE = 0.0561, 95% CI [0.0239, 0.2420]). Additionally, the indirect effect through the second mediator, curiosity, is also significant (B = 0.5534, BootSE = 0.1206, 95% CI [0.3261, 0.8040]), confirming the mediation pathway. Finally, the sequential mediation pathway technological format → (in) authenticity → curiosity → willingness to engage is also significant (B = 0.2327, BootSE = 0.0586, 95% CI [0.1335, 0.3627]).

Overall, these findings demonstrate that the total effect of the technological format on willingness to engage is mediated by (in)authenticity and curiosity, as suggested previously (Arnone et al., 2011; Kim & Choo, 2023). Curiosity emerges as the most influential mediator in the model, as evidenced by the largest indirect effect. Although the direct impact of technological format on willingness to engage is not significant, the indirect effects through curiosity and (in)authenticity highlight their importance as mediators (see Table 1).

5.2.2. Moderated mediation analyses

The results highlight significant moderated mediation effects when (in)authenticity is the mediator, with cultural adventurousness (Model A) and aspiring indulger orientation (Model B) acting as moderators. In Model A, the index of moderated mediation is significant (Index = -0.1010, CI = [-0.1980, −0.0204]), indicating that as cultural adventurousness increases, the indirect effect of the technological format on willingness to engage through perceived (in)authenticity weakens or even becomes negative. Similarly, in Model B, the coefficient of

Table 1
Mediation Analysis Results.

Effects	*β*	*SE*	*95% CI*
Direct Effect			
Technological Format → Willingness to Engage	*0.1919*	*0.1111*	[-0.0272, 0.4110]
Technological Format → (in)authenticity	*1.0609****	*0.1782*	[0.7095, 1.4123]
Technological Format → Curiosity	*0.7483****	*0.1334*	[0.4853, 1.0114]
(in)authenticity → Curiosity	*0.2966****	*0.0482*	[0.2016, 0.3916]
(in)authenticity → Willingness to Engage	*0.1148***	*0.0407*	[0.0346, 0.1950]
Curiosity → Willingness to Engage	0.7395***	*0.0542*	[0.6327, 0.8463]
Indirect Effect			
Technological Format → (in)authenticity → Willingness to Engage	*0.1218*	*0.0561*	*[0.0239, 0.2420]*
Technological Format → Curiosity → Willingness to Engage	*0.5534*	*0.1206*	*[0.3261, 0.8040]*
Technological Format → (in)authenticity → Curiosity → Willingness to Engage	*0.2327*	*0.0586*	*[0.1335, 0.3627]*
Total Effect	0.9079	0.1311	[0.6697, 1.1884]

Note: β = Unstandardized Beta; SE=Standard Error; CI=Confidence Interval; *** p < 0.001, ** p < 0.01, * p < 0.05.

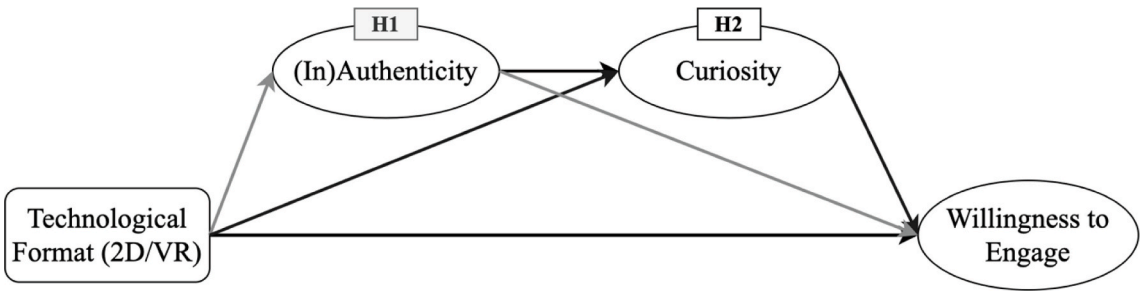


Fig. 4. Mediation Analysis: Model 6. .
Source: Authors' elaboration

moderated mediation is also significant (Index = -0.0595, CI = [-0.1242, −0.0076]), suggesting that aspiring indulger orientation moderates the mediation effect of (in)authenticity. However, the effect is weaker compared to Model A. These findings emphasize the importance of both moderators in shaping the pathway through (in)authenticity, with cultural adventurousness exhibiting a slightly stronger moderating influence, as suggested in Study 1.

In contrast, when curiosity serves as the mediator, neither cultural adventurousness (Model C) nor aspiring indulger (Model D) produced significant moderated mediation effects. The indices for both models (Model C: Index = 0.1633, CI = [-0.0390, 0.3610]; Model D: Index = 0.0991, CI = [-0.0804, 0.2910]) include zero, indicating non-significant interactions (Appendix C.2). Therefore, although cultural adventurousness and the aspiring indulger profile significantly moderated the (in) authenticity pathway, these effects were pathway-specific and did not extend to the curiosity mechanism. These findings clarify the role of the lifestyle moderators in our conceptual framework (Fig. 1). Cultural adventurousness and aspiring indulger orientation act as boundary conditions of the pathway linking technological format to willingness to engage in voluntourism. Both moderate the effect operating through perceived (in)authenticity, but not the curiosity pathway. Thus, these moderators refine the self-determination component of the framework by showing for whom authenticity-based VR appeals are more or less influential.

6. Study 3: Searching for self-congruence and hypothesis development

6.1. Data collection

We established a focus group comprising individuals familiar with tourism and actively engaged in volunteer activities. The inclusion criteria for the participants were prior experience in socially responsible initiatives, willingness to engage in voluntourism within the next 12 months, and fluency in English (as the focus group was conducted in English) (see Table 2 for participant profiles). Selecting individuals with such backgrounds aligns with methodological recommendations to recruit participants who can meaningfully evaluate the subject matter, ensuring that their insights are informed and contextually grounded (Grant & Davis, 1997). The discussion followed a semi-structured format, as the literature indicates that less structured approaches are more suitable for exploratory research (Morgan et al., 1998), allowing participants to express their perspectives more freely. Nevertheless, the focus group was guided by a script (Pearse, 2019) specifically designed for this study (see Appendix D.1). This script included open-ended questions about motivations for engaging in voluntourism and the ways in which such initiatives influence personal well-being.

The focus group session was transcribed and analyzed using content analysis (Elo & Kyngäs, 2008) with the support of MaxQDA24. The researchers independently examined the transcripts to extract codes (Krueger & Casey, 2015). A strong consensus was achieved during the discussions, and any discrepancies were resolved through further dialogue. This analytical approach facilitated the detection of code families that systematically grouped the varied elements emerging from the dataset (Appendix D.2).

Table 2
Study 3: Focus group sample profile.

Participant	Gender	Age	Previous Experience in volunteering	Master's Degree
A	Female	22	Occasionally	Hospitality and Tourism Management
B	Male	23	Occasionally	Hospitality and Tourism Management
C	Female	21	Regular	Hospitality and Tourism Management
D	Male	24	Occasionally	Hospitality and Tourism Management
E	Female	25	Regular	Hospitality and Tourism Management
F	Male	22	Occasionally	Hospitality and Tourism Management
G	Female	23	Occasionally	Hospitality and Tourism Management
H	Male	24	Regular	Hospitality and Tourism Management

6.2. Findings and discussion

Our content analysis identified ten distinct codes (ordered by relevance): personal values and beliefs, self-congruence, well-being, moral obligation, environmental concerns, personal development, social recognition, empathy and compassion, community engagement, and social responsibility (see Appendix D.3).

Participants consistently associated voluntourism with the first four concepts. Personal attitudes and beliefs emerged as a dominant theme, as anticipated given the study's nature (Kuanr et al., 2020; Nguyen et al., 2022). Most individuals engage in voluntourism due to their intrinsic, inherent attitudes toward life and a strong belief in helping others. Notably, a key novel insight from this analysis is the core relationship between personal values and moral obligation. Moral obligation refers to the sense of duty individuals feel to act ethically and contribute to the well-being of others. This construct involves choosing right over wrong and striving for the greater good (Steinberg, 2020; Zimmerman, 1996).

Participants described moral obligation as a meaningful driver of their interest in voluntourism, framing it as an internal standard rooted in personal values and beliefs. Consistent with principles of good citizenship, fairness, and responsibility (Shaw et al., 2016), moral obligation can guide prosocial judgment and motivate individuals to act in ways that benefit others (Barbarossa & De Pelsmacker, 2016). This pattern was reflected in participants' accounts, which emphasized a duty to act in ways that are value-consistent, for example: "*I feel an almost inherent moral obligation to act in ways that align with my personal values*" (Participant A). In the context of voluntourism, individuals who feel a stronger duty to contribute to social or environmental causes may therefore be more willing to participate in programs perceived as ethically meaningful. Thus, we hypothesize:

H3: Moral obligation positively influences willingness to engage in voluntourism programs.

The discussion revealed that voluntourism serves as a means of achieving self-congruence, with many participants highlighting how these experiences enable them to live authentically according to their inner convictions. Volunteer engagement is deeply influenced by the alignment between personal values and an organization's mission (Penner, 2004). When individuals perceive this congruence, volunteering becomes more than an activity; it becomes an expression of their identity (Fernandes & Matos, 2023). One participant explained, "*I volunteer because I want my external actions to mirror my internal beliefs. There's a profound satisfaction in knowing that I'm not just talking about values like empathy and compassion but actively living them out*" (Participant G). Several participants noted that engaging in projects reflecting their ethical commitments reinforced their personal identity and fostered a sense of internal harmony. This alignment between personal beliefs and external actions, rooted in self-congruence, is identified as a key contributor to overall well-being. Therefore, we argue that self-congruence enhances willingness to engage in voluntourism by aligning external actions with internal beliefs. When individuals perceive voluntourism as a reflection of their values – such as empathy, responsibility, or fairness – they experience a sense of authenticity and personal fulfillment. This alignment makes volunteering not just an activity, but an expression of who they are. As a result, they feel more committed, satisfied, and motivated to continue participating. Therefore, we hypothesize:

H4: Self-congruence influences willingness to engage in voluntourism programs.

Volunteering has been recognized as a key component of civic life, contributing to personal fulfillment and overall well-being (Wray-Lake et al., 2019). In this study, well-being emerged as a central theme throughout the session. Participants discussed the emotional and physical benefits of voluntourism, as well as personal development, environmental concerns, and social recognition. The holistic nature of these experiences was perceived as fundamental to promoting personal growth, with many attributing their enhanced sense of fulfillment to active engagement with diverse communities and natural environments. One participant remarked, "*I've experienced moments of intense satisfaction when I see that my actions resonate with my inner values, especially when they contribute to environmental protection or social justice*" (Participant E). Thus, in line with existing literature, our findings emphasize that volunteering is associated with enhancing well-being (e.g., Shirahada & Wilson, 2023; Wray-Lake et al., 2019).

Despite recognizing challenges such as emotional fatigue and logistical constraints, the group collectively agreed that the benefits – ranging from personal development to community empowerment – substantially outweighed these difficulties. The session reinforced that voluntourism, when aligned with core personal values, acts as a catalyst for transformation, offering rewards that extend beyond the immediate impact on communities.

Self-congruence theory posits that individuals experience greater well-being when their actions align with their self-identity and personal values. In the context of voluntourism or volunteering, participation becomes more than an activity; it becomes a way of living authentically. When individuals see their volunteer work as a reflection of who they are and what they believe in, they experience a sense of internal harmony and purpose. Building on the theory and the focus group findings, we argue that willingness to engage in volunteering activities is associated with anticipated well-being, as individuals expect such engagement to create a lasting sense of fulfillment and purpose, ultimately enhancing overall well-being (Shirahada & Wilson, 2023):

H5: Willingness to engage in voluntourism influences well-being.

Study 3 extends the qualitative foundation of our research by clarifying how self-related processes shape willingness to engage in voluntourism and its potential outcome. Participants frame voluntourism as congruent with who they are and report psychological benefits associated with anticipated or past involvement, suggesting that well-being is a consequential outcome. These themes inform our conceptual model and are formalized into testable hypotheses in Study 4. Accordingly, the subsequent study operationalizes the constructs refined here and provides a quantitative test of the proposed relationships in a VR-based experimental setting.

7. Study 4: Well-being through willingness to engage

7.1. Data collection

This study explored the influence of moral obligation (based on Ogiemwonyi & Jan 2023) and self-congruence (adapted from Sirgy et al., 1997) on individuals' willingness to engage (adapted from O'Brien et al., 2020) in voluntourism and examined how willingness to engage in voluntourism contributes to well-being (based on Sirgy et al., 2011) (see Appendix E.1). All measures were assessed using a 7-point Likert scale. We employed SmartPLS v.4 software, which enabled us to use partial least squares structural equation modeling (PLS-SEM) to predict well-being. Before distributing the questionnaire, a pilot test was conducted with 15 respondents to ensure its clarity, content, design, and structure. Minor adjustments were made.

As in Study 2, participants were recruited from the downtown area of a European city and invited to a nearby coworking space lab for data collection. As in Study 2 and Study 3, the inclusion criteria included prior experience in socially responsible initiatives and a willingness to engage in voluntourism within the next 12 months. Participants were invited to experience the short documentary "*Komodo: A Paradise Under Pressure*" before completing a questionnaire. A total of 200 individuals participated. The sample was gender-balanced, with 54.5% female participants. Most participants were aged between 18 and 25 (44.5%) and 26 and 35 (25%). Regarding education, the majority had either a bachelor's degree (41.5%) or a master's degree (37.5%). Education was also included as a control variable, given evidence of a potential relationship between education and well-being (e.g., Yu, 2014; Moussa & Ali, 2022).

7.2. Findings and discussion

We analyzed psychometric properties using factor loadings, Cronbach's alpha, composite reliability, and average variance extracted (AVE). Factor loadings above 0.70 were considered acceptable (Hair & Sarstedt, 2021), and both Cronbach's alpha (CA) and composite reliability (CR) values exceeded 0.70, confirming reliability (Hair et al., 2019) (Appendix E.2). Convergent validity was established with AVE values above 0.50, while discriminant validity was verified using the Fornell-Larcker criterion (square root of AVE exceeding inter-construct correlations) and the Heterotrait-Monotrait (HTMT) ratio (Appendix E.3), which remained below 0.90 (Hair et al., 2019). Additionally, variance inflation factor values were below 3.33, indicating no multicollinearity issues (Appendix E.4). The results confirmed strong internal consistency, reliability, and validity across all variables. The fit indices showed a good fit (SRMR = 0.066, $\chi 2 = 581.377$, NFI = 0.856).

Regarding the path coefficients and their significance levels (see Table 3), the direct effects reveal that willingness to engage is negatively associated with moral obligation ($\beta = -0.251$, $p < 0.001$) and positively associated with self-congruence ($\beta = 0.726$, $p < 0.001$), with small effect sizes (Cohen, 1988). In other words, both paths are statistically significant, yet each predictor accounts for only a small incremental share of the variance in willingness to engage after controlling for overlap with other variables. Contrary to H3, moral obligation is negatively associated with willingness to engage in voluntourism, indicating that H3 is not supported. This finding shows that moral obligation is a significant predictor of willingness, but its effect operates in the opposite direction to the theorized positive relationship. By contrast, self-congruence positively influences willingness to engage, supporting H4 (Barbarossa & De Pelsmacker, 2016; Fernandes & Matos, 2023). While Study 3 identifies moral obligation as a salient evaluative consideration in voluntourism, Study 4 clarifies that its quantitative association with willingness to engage is negative.

H5 is also supported: willingness to engage positively affects well-being ($\beta = 0.736$, $p < 0.001$), as suggested previously (Wray-Lake et al., 2019), with a medium effect size. The mediation effects reveal two opposing influences on well-being. Moral obligation has a significant negative indirect effect through willingness to engage [$\beta = -0.185$, $p < 0.001$, CI = (−0.255, −0.109)]. In contrast, self-congruence has a significant positive indirect effect through the willingness to engage [$\beta = 0.534$, $p < 0.001$, CI = (0.448, 0.617)]. Finally, the control variable education [$\beta = -0.041$, $p = 0.437$, CI = (−0.144, 0.060)] does not have a significant effect.

8. Overall discussion of results

This research offers a multi-method investigation into how immersive technology and self-related processes jointly shape willingness to engage in voluntourism and well-being. Across four interconnected studies, we demonstrate that VR does more than provide an engaging promotional format: it activates psychological mechanisms that influence motivations, moral considerations, and ultimately, individuals' sense of well-being. By integrating self-determination theory and self-congruence theory, our findings advance understanding of how technology-driven experiences foster prosocial action and personal

Table 3
Structural results.

Relationship	β	STDEV	T statistics	P values	Bias Corrected Confidence Interval 2.5%	97.5%	f^2	Hypothesis
Direct Effect								
Moral obligation → Willingness to engage	−0.251	0.054	4.617	0.000	−0.350	−0.144	0.132	H3: not supported
Self-congruence → Willingness to engage	0.726	0.039	18.751	0.000	0.644	0.797	1.102	H4: supported
Willingness to engage → Well-being	0.736	0.036	20.556	0.000	0.662	0.802	1.182	H5: supported
Indirect Effect								
Moral obligation → Willingness to engage → Well-being	−0.185	0.039	4.740	0.000	−0.255	−0.109		
Self-congruence → Willingness to engage → Well-being	0.534	0.043	12.322	0.000	0.448	0.617		
	R^2	Q^2predict						
Well-being	0.542	0.384						
Willingness to engage	0.533	0.524						

Note: STDEV − Standard Deviation; f^2 − effect size.

fulfillment.

Results from Studies 1 and 2 indicate that technological format (VR versus 2D) increases willingness to engage in voluntourism indirectly, by enhancing perceived authenticity and, in turn, curiosity. This sequential mediation reveals that immersive technology shapes how people experience a social issue, rather than merely offering a more vivid representation of it. Building on prior tourism research on presence and realism (Atzeni et al., 2022), our findings suggest that VR generates a richer sense of "being there," thereby legitimizing the experience and creating a cognitive space for exploration. Curiosity emerges as a key motivational bridge, echoing evidence that curiosity is a powerful trigger of exploratory behavior (Arnone et al., 2011; Kim & Choo, 2023). Importantly, this pattern underscores that simply adopting VR is insufficient; organizations must design content that enhances authenticity and stimulates curiosity to translate immersive experiences into willingness to engage in voluntourism.

The moderated mediation findings further refine this process by showing that the authenticity pathway varies across lifestyle orientations. Cultural adventurousness and aspiring indulger orientation weaken the indirect effect of technological format on willingness to engage through perceived (in)authenticity, but not through curiosity. Thus, VR-based voluntourism appeals are less dependent on authenticity cues for individuals already oriented toward novelty, cultural exploration, or experiential consumption. These results identify lifestyle orientations as boundary conditions of the self-determination pathway.

Studies 3 and 4 reveal that self-related motives play distinct roles in voluntourism willingness. While self-congruence positively predicts willingness to engage, moral obligation shows a significant negative association, contrary to H3. This finding suggests that, in ethically complex contexts such as voluntourism, moral obligation may function less as a direct motivational force than as an evaluative lens that heightens scrutiny of whether participation is genuinely beneficial, appropriate, and aligned with responsible helping.

Consistent with research linking prosocial behavior to personal happiness (Wray-Lake et al., 2019), our results demonstrate that voluntourism contributes to psychological well-being. By satisfying autonomy, competence, and relatedness needs (Deci & Ryan, 2000) and reinforcing self-consistent moral identities, voluntourism offers benefits that contrast sharply with the diminished well-being associated with materialistic consumption (Dittmar et al., 2014). The finding that VR can indirectly enhance well-being by fostering identity-consistent action represents a novel intersection of technology and positive psychology.

In sum, this research demonstrates that voluntourism is not only a form of prosocial travel but also a psychological journey in which immersive technology, basic psychological needs, and self-identity converge. VR's value lies less in its novelty and more in its ability to satisfy needs for autonomy, competence, and relatedness and to affirm moral self-concepts, thereby transforming a technological experience into meaningful social action and enhanced well-being.

9. Conclusions and implications

9.1. Theoretical implications

This research advances the literature by integrating SDT, self-congruence theory, and VR technology within the context of voluntourism, thereby offering new insight into how immersive experiences foster willingness to engage in voluntourism and psychological well-being. Instead of treating these perspectives as parallel explanations, our findings reveal how they operate jointly to explain why technologically mediated experiences can motivate action and enhance individual fulfillment.

Our results extend SDT (Deci & Ryan, 2000) beyond traditional prosocial settings by showing that VR-enabled voluntourism satisfies the core needs of autonomy, competence, and relatedness in ways that increase willingness to participate. Importantly, we demonstrate that need fulfillment occurs not only through the activity of volunteering itself but also through the pre-experience of immersive exposure. This finding refines SDT by illustrating that technology can act as a "pre-consumption" mechanism that satisfies psychological needs even before individuals commit to action, highlighting a novel route through which marketing interventions can stimulate intrinsic motivation.

Our work also deepens self-congruence theory (Sirgy, 1982) by showing that VR experiences can strengthen alignment between ideal self-concepts and prosocial behavior. Specifically, we demonstrate that immersive exposure can activate self-related processes that shape downstream decisions, with self-congruence emerging as a central pathway through which VR translates into identity-consistent action. The negative association between moral obligation and willingness to engage further refines current understanding of prosocial motivation in voluntourism. Unlike self-congruence, which facilitates participation by aligning voluntourism with the ideal self, moral obligation may trigger more demanding ethical appraisal. In a morally contested context such as voluntourism, a stronger sense of obligation may reduce instead of increase willingness to participate. This finding highlights the need to distinguish between motivational forces that encourage prosocial action and moral standards that may inhibit action when the opportunity itself is perceived as ethically ambiguous.

By examining SDT and self-congruence in a single framework, this study clarifies whether these mechanisms function independently or interactively. Our findings suggest a complementary process: VR heightens authenticity and curiosity, which satisfy psychological needs (SDT) and simultaneously strengthen identity alignment (self-congruence). This dual-motive pathway explains why immersive technology is particularly effective in moving individuals from awareness to action, offering a richer motivational model than either theory provides alone.

Our findings also identify lifestyle-based boundary conditions of this process. Cultural adventurousness and aspiring indulger orientation weaken the authenticity pathway, indicating that VR-based appeals are not equally influential across audiences. This extends our theoretical model by clarifying when authenticity-driven immersive experiences are more or less likely to foster voluntourism willingness.

This research also contributes to the growing literature on immersive technology by showing that VR can serve purposes beyond hedonic consumption or brand engagement (Rather et al., 2024). We demonstrate that VR functions as a psychological catalyst for willingness to engage in voluntourism, fostering authenticity and curiosity that lead to prosocial behavior and well-being. This extends technology research into the domain of social impact marketing, highlighting a new frontier for immersive interventions.

Finally, we broaden our knowledge of voluntourism by linking willingness to engage in voluntourism to enhanced psychological well-being. Prior research has largely examined the motivations behind voluntourism or the ethical dilemmas associated with it (Guttentag, 2009; Ong et al., 2014). Our findings demonstrate that voluntourism provides not only community benefits but also personal growth through the fulfillment of needs and the affirmation of identity. This dual benefit refines the conceptualization of voluntourism as a practice that simultaneously serves collective and individual welfare.

9.2. Managerial implications

Our findings provide a set of evidence-based recommendations for managers, nonprofit organizations, and policymakers seeking to use immersive technology to stimulate willingness to engage in voluntourism and enhance volunteer well-being. These implications are most applicable to audiences with at least some prior openness to socially responsible initiatives or voluntourism-related interest.

First, this research demonstrates that VR influences willingness to engage in voluntourism primarily by increasing perceived authenticity and triggering curiosity, thereby satisfying autonomy and competence needs. For audiences already receptive to socially responsible travel, managers should invest in VR scenarios that replicate the lived realities of host communities, including unscripted or real-time elements, and allow users to explore rather than merely observe. For example, a VR module could enable prospective volunteers to participate in a virtual beach clean-up or school-building project, interact with local stakeholders, and witness tangible outcomes. Among predisposed audiences, such authentic experiences are more likely to spark curiosity and internal motivation than polished but passive simulations.

Because curiosity mediates the impact of authenticity on willingness to engage, campaigns should deliberately structure VR content first to establish credibility and then introduce elements of mystery or challenge. Interactive storylines (such as hidden environmental problems revealed through user exploration or decision points that influence outcomes) can heighten curiosity and sustain attention, ultimately increasing the likelihood of real-world participation. These effects also vary across audience segments. Authenticity-focused VR appeals may be particularly effective for individuals less strongly oriented toward novelty, cultural exploration, or experiential indulgence. For more adventurous or experience-seeking audiences, managers may need to complement authenticity cues with messages emphasizing challenge, discovery, or distinctive participation opportunities.

Our findings also show that moral obligation and self-congruence shape willingness to volunteer in distinct ways. Because moral obligation is negatively associated with willingness to engage, managers should avoid relying primarily on guilt- or duty-based appeals, which may intensify ethical scrutiny instead of encouraging participation. As an alternative, communications should emphasize credible impact, transparency, community benefit, and responsible program design. At the same time, self-congruence positively predicts willingness, suggesting that post-experience communications should help participants connect the VR encounter with identity-consistent values such as social responsibility, environmental stewardship, and personal growth. Pre- and post-VR communications, including emails, social media content, or debriefing sessions, can reinforce this alignment and strengthen commitment.

VR should not operate as a stand-alone attraction. Effective campaigns combine immersive experiences with complementary channels (such as online communities, social media storytelling, or targeted follow-ups) that maintain the psychological momentum generated by the VR session. As such, organizations can invite users who complete a VR experience to join online volunteer forums, sign up for informational webinars, or receive personalized volunteering opportunities that match their expressed interests.

To assess whether VR investments translate into stronger willingness to engage among receptive audiences, managers should track not only traditional metrics (e.g., sign-ups, donations) but also psychological indicators such as perceived authenticity, curiosity, moral obligation, and self-congruence. Post-experience surveys and behavioral analytics (e.g., time spent on interactive elements) can help refine iterative content and assist managers in identifying which features most effectively drive conversion from virtual exploration to real participation. Finally, organizations can leverage VR to onboard and retain volunteers by designing immersive training modules that convey organizational values, cultural norms, and expected tasks. Such modules can strengthen volunteers' sense of competence and relatedness (key SDT needs), leading to sustained volunteer involvement and reduced turnover.

9.3. Limitations

While this research makes significant contributions at the intersection of VR technology, self-determination, and voluntourism, several limitations merit acknowledgment and open avenues for future inquiry. First, our studies examined hypothetical willingness to engage instead of actual participation. Although participants expressed a willingness to engage in voluntourism, they did not necessarily follow through with real-world involvement. This gap may limit the extent to which the observed intentions and anticipated psychological benefits generalize to actual voluntourism participation.

Second, the use of self-report measures and cross-sectional data introduces potential biases and constrains our ability to draw strong causal conclusions. In addition, our samples consisted of individuals with prior experience in socially responsible initiatives and a willingness to engage in voluntourism within the next 12 months. This purposive criterion was appropriate for examining the psychological mechanisms underlying VR-based voluntourism appeals among relevant audiences; however, it also limits the generalizability of the findings. Specifically, the present research does not establish whether VR can generate voluntourism interest among individuals with no prior prosocial involvement, no existing openness to voluntourism, or limited concern for socially responsible travel. As a result, our findings should be interpreted as explaining how VR strengthens and channels willingness among predisposed audiences, rather than how it generates initial willingness to engage among the general public.

Finally, although our VR stimuli were carefully designed to create authentic and engaging experiences, variations in immersion and technological constraints may have influenced participants' perceptions of the experience. The extent to which these simulated environments capture the complexity and unpredictability of real voluntourism settings remains unclear and warrants further research.

9.4. Future research

Future studies can build on these findings by adopting longitudinal and field-based designs that track actual volunteer participation over time. Such approaches would clarify how VR-induced willingness to engage develops into sustained participation and well-being over time,

moving beyond hypothetical scenarios to reveal how intentions translate into sustained behavior. Researchers could also employ enhanced mixed-method designs, integrating objective behavioral data (e.g., participation records, biometric indicators) with qualitative insights to provide a deeper understanding of how psychological needs are fulfilled through real voluntourism experiences. Expanding the diversity of samples across cultures, age groups, and socioeconomic backgrounds can also help test the robustness and generalizability of our findings. Cross-cultural research should account for differences in national culture, language, and the contextual validity of constructs to determine whether the identified mechanisms hold across varied settings.

Future research can also directly compare predisposed and non-predisposed audiences to determine whether VR primarily strengthens existing voluntourism interest or can also create initial openness among individuals with no prior predisposition toward socially responsible initiatives. Experimental designs that contrast participants with varying levels of prior prosocial involvement, voluntourism familiarity, or baseline willingness would help clarify the boundary conditions of VR's persuasive capacity. Additionally, comparative studies of alternative immersive technologies, such as augmented reality or mixed reality, would further clarify whether the psychological processes identified here operate across different levels of sensory engagement or are unique to VR.

Finally, further research can also explore additional mediators and moderators (such as self-efficacy, social influence, and organizational support) to better understand how these factors shape the relationship between VR-induced willingness to engage in voluntourism and well-being outcomes. Field experiments that systematically vary the immersive quality of VR content could yield stronger causal evidence and illuminate the long-term effects on volunteer retention, motivation, and performance.

CRediT authorship contribution statement

Mariana Berga Rodrigues: Writing – original draft, Software, Methodology, Investigation, Funding acquisition, Data curation, Conceptualization. **Sandra Maria Correia Loureiro:** Writing – review & editing, Validation, Supervision, Methodology, Investigation, Conceptualization. **Ricardo Godinho Bilro:** Writing – review & editing, Resources, Methodology, Investigation, Formal analysis, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jbusres.2026.116432.

References

Arnone, M. P., Small, R. V., Chauncey, S. A., & McKenna, H. P. (2011). Curiosity, interest and engagement in technology-pervasive learning environments: A new research agenda. *Educational Technology Research and Development, 59*(2), 181–198. https://doi.org/10.1007/s11423-011-9190-9

Atzeni, M., Del Chiappa, G., & Mei Pung, J. (2022). Enhancing visit intention in heritage tourism: The role of object-based and existential authenticity in non-immersive virtual reality heritage experiences. *International Journal of Tourism Research, 24*(2), 240–255. https://doi.org/10.1002/jtr.2497

Barbarossa, C., & de Pelsmacker, P. (2016). Positive and negative antecedents of purchasing eco-friendly products: A comparison between green and non-green consumers. *Journal of Business Ethics, 134*(2), 229–247. https://doi.org/10.1007/s10551-014-2425-z

Barta, S., Gurrea, R., & Flavián, C. (2025). Augmented reality experiences: Consumer-centered augmented reality framework and research agenda. *Psychology & Marketing, 42*(2), 634–650. https://doi.org/10.1002/mar.22143

Beerli, A., Meneses, G. D., & Gil, S. M. (2007). Self-congruity and destination choice. *Annals of Tourism Research, 34*(3), 571–587. https://doi.org/10.1016/j.annals.2007.01.005

Blaer, M. (2024). Animal rescue tourism: Digital technology-enhanced approaches to support voluntourist engagement, animal welfare and rights. *Tourism Recreation Research, 49*(3), 471–485. https://doi.org/10.1080/02508281.2022.2046991

Brodie, R. J., Hollebeek, L. D., Jurić, B., & Ilić, A. (2011). Customer engagement: Conceptual domain, fundamental propositions, and implications for research. *Journal of Service Research, 14*(3), 252–271. https://doi.org/10.1177/1094670511411703

Cherrier, H. (2007). Ethical consumption practices: Co-production of self-expression and social recognition. *Journal of Consumer Behaviour, 6*(5), 321–335. https://doi.org/10.1002/cb.224

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.

Cowan, K., & Ketron, S. (2019). A dual model of product involvement for effective virtual reality: The roles of imagination, co-creation, telepresence, and interactivity. *Journal of Business Research, 100*, 483–492. https://doi.org/10.1016/j.jbusres.2018.10.063

Deci, E. L. (1975). *Intrinsic motivation*. Plenum.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Deci, E. L., & Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being across life's domains. *Canadian Psychology / Psychologie Canadienne, 49*(1), 14–23. https://doi.org/10.1037/0708-5591.49.1.14

Dennis, C., Alamanos, E., Papagiannidis, S., & Bourlakis, M. (2016). Does social exclusion influence multiple channel use? the interconnections with community, happiness, and well-being. *Journal of Business Research, 69*(3), 1061–1070. https://doi.org/10.1016/j.jbusres.2015.08.019

Diener, E. (1994). Assessing subjective well-being: Progress and opportunities. *Social Indicators Research, 31*(2), 103–157. https://doi.org/10.1007/BF01207052

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71–75. https://doi.org/10.1207/s15327752jpa4901_13

Diener, E., Oishi, S., & Lucas, R. E. (2003). Personality, culture, and subjective well-being: Emotional and cognitive evaluations of life. *Annual Review of Psychology, 54*(1), 403–425. https://doi.org/10.1146/annurev.psych.54.101601.145056

Dittmar, H., Bond, R., Hurst, M., & Kasser, T. (2014). The relationship between materialism and personal well-being: A meta-analysis. *Journal of Personality & Social Psychology, 107*, 879–924. https://doi.org/10.1037/a0037409

Dolan, P., Peasgood, T., & White, M. (2008). Do we really know what makes us happy? a review of the economic literature on the factors associated with subjective well-being. *Journal of Economic Psychology, 29*(1), 94–122. https://doi.org/10.1016/j.joep.2007.09.001

El Hedhli, K., Chebat, J. C., & Sirgy, M. J. (2013). Shopping well-being at the mall: Construct, antecedents, and consequences. *Journal of Business Research, 66*(7), 856–863. https://doi.org/10.1016/j.jbusres.2011.06.011

Elmashhara, M. G., Blazquez, M., & Julião, J. (2024). Stylish virtual tour: Exploring fashion's influence on attitude and satisfaction in VR tourism. *International Journal of Contemporary Hospitality Management, 36*(11), 3774–3793. https://doi.org/10.1108/IJCHM-09-2023-1469

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing, 62*(1), 107–115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

Fernandes, T., & Matos, M. A. D. (2023). Towards a better understanding of volunteer engagement: Self-determined motivations, self-expression needs and co-creation outcomes. *Journal of Service Theory and Practice, 33*(7), 1–27. https://doi.org/10.1108/JSTP-09-2022-0215

Flavián, C., Ibáñez-Sánchez, S., & Orús, C. (2020). Impacts of technological embodiment through virtual reality on potential guests' emotions and engagement. *Journal of Hospitality Marketing & Management, 30*(3), 1–20. https://doi.org/10.1080/19368623.2020.1770146

Foller-Carroll, A., & Charlebois, S. (2016). The attitudes of students and young professionals toward VolunTourism: A study abroad perspective. *International Journal of Culture, Tourism and Hospitality Research, 10*(2), 138–160. https://doi.org/10.1108/IJCTHR-04-2015-0027

Giakoumaki, C., & Krepapa, A. (2020). Brand engagement in self-concept and consumer engagement in social media: The role of the source. *Psychology & Marketing, 37*(3), 457–465. https://doi.org/10.1002/mar.21312

Gough, H. G., Lazzari, R., & Fioravanti, M. (1978). Self versus ideal self: A comparison of five adjective check list indices. *Journal of Consulting and Clinical Psychology, 46*(5), 1085–1091. https://doi.org/10.1037/0022-006X.46.5.1085

Grant, J. S., & Davis, L. L. (1997). Selection and use of content experts for instrument development. *Research in nursing & health, 20*(3), 269–274. https://doi.org/10.1002/(SICI)1098-240X(199706)20:3<269::AID-NUR9>3.0.CO;2-G

Grubb, E. L., & Grathwohl, H. L. (1967). Consumer self-concept, symbolism and market behavior: A theoretical approach. *Journal of Marketing, 31*(4), 22–27. https://doi.org/10.1177/002224296703100405

Gruber, V., & Deschênes, J. (2024). Managing brand relationship plurality: Insights from the non-profit sector. *Journal of Marketing, 88*(6), 24–42. https://doi.org/10.1177/00222429241253193

Guo, F., Li, M., Lin, G., & Zhang, D. (2025). Virtual reality tourism as a therapeutic tool: Assessing the well-being benefits of repeated restorative environment exposures for

individuals with GAD. *Tourism Management, 110*, Article 105178. https://doi.org/10.1016/j.tourman.2025.105178
Guttentag, D. A. (2009). The possible negative impacts of volunteer tourism. *International Journal of Tourism Research, 11*(6), 537–551. https://doi.org/10.1002/jtr.727
Hair, J. F., & Sarstedt, M. (2021). Explanation plus prediction – the logical focus of project management research. *Project Management Journal, 52*(4), 319–322. https://doi.org/10.1177/8756972821999945
Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). Multivariate Data Analysis. Pearson.
Hansen, T., Tolkacheva, N., & Willemse, B. (2018). Volunteering, life satisfaction, and perceived health: A 10-year longitudinal study of older adults in Norway. *Journal of Aging and Health, 30*(8), 1280–1302. https://doi.org/10.1177/0898264317720186
Hau, Y. S., Kim, B., Lee, H., & Kim, Y.-G. (2013). The effects of individual motivations and social capital on employees' tacit and explicit knowledge sharing intentions. *International Journal of Information Management, 33*(2), 356–366. https://doi.org/10.1016/j.ijinfomgt.2012.10.009
Hayes, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (3rd ed.). Guilford Press.
Hernandez, R., Bassett, S. M., Boughton, S. W., Schuette, S. A., Shiu, E. W., & Moskowitz, J. T. (2018). Psychological well-being and physical health: Associations, mechanisms, and future directions. *Emotion Review, 10*(1), 18–29. https://doi.org/10.1177/1754073917697824
Hilken, T., Chylinski, M., Keeling, D. I., Heller, J., de Ruyter, K., & Mahr, D. (2022). How to strategically choose or combine augmented and virtual reality for improved online experiential retailing. *Psychology & Marketing, 39*(3), 495–507. https://doi.org/10.1002/mar.21600
Hollebeek, L. D., Glynn, M. S., & Brodie, R. J. (2014). Consumer brand engagement in social media: Conceptualization, scale development and validation. *Journal of Interactive Marketing, 28*(2), 149–165. https://doi.org/10.1016/j.intmar.2013.12.002
Hollebeek, L. D., Srivastava, R. K., & Chen, T. (2019). S-D logic-informed customer engagement: Integrative framework, revised fundamental propositions, and application to CRM. *Journal of the Academy of Marketing Science, 47*(1), 161–185. https://doi.org/10.1007/s11747-016-0494-5
Japutra, A., Ekinci, Y., & Simkin, L. (2019). Self-congruence, brand attachment and compulsive buying. *Journal of Business Research, 99*, 456–463. https://doi.org/10.1016/j.jbusres.2017.08.024
Jiménez-Barreto, J., Rubio, N., Campo, S., & Molinillo, S. (2020). Linking the online destination brand experience and brand credibility with tourists' behavioral intentions toward a destination. *Tourism Management, 79*, Article 104101. https://doi.org/10.1016/j.tourman.2020.104101
Kaczmarek, L. D., Kashdan, T. B., Kleiman, E. M., Baczkowski, B., Enko, J., Siebers, A., Szäefer, A., Król, M., & Baran, B. (2013). Who self-initiates gratitude interventions in daily life? an examination of intentions, curiosity, depressive symptoms, and life satisfaction. *Personality and Individual Differences, 55*(7), 805–810. https://doi.org/10.1016/j.paid.2013.06.013
Kalender, Y., & Guzmán, F. (2025). What drives consumers to engage in immersive technologies? A consumer metaverser engagement motivation model. *Psychology & Marketing, 42*(3), 921–950. https://doi.org/10.1002/mar.22158
Kim, K., Uysal, M., & Sirgy, M. J. (2013). How does tourism in a community impact the quality of life of community residents? *Tourism Management, 36*, 527–540. https://doi.org/10.1016/j.tourman.2012.09.005
Kim, M. J., & Hall, C. M. (2019). A hedonic motivation model in virtual reality tourism: Comparing visitors and non-visitors. *International Journal of Information Management, 46*, 236–249. https://doi.org/10.1016/j.ijinfomgt.2018.11.016
Kim, M. J., Lee, C. K., & Jung, T. (2020). Exploring Consumer behavior in virtual reality tourism using an extended stimulus-organism-response model. *Journal of Travel Research, 59*(1), 69–89. https://doi.org/10.1177/0047287518818915
Kim, M., & Kim, J. (2020). Destination authenticity as a trigger of tourists' online engagement on social media. *Journal of Travel Research, 59*(7), 1238–1252. https://doi.org/10.1177/0047287519878510
Kim, W. B., & Choo, J. H. (2023). How virtual reality shopping experience enhances consumer creativity: The mediating role of perceptual curiosity. *Journal of Business Research, 154*, Article 113378. https://doi.org/10.1016/j.jbusres.2022.113378
Kozinets, R. V. (2015). *Netnography: Redefined* (2nd ed.). SAGE Publications.
Krasniqi, E. (2024). Engaging refugee volunteers in co-creation: The role of non-profit leadership. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations, 35*(6), 1131–1142. https://doi.org/10.1007/s11266-024-100101-11
Kristofferson, K., Daniels, M. E., & Morales, A. C. (2022). Using virtual reality to increase charitable donations. *Marketing Letters, 33*, 75–87. https://doi.org/10.1007/s11002-021-09601-8
Krueger, R. A., & Casey, M. A. (2015). *Focus groups: A practical guide for applied research* (5th ed.). Sage publications.
Kuanr, A., Pradhan, D., & Chaudhuri, H. R. (2020). I (do not) consume; therefore, I am: Investigating materialism and voluntary simplicity through a moderated mediation model. *Psychology & Marketing, 37*(2), 260–277. https://doi.org/10.1002/mar.21305
Kumar, A., Shankar, A., Hollebeek, L. D., Behl, A., & Lim, W. M. (2025). Generative artificial intelligence (GenAI) revolution: A deep dive into GenAI adoption. *Journal of Business Research, 189*, Article 115160. https://doi.org/10.1016/j.jbusres.2024.115160
Kumar, V., Aksoy, L., Donkers, B., Venkatesan, R., Wiesel, T., & Tillmanns, S. (2010). Undervalued or overvalued customers: Capturing total customer engagement value. *Journal of Service Research, 13*(3), 297–310. https://doi.org/10.1177/1094670510375602
Lee, S., Choi, K., & Kim, M. (2025). Engaging consumers with virtual reality: A moderation role of product types and consumption orientations. *Psychology & Marketing, 42*(3), 655–668. https://doi.org/10.1002/mar.22144
Leveau, P., & Camus, E. S. (2023). Embodiment, immersion, and enjoyment in virtual reality marketing experiences. *Psychology & Marketing, 40*(7), 1329–1343. https://doi.org/10.1002/mar.21822
Lorente, J. M., Küster, I., & Vila, N. (2024). The role of engagement in retaining volunteers. *International Review on Public and Nonprofit Marketing, 21*(6), 1027–1055. https://doi.org/10.1007/s12208-024-00412-x
Loureiro, S., Bilro, R. G., Guerreiro, J., Lee, M. J., & Han, H. (2025). ChatGPT coolness-desirable framework for tourism and hospitality. *Journal of Travel Research. In press.*. https://doi.org/10.1177/00472875251380185
Malär, L., Krohmer, H., Hoyer, W. D., & Nyffenegger, B. (2011). Emotional brand attachment and brand personality: The relative importance of the actual and the ideal self. *Journal of Marketing, 75*(4), 35–52. https://doi.org/10.1509/jmkg.75.4.35
Mandal, K., Morrison, A. M., & Bag, S. (2025). Developing virtual reality tourism for people with dementia based on meeting psychological and behavioural needs. *Tourism Management, 108*, Article 105100. https://doi.org/10.1016/j.tourman.2024.105100
Manis, K. T., & Choi, D. (2019). The virtual reality hardware acceptance model (VR-HAM): Extending and individuating the technology acceptance model (TAM) for virtual reality hardware. *Journal of Business Research, 100*, 503–513. https://doi.org/10.1016/j.jbusres.2018.10.021
Mishra, A., Shukla, A., Rana, N. P., & Dwivedi, Y. K. (2021). From "touch" to a "multisensory" experience: The impact of technology interface and product type on consumer responses. *Psychology & Marketing, 38*, 385–396. https://doi.org/10.1002/mar.21436
Mitchell, S.-L., & Clark, M. (2021). Volunteer choice of non-profit organization: An integrated framework. *European Journal of Marketing, 55*(1), 63–94. https://doi.org/10.1108/EJM-05-2019-0427
Morgan, D. L., Krueger, R. A., & King, J. A. (1998). *The Focus Group Kit (Volumes 1-6)*. In Thousand Oaks, CA, US: Sage. Sage Publications.
Moussa, N. M., & Ali, W. F. (2022). Exploring the relationship between students' academic success and happiness levels in the higher education settings during the lockdown period of COVID-19. *Psychological Reports, 125*(3), 986–1010. https://doi.org/10.1177/0033294121994568
Murayama, K. (2022). A reward-learning framework of knowledge acquisition: An integrated account of curiosity, interest, and intrinsic–extrinsic rewards. *Psychological Review, 129*(1), 175–198. https://doi.org/10.1037/rev0000349
Naylor, F. D. (1981). A state-trait curiosity inventory. *Australian Psychologist, 16*(2), 172–183. https://doi.org/10.1080/00050068108255893
Nguyen, C., Faulkner, M., Yang, S., Williams, J., & Tong, L. (2022). Mind the gap: Understanding the gap between intentions and behaviour in the charity context. *Journal of Business Research, 148*, 216–224. https://doi.org/10.1016/J.JBUSRES.2022.04.044
O'Brien, I. M., Ouschan, R., Jarvis, W., & Soutar, G. N. (2020). Drivers and relationship benefits of customer willingness to engage in CSR initiatives. *Journal of Service Theory and Practice, 30*(1), 5–29. https://doi.org/10.1108/JSTP-08-2018-0186
Ogiemwonyi, O., & Jan, M. T. (2023). The correlative influence of consumer ethical beliefs, environmental ethics, and moral obligation on green consumption behavior. *Resources, Conservation & Recycling Advances, 19*, Article 200171. https://doi.org/10.1016/j.rcradv.2023.200171
Ong, F., Lockstone-Binney, L., King, B., & Smith, K. A. (2014). The future of volunteer tourism in the asia-pacific region: Alternative prospects. *Journal of Travel Research, 53*(6), 680–692. https://doi.org/10.1177/0047287514532365
Pearse, N. (2019). An illustration of deductive analysis in qualitative research. In *18th European Conference on Research Methodology for Business and Management Studies* (pp. 264–270).
Penner, L. A. (2004). Volunteerism and social problems: Making things better or worse? *Journal of Social Issues, 60*(3), 645–666. https://doi.org/10.1111/j.0022-4537.2004.00377.x
Proudfoot, K. (2023). Inductive/deductive hybrid thematic analysis in mixed methods research. *Journal of Mixed Methods Research, 17*(3), 308–326. https://doi.org/10.1177/15586898221126816
Puente, R., & Anshel, M. H. (2010). Exercisers' perceptions of their fitness instructor's interacting style, perceived competence, and autonomy as a function of self-determined regulation to exercise, enjoyment, affect, and exercise frequency. *Scandinavian Journal of Psychology, 51*(1), 38–45. https://doi.org/10.1111/j.1467-9450.2009.00723.x
Randle, M., & Dolnicar, S. (2011). Self-congruity and volunteering: A multi-organization comparison. *European Journal of Marketing, 45*(5), 739–758. https://doi.org/10.1108/03090561111120019
Rather, R. A., Hollebeek, L. D., Loureiro, S. M. C., Khan, I., & Hasan, R. (2024). Exploring tourists' virtual reality-based brand engagement: A uses-and-gratifications perspective. *Journal of Travel Research, 63*(3), 606–624. https://doi.org/10.1177/00472875231166598
Reer, F., Wehden, L.-O., Janzik, R., Tang, W. Y., & Quandt, T. (2022). Virtual reality technology and game enjoyment: The contributions of natural mapping and need satisfaction. *Computers in Human Behavior, 132*, Article 107242. https://doi.org/10.1016/j.chb.2022.107242
Ryan, R. M., & Deci, E. L. (2019). Brick by Brick: The Origins, Development, and Future of Self-Determination Theory. In *Advances in Motivation Science* (Vol. 6, pp. 111–156). Elsevier. Doi: 10.1016/bs.adms.2019.01.001.
Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52*(1), 141–166. https://doi.org/10.1146/annurev.psych.52.1.141

Ryff, C. D., & Singer, B. (2008). Know thyself and become what you are: A eudaimonic approach to psychological well-being. *Journal of Happiness Studies, 9*(1), 13–39. https://doi.org/10.1007/s10902-006-9019-0
Safa, N. S., & Von Solms, R. (2016). An information security knowledge sharing model in organizations. *Computers in Human Behavior, 57*, 442–451. https://doi.org/10.1016/j.chb.2015.12.037
Salinas-Jiménez, M., Artés, J., & Salinas-Jiménez, J. (2013). How do educational attainment and occupational and wage earner statuses affect life satisfaction? a gender perspective study. *Journal of Happiness Studies, 14*, 367–388. https://doi.org/10.1007/s10902-012-9334-6
Schafer, M. H., Ferraro, K. F., & Mustillo, S. A. (2013). Children of misfortune: Early adversity and cumulative inequality in perceived life trajectories. *American Journal of Sociology, 119*(4), 1052–1096. https://doi.org/10.1086/674562
Schwartz-Tayri, T. M. (2021). The willingness of social work students to engage in policy practice: the role of personality traits and political participation predictors. *The British Journal of Social Work, 51*(7), 2381–2398. https://doi.org/10.1093/bjsw/bcaa065
Shaw, D., McMaster, R., & Newholm, T. (2016). Care and commitment in ethical consumption: An exploration of the 'attitude–behaviour gap. *Business Ethics, 136*(2), 251–265. https://doi.org/10.1007/s10551-014-2442-y
Shirahada, K., & Wilson, A. (2023). Well-being creation by senior volunteers in a service provider context. *Journal of Service Theory and Practice, 33*(7), 28–51. https://doi.org/10.1108/JSTP-07-2022-0137
Sin, H. L. (2010). Who are we responsible to? Locals' tales of volunteer tourism. *Geoforum, 41*(6), 983–992. https://doi.org/10.1016/j.geoforum.2010.08.007
Sinha, N., Dhingra, S., Sehrawat, R., Jain, V., & Himanshu, H. (2025). Customers' intention to use virtual reality in tourism: A comprehensive analysis of influencing factors. *Tourism Review, 80*(3), 742–766. https://doi.org/10.1108/TR-07-2023-0488
Sirgy, M. J. (1982). Self-concept in consumer behavior: A critical review. *Journal of Consumer Research, 9*(3), 287–300. https://doi.org/10.1086/208924
Sirgy, M. J., Grewal, D., Mangleburg, T. F., Park, J.-O., Chon, K.-S., Claiborne, C. B., Johar, J. S., & Berkman, H. (1997). Assessing the predictive validity of two methods of measuring self-image congruence. *Journal of the Academy of Marketing Science, 25*(3), 229–241. https://doi.org/10.1177/0092070397253004
Sirgy, M. J., Kruger, P. S., Lee, D.-J., & Yu, G. B. (2011). How does a travel trip affect tourists' life satisfaction? *Journal of Travel Research, 50*(3), 261–275. https://doi.org/10.1177/0047287510362784
Srihadi, T. F., Hartoyo, S., & Soehadi, A. W. (2016). Segmentation of the tourism market for Jakarta: Classification of foreign visitors' lifestyle typologies. *Tourism Management Perspectives, 19*, 32–39. https://doi.org/10.1016/j.tmp.2016.03.005
Steinberg, D. (2020). Moral theories and moral obligations. *The Multidisciplinary Nature of Morality and Applied Ethics, 127–138*. https://doi.org/10.1007/978-3-030-45680-1_10
Su, L., Yang, X., & Huang, Y. (2022). How do tourism goal disclosure motivations drive chinese tourists' goal-directed behaviors? the influences of feedback valence, affective rumination, and emotional engagement. *Tourism Management, 90*, Article 104483. https://doi.org/10.1016/j.tourman.2021.104483
Totsune, T., Matsudaira, I., & Taki, Y. (2021). Curiosity–tourism interaction promotes subjective well-being among older adults in Japan. *Humanities and Social Sciences Communications, 8*(1). https://doi.org/10.1057/s41599-021-00748-3
Uslu, A., & Tosun, P. (2024). Examining the impact of the fear of missing out on museum visit intentions. *Journal of Hospitality & Tourism Research, 48*(6), 1097–1112. https://doi.org/10.1177/10963480231168608
Van Schie, S., Gautier, A., Pache, A.-C., & Güntert, S. T. (2019). What keeps corporate volunteers engaged: extending the volunteer work design model with self-determination theory insights. *Journal of Business Ethics, 160*(3), 693–712. https://doi.org/10.1007/s10551-018-3926-y
Venkatesh, V., Brown, S., & Bala, H. (2013). Bridging the qualitative-quantitative divide: Guidelines for conducting mixed methods research in information systems. *MIS Quarterly*, 21–54.
Vivek, S. D., Beatty, S. E., & Morgan, R. M. (2012). Customer engagement: Exploring customer relationships beyond purchase. *Journal of Marketing Theory and Practice, 20*(2), 122–146. https://doi.org/10.2753/MTP1069-6679200201
Wallace, E., Buil, I., & De Chernatony, L. (2017). Consumers' self-congruence with a "Liked" brand: Cognitive network influence and brand outcomes. *European Journal of Marketing, 51*(2), 367–390. https://doi.org/10.1108/EJM-07-2015-0442
Wray-Lake, L., DeHaan, C. R., Shubert, J., & Ryan, R. M. (2019). Examining links from civic engagement to daily well-being from a self-determination theory perspective. *The Journal of Positive Psychology, 14*(2), 166–177. https://doi.org/10.1080/17439760.2017.1388432
Yoo, S., & Drumwright, M. (2018). Non-profit fundraising with virtual reality. *Non-profit Management and Leadership, 29*(1), 11–27. https://doi.org/10.1002/nml.21315
Yu, Y. (2014). How education affects happiness: Research progress on education, public expenditure on education, and subjective well-being. *Peking University Education Review, 12*, 105–120. https://doi.org/10.19355/j.cnki.1671-9468.2014.03.009
Zarantonello, L., Grappi, S., & Formisano, M. (2024). How technological and natural consumption experiences impact consumer well-being: The role of consumer mindfulness and fatigue. *Psychology & Marketing, 41*(3), 465–491. https://doi.org/10.1002/mar.21925
Zhao, T., Lu, Y., Wang, V. L., Wu, B., Chen, Z., Song, W., & Zhou, L. (2023). Shared but unhappy? Detrimental effects of using shared products on psychological ownership and consumer happiness. *Journal of Business Research, 169*, Article 114306. https://doi.org/10.1016/j.jbusres.2023.114306
Zhu, X., Teng, L., Foti, L., & Yuan, Y. (2019). Using self-congruence theory to explain the interaction effects of brand type and celebrity type on consumer attitude formation. *Journal of Business Research, 103*, 301–309. https://doi.org/10.1016/j.jbusres.2019.01.055
Zimmerman, M. J. (1996). *The Concept of Moral Obligation* (1st ed.). Cambridge University Press, 10.1017/CBO9780511624681.
Zogaj, A., Tscheulin, D. K., & Olk, S. (2021). Benefits of matching consumers' personality: Creating perceived trustworthiness via actual self-congruence and perceived competence via ideal self-congruence. *Psychology & Marketing, 38*(3), 416–430. https://doi.org/10.1002/mar.21439



Mariana Berga Rodrigues holds a PhD in Management, with a specialization in Marketing. She is an Invited Assistant Professor at Iscte - Instituto Universitário de Lisboa. Her research focuses on emerging technologies (particularly virtual reality, augmented reality, and artificial intelligence), and their implications for consumer behavior, social interaction, and well-being. Her work has been published in international scientific journals such as the Journal of Retailing and Consumer Services, Journal of Brand Management, and Creativity and Innovation Management. mariana.o.b.rodrigues@gcom; mobrs@iscte-iul.pt. ORCID: https://orcid.org/0000-0003-3235-7592.



Sandra Maria Correia Loureiro is a Full Professor and serves as the Coordinator of Marketing for the PhD in Management program, as well as Coordinator of the Marketing Group at the Business Research Unit (BRU). Her research focuses on marketing technology (MarTech) and tourism marketing, exploring innovation and consumer behavior in digital environments. She has published extensively in leading international journals, including the *Journal of Marketing*, *Journal of Retailing*, *Journal of Business Research*, *Tourism Management*, and *Journal of Travel Research*. Sandra is an active reviewer for prestigious journals and conferences and has contributed to several research projects funded by the European Union and Portugal's FCT. sandramloureiro@netcabo.pt ORCID: https://orcid.org/0000-0001-8362-4430.



Ricardo Godinho Bilro (PhD) is an Associate Professor of Marketing with habilitation at ISCTE – Lisbon University Institute. His current research interests include Digital Transformation, Technology Adoption, Consumer Engagement and Services Marketing. His research has been published in international scientific journals such as Journal of Travel Research, IEEE Transactions on Engineering Management, Psychology & Marketing, Journal of Business Research and International Journal of Contemporary Hospitality Management. bilro.ricardo@gcom. ORCID: https://orcid.org/0000-0002-4159-2474.