| **RESEARCH ARTICLE**

Immersive Virtual Reality: Across Generations Analysis of Attitude and Behavioural Donation Intention

Sana Ibrahim[1] and Rym Bouzaabia[2]

[1]Higher Institute of Finance and Taxation of Sousse, University of Sousse, Tunisia.
[2]Department of marketing, Institute of Higher Business Studies of Sousse, University of Sousse, Tunisia. ERMA Laboratory
Corresponding Author: Author's Name, Sana Ibrahim, **E-mail**: ibrahimsana92@gmail.com

| **ABSTRACT**

The aim of this research is to compare the attitudes and behavioural donation intentions of digital natives and digital immigrants towards homelessness, as part of a social marketing campaign using immersive virtual reality, while examining the moderating role of religiosity. Data were collected using a face-to-face questionnaire administered to 187 respondents. The results indicate that digital natives exposed to immersive virtual reality have significantly higher attitudes towards homelessness than digital immigrants. However, no statistically significant difference was observed between the two groups exposed to immersive virtual reality in terms of behavioural donation intention. Furthermore, attitudes towards homelessness have a positive influence on behavioural donation intention, and this relationship is moderated by the level of religiosity. Finally, results reveal that a significant indirect effect of generation type (digital natives vs. digital immigrants) on behavioral donation intention via attitude is only observed for individuals with a high level of religiosity.

INTRODUCTION

Organizations involved in social marketing initiatives aimed at combating homelessness target a variety of audiences that are likely to benefit from their actions. These include individual and corporate donors, religious and charitable organizations, and community members (Frechette et al., 2023). To reach these groups, several tools are used to raise public awareness of social issues (Frechette et al., 2023). However, despite promising results, the integration of emerging technologies into social marketing campaigns remains limited, and their potential remains largely untapped (Nouri et al., 2025). Among these innovations, virtual reality (VR) stands out as a particularly promising tool, enabling the creation of immersive and realistic experiences that can reinforce the impact of messages and make information more convincing (Nouri et al., 2025).

Although immersive VR is recognized as an effective approach for raising public awareness (Frechette et al., 2023; Nouri et al., 2025; Nouri and Bouzaabia, 2025), to our knowledge, the majority of existing research in social marketing focuses primarily on younger generations. Indeed, most studies on charitable giving have been conducted with samples of students (Frechette et al., 2023; Nouri et al., 2025), thus limiting the scope of the results and their generalizability to the entire population. This restriction is particularly problematic given that age strongly influences the adoption and acceptance of new technologies (Venkatesh et al., 2003). The digital age has profoundly transformed behaviors and modes of communication, particularly among younger generations (Gasser and Palfrey, 2008). While older generations, often referred to as "digital immigrants", have gradually integrated emerging technologies into their daily lives, "digital natives" have grown up in constant interaction with these tools (Prensky, 2001; Ahn and Jung, 2016). This generational asymmetry creates a gap in comparative research, making it difficult to

identify the cohorts most receptive to technological innovations in social marketing (Ham et al., 2022). Furthermore, despite the importance of individual factors—such as level of religiosity—which constitute a major determinant of pro-social motivation (Kamil and Kasri, 2021; Kaya et al., 2021; Chetioui et al., 2023) these elements are rarely taken into account in existing studies.

Therefore, this study aims to fill these gaps by examining cross-generational differences in charitable giving. Specifically, it compares attitude and behavioral donation intention of digital natives and digital immigrants towards homelessness through a social marketing campaign using immersive VR, while incorporating religiosity as a moderating variable. In this context, several research questions guide this study:

- Are there significant differences between digital natives and digital immigrants in their attitudes and intentions to donate when exposed to immersive VR experience?
- What is the effect of attitude towards homelessness on behavioral donation intention?
- Does level of religiosity moderate the relationship between generational type, attitude towards homeless people, and behavioral donation intention in the context of immersive VR experience?

In order to provide answers to these questions, this paper is divided into five main sections. The first section presents a review of the literature, which traces the theoretical foundations of social marketing, virtual reality and intergenerational differences. The second section outlines the conceptual framework and research hypotheses. The third section details the methodology used, including the sample and measures employed. The fourth section presents the empirical results and their comparative analyses. Finally, the fifth section discusses the theoretical and managerial implications, limitations and avenues for future research.

LITERATURE REVIEW

Social marketing, virtual reality and generation

Social marketing is defined as '*the use of marketing principles and techniques to influence a target audience to voluntarily accept, reject, modify, or abandon a behavior for the benefit of individuals, groups, or society as a whole*' (Kotler et al., 2002). It does not aim to sell a product, but to encourage changes in attitudes, beliefs, or behaviors in the service of a social cause. In the context of homelessness, this type of marketing seeks to raise public awareness, elicit empathy, and promote solidarity, particularly through donations or volunteering (Shepelenko et al., 2024). Frechette et al. (2023) point out that social organizations try to design emotionally engaging messages to elicit a pro-social response, but that traditional tools—such as posters, or videos—often reach their limits in the face of public information overload. Thus, to capture attention and stimulate deeper engagement, social marketing actors are increasingly turning to innovative technologies capable of offering a more immersive and participatory experience (Nouri et al., 2025).

VR is emerging as an innovative tool for social marketing, allowing individuals to enjoy immersive experiences that strengthen their empathy and willingness to help others (Frechette et al., 2023). Kandaurova and Lee (2019) highlight that VR stimulates emotions such as empathy and a sense of responsibility, leading to a greater propensity to donate. Kristofferson et al. (2022) also confirm that immersive environments, by allowing participants to "put themselves in someone else's shoes", amplify the emotional impact and promote concrete pro-social behavior. More recently, Nouri et al. (2025) showed that VR positively influences mental imagery and donation intention. Overall, this research demonstrates that VR is a promising extension of social marketing, capable of translating awareness messages into lived experiences, thereby intensifying the emotional and behavioral engagement of target audiences. Nevertheless, individuals of different ages may adopt different approaches to digital innovation (Bohdanowicz et al., 2020). Several authors have shown that age influences the acceptance of new technologies and conditions the use and effects of digital media (Venkatesh et al., 2003; Yoo and Drumwright, 2018). To describe these differences, Prensky (2001) introduced the terms digital natives and digital immigrants. Digital natives (DN) are defined as 'native "speakers" of the digital language who grew up with easy access to, and make frequent use of, digital technologies' (Gasser and Palfrey, 2008; Thornham and McFarlane, 2011). They generally refer to people born after the 1980s that were exposed to digital technologies from childhood, are able to use digital devices with ease, and are open to technological innovations (Prensky, 2001; Ahn and Jung, 2016). Conversely, digital immigrants (DIs) are individuals born before the 1980s or before the emergence of digital technology. Although they also use these technologies, it is generally as adults (Prensky, 2001; Kesharwani, 2020).

As each of these generations became familiar with digital technologies at different times, the age of initial exposure likely influences the sense of presence and VR experience (Bohdanowicz et al., 2020). This trend is particularly well documented in studies conducted with students: Frechette et al. (2023) show that the use of VR or 360° videos improves attitudes towards homeless people and increases the intention to help. Furthermore, Nouri et al. (2025) emphasize that VR influences mental imagery and donation intention. These observations suggest that digital natives and digital immigrants may respond differently to virtual reality. Based on the literature discussed above and research indicating that digital natives are more comfortable using technology and quicker to adopt digital innovations (Prensky, 2001; Ahn and Jung, 2016), it can be expected that their emotional

and behavioral engagement in VR campaigns will be higher than that of digital immigrants. This leads to the following hypotheses:

H1: Digital natives exhibit stronger attitudes towards homeless people than digital immigrants.

H2: Digital natives exhibit higher behavioral donation intentions than digital immigrants.

In the field of pro-social behavior, and more specifically charitable giving, attitude is widely recognized as a key antecedent to the intention to give. Several empirical studies have confirmed that favorable attitudes towards giving or towards the cause significantly increase the likelihood of effective giving behavior (Knowles et al., 2012; Aji et al., 2021). For example, Smith and McSweeney (2007) demonstrated that attitude is one of the most robust predictors of the intention to donate, highlighting the central role of the donor's cognitive and affective evaluations. Similarly, Van der Linden (2011) observed that attitude towards giving positively influences donation intention. These findings have been corroborated by more recent studies: Chetioui et al. (2023) show that attitude towards giving has a direct and significant effect on the intention to contribute to charity. For their part, Nouri and Zorgati (2025) confirm that attitudes towards homeless people positively influence donation intention. Overall, these studies highlight that attitude is a fundamental psychological mechanism in the formation of donation intention, serving as an interface between the perception of the cause and the decision to act in a pro-social manner. Based on the literature presented above, the following hypothesis was formulated:

H3: Attitude towards homelessness positively influences behavioral donation intention.

The role of religiosity

Religiousness is considered as one of the most influential cultural determinants of pro-social behavior (Eid and El-Gohary, 2015; Kamil and Kasri, 2021). It is also considered a key factor in understanding pro-social behaviors, particularly those related to philanthropy (Bekkers and Wiepking, 2011; Kamil and Kasri, 2021). Indeed, several studies have highlighted its key role in stimulating charitable giving (Bekkers and Wiepking, 2011) and identified it as one of the main motivations for generosity (Opoku, 2013). Kamil and Kasri (2021) highlighted that religiosity was a determining factor in cash donations. Similarly, Teah et al. (2014) demonstrated that religious beliefs play a moderating role between attitudes towards charitable organizations and motivation to give. According to Eid and El-Gohary (2015), religiosity has a moderating effect on the relationship between perceived value and consumer satisfaction. Furthermore, it has been observed that highly religious individuals are generally more inclined to donate than those with lower religiosity (Gibson, 2008). Chetioui et al. (2023) confirmed that religiosity influences the relationship between subjective norms and attitudes towards giving: individuals with higher levels of religiosity develop a more favorable attitude towards giving and express a stronger intention to give. Recently, Nouri and Zorgati (2025) demonstrated that level of religiosity significantly moderates the relationship between awareness of charitable giving and donation intention. Based on these observations and the literature presented above, the following hypothesis was formulated:

H4: Level of religiosity moderates the effect of attitude towards homeless people and behavioral donation intention, such that the effect is more pronounced among highly religious individuals.
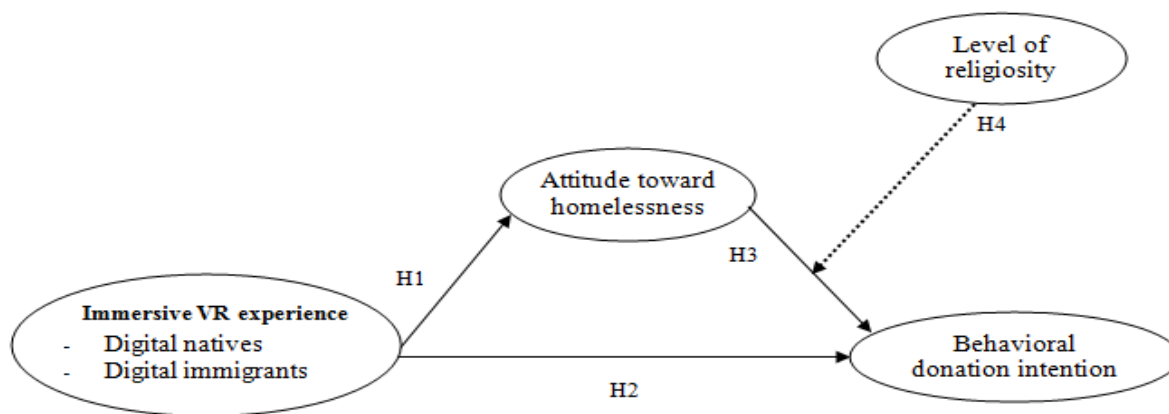

Figure1: Conceptual Model

RESEARCH METHODOLOGY

Data collection method and sample

This study adopts a quantitative approach to examine intergenerational differences (digital natives vs. digital immigrants) in attitudes and intentions to donate following an immersive VR experience, as well as the moderating role of level of religiosity.

Data were collected using a face-to-face questionnaire administered to participants recruited in a large shopping centre and various public spaces to ensure a diversity of profiles in terms of age, gender, and socio-economic status. Before completing the questionnaire, participants were briefly informed of the general objectives of the study and then invited to participate in an immersive experience using a Smartphone and a VR headset (HMD), which showed them a 360° video illustrating the daily life of a homeless person. Following this exposure, respondents completed the questionnaire measuring their attitudes towards homeless people, their behavioral intention to donate and their level of religiosity. All data was collected anonymously and processed in accordance with the ethical principles applicable to social science research.

Measurement

Attitudes towards homeless people were measured using a seven-point Likert scale comprising five items, originally developed by Sherry et al. (2011) and adapted to the context of this study by Nouri and Zoragti (2025). *Behavioral donation intention* was assessed using four items inspired by the scale developed by Coyle and Thorson (2001) and adapted from Balaskas et al. (2023), which captured respondents' propensity to support the cause after the immersive experience. Finally, *religiosity* was measured using a six-item, seven-point scale based on the conceptual framework of Eid and El-Gohary (2015) and adapted by Nouri and Zoragti (2025). This measure assessed both the religious beliefs and Islamic practices of respondents.

RESULTS

Demographic profiles

The initial number of participants was 189. However, two questionnaires with incomplete or poor-quality responses were excluded, bringing the final sample size to 187 respondents. After data collection, the sample was segmented into two generational cohorts according to the criteria of Prensky (2001), Ahn and Jung (2016) and Kesharwani (2020): digital natives (born after 1980) and digital immigrants (born before 1980). Both genders were well represented, with 51.9% women and 48.1% men. The average age of participants was 39.98, with an age range from 20 to 69. In terms of occupational distribution, 31% of respondents were employees, 12% were managers, 27% were self-employed, 9% were unemployed, 17% were retired, and 4% were classified as "other".

Table 1: Demographic profiles

			Generation type	
		Total (N= 187)	Digital natives **(N=95)**	Digital immigrants **(N=92)**
Gender	Man	90	51	39
	Women	97	44	53
socio-economic status	**Employee**	58	40	18
	Manager / Executive	22	9	13
	Self-employed / Independent worker	50	24	26
	Unemployed	17	15	2
	Retired	32	1	31
	Other	8	6	2

Reliability and validity of measurement scales

In order to assess the reliability and validity of the scales, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were conducted. The results (Table 2) indicate that all scales have a clear factor structure and satisfactory measurement quality indices. The Cronbach's alpha (α) and Jöreskog's rho (CR) coefficients are above 0.70, confirming adequate internal reliability

(Hair *et al.,* 2010). Furthermore, the Mean Extracted Variance (AVE) values exceed the threshold of 0.50, attesting to acceptable convergent validity Fornell and Larcker (1981).

Table 2: Analyses of reliability and validity

Variables	Cronbach alpha	CR	AVE
Attitude toward homelessness	0.911	0.932	0.698
Behavioral donation intention	0.895	0.918	0.622
Religiosity	0.902	0.903	0.588

Hypotheses testing

In order to test hypotheses H1 and H2, two independent samples t-tests were performed. The results presented in Table 3 reveal a statistically significant difference between the two groups (digital natives vs. digital immigrants) exposed to immersive virtual reality in terms of attitude towards homelessness (t = 8.227, p < 0.001). More specifically, digital natives had significantly higher attitude scores than digital immigrants ($M_{\text{Digital natives}}$ = 5.12 vs. $M_{\text{Digital immigrants}}$ = 3.70), indicating that they are more sensitive and receptive to the messages conveyed by the immersive experience. Consequently, *H1* is supported. Nevertheless, the results indicate no statistically significant difference between the two groups (digital natives vs. digital immigrants) exposed to immersive virtual reality in terms of behavioral donation intention (t = 1.579, p > 0.05). Consequently, *H2* is not supported. These results suggest that, although digital natives display more positive attitudes towards homeless people, this superiority do not necessarily translate into a higher intention to donate. This observation can be explained by other moderating or mediating factors, such as level of religiosity, or participants' personal and financial constraints, which influence the actual decision to contribute financially.

Table 3: Independent samples t-tests analyses

	Generation type			
	Digital natives (N=95)	**Digital immigrants (N=92)**	*T*	*Sig.*
Dependent variables	Mean	Mean		
Attitude toward homelessness	5.12	3.70	8.227	**0.000**
Behavioral donation intention	3.97	3.66	1.579	**0.116**

To test hypotheses H3 and H4, a moderate mediation analysis was performed using Hayes' PROCESS macro (model 7) in SPSS 26. This model allows us to examine the effect of an independent variable (generation type: digital natives vs. digital immigrants) on a dependent variable (behavioral donation intention) via a mediating variable (attitude towards homeless people), while taking into account the moderating role of religiosity on the link between attitude and intention.

The results (Figure 2) indicate that generation type (digital natives vs. digital immigrants) has a positive and significant effect on attitude towards homelessness (β= 0.53; p < 0.001, 95%CI= 0.38; 0.68). In turn, attitude has a positive and significant impact on behavioral donation intention (β= 0.38; p< 0.001, 95%CI= 0.21; 0.55). These results suggest that digital natives, who are more familiar with immersive technologies, develop more favorable attitudes towards homelessness after the immersive VR experience, which increases their propensity to consider pro-social behavior such as donating. However, the direct effect of generation type on behavioral donation intention is not significant (β= 0.11; p > 0.05, 95%CI= -0.03; 0.25), indicating that attitude plays an important mediating role in this relationship. Furthermore, analysis of the conditional mediation effects reveals that a significant indirect effect of generation type on donation intention via attitude is only observed for individuals with a high level of religiosity (β= 0.21; p < 0.001, 95%CI= 0.09; 0.23). Furthermore, the results show that religiosity significantly moderates the relationship between attitude and behavioral donation intention (M*W= 015, p < 0.01, 95%CI= 0.08; 0.22). Specifically, the positive effect of attitude on donation intention is stronger among individuals with a high level of religiosity, confirming the amplifying role of religiosity in transforming a favorable attitude into pro-social behavior. Consequently, both hypotheses *H3* and *H4* are supported.
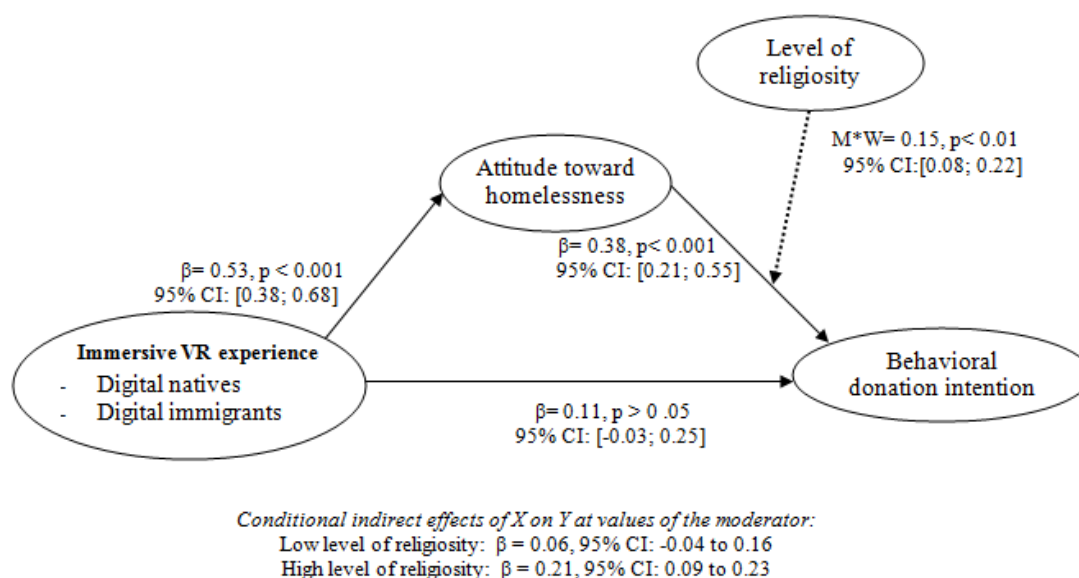
Level of religiosity

M*W= 0.15, p< 0.01
95% CI:[0.08; 0.22]

Attitude toward homelessness

β= 0.38, p< 0.001
95% CI: [0.21; 0.55]

β= 0.53, p < 0.001
95% CI: [0.38; 0.68]

Immersive VR experience
- Digital natives
- Digital immigrants

Behavioral donation intention

β= 0.11, p > 0 .05
95% CI: [-0.03; 0.25]

Conditional indirect effects of X on Y at values of the moderator:
Low level of religiosity: β = 0.06, 95% CI: -0.04 to 0.16
High level of religiosity: β = 0.21, 95% CI: 0.09 to 0.23

Figure 2: Moderated mediation analysis

DISCUSSION

The results of this study reveal a significant difference between digital natives and digital immigrants in their attitudes towards homeless people after exposure to an immersive virtual reality (VR) experience. More specifically, digital natives show more favourable attitudes than their older counterparts. These results partially confirm theoretical expectations and are consistent with several previous studies suggesting that age and technological familiarity influence how individuals perceive and respond to immersive digital experiences (Bohdanowicz et al., 2020; Ahn and Jung, 2016; Prensky, 2001). Indeed, digital natives, having grown up in a highly digitized environment, show greater familiarity with virtual environments. Bohdanowicz et al. (2020) argue that the sense of presence in VR decreases with age, which could explain why digital immigrants, who are less habituated to these environments, feel less connected to the content. This reduced immersion could limit the impact of VR on their pro-social attitudes. The results are also consistent with those of Frechette et al. (2023), who showed that immersive VR improves students' attitudes towards homeless people. These findings suggest that VR is a particularly effective tool for technologically savvy audiences, such as digital natives. However, despite this difference in attitude, no significant difference was observed in terms of behavioral donation intention. This result nuances the previous conclusions and can be explained by several factors. On the one hand, donation intention implies a concrete engagement—often influenced by additional variables such as personal values, financial capacity, or religiosity—beyond a simple favorable attitude (Knowles et al., 2012; Chetioui et al., 2023). On the other hand, it is possible that the immediate emotional response elicited by VR was not sufficient to translate into actual intention to act, especially among digital immigrants, whose persuasion process is more cognitive than sensory (Venkatesh et al., 2003).

The results of this research also highlight a positive and significant effect of attitudes towards homeless people on behavioral donation intentions. In other words, the more individuals develop a favorable attitude towards homeless people, the more likely they are to consider pro-social behavior, such as donating. These results corroborate several previous studies that have demonstrated the central role of attitude in predicting donation behavior (Chetioui et al., 2023; Nouri and Zorgati, 2025). Indeed, Chetioui et al. (2023) confirmed that attitude has a direct and significant effect on the intention to contribute to charitable causes, while Nouri and Zorgati (2025) showed that positive attitudes towards homeless people significantly promote donation intentions. Furthermore, the results reveal that attitude plays a fully mediating role between generation type (digital natives vs. digital immigrants) and donation intention. This means that the effect of generation type on donation intention is exerted only through attitude towards homeless people. Thus, although digital natives express a more favorable attitude than digital immigrants, this generational difference only translates into donation intention through this attitude.

Furthermore, the analysis shows that religiosity significantly moderates the relationship between attitude and behavioral donation intention. Specifically, the positive effect of attitude on donation intention is stronger among individuals with high levels of religiosity, highlighting the amplifying role of this variable. These results are consistent with existing literature suggesting that religiosity is a key factor in pro-social and charitable behavior (Gibson, 2008; Chetioui et al., 2023, Nouri and Zorgati, 2025). Indeed, highly religious individuals tend to perceive giving as a moral or spiritual value, thereby reinforcing the link between their favorable attitudes and their intentions to act.

CONCLUSION

This research makes several theoretical contributions to the field of immersive social marketing and the psychology of giving. First, this study expands the existing literature on intergenerational social marketing by exploring the application of immersive virtual reality to understand the differences between digital natives and digital immigrants. Previous research has focused mainly on behaviors and attitudes towards traditional messages (posters, conventional videos) or experiences limited to student populations (Frechette et al., 2023; Nouri et al., 2025). By incorporating an immersive VR experience, this research demonstrates that the effect of immersive social marketing campaigns depends not only on content, but also on generation and digital familiarity. Second, the distinction between digital natives and digital immigrants makes a generational contribution to the conceptual framework of social marketing. Contrary to some previous studies, the differences observed relate more to attitude formation than to final intention, suggesting that digital age influences how individuals process and integrate immersive messages, rather than their intrinsic propensity to act. This observation calls for a re-contextualization of persuasion models in the digital age, incorporating technological familiarity as an explanatory variable. Finally, the study highlights the significant moderating role of religiosity, confirming that beliefs and practices of religion can amplify the translation of a positive attitude into concrete behavior. This finding enriches the existing literature on persuasion and pro-social behavior by introducing religiosity as an integrative psychological variable that links attitudes and behavioral intentions in the context of immersive social marketing.

From a managerial perspective, these results provide valuable insights for non-profit organizations and social marketing campaign designers. Firstly, immersive VR experiences appear to be an effective tool for raising positive attitudes towards sensitive social causes, such as homelessness. Social communication managers should therefore leverage this immersive technology to create experiential campaigns, particularly for younger generations (digital natives), who are more receptive to this type of content. Secondly, given the amplifying role of religiosity, charitable organizations can adapt their message to the spiritual and cultural values of their target audience. For example, in a context where religion remains important (such as in Tunisia), it would be appropriate to incorporate moral, ethical or spiritual references that promote solidarity and compassion in campaign communications. Thirdly, the results suggest that for digital immigrants, who are less familiar with technology, it is essential to accompany the immersive experience with educational mediation: preliminary explanations, assistance in using the equipment, or shorter and contextualized videos. This technological adaptation promotes a better understanding of the message and a more favorable attitude. Finally, from a strategic point of view, these conclusions encourage NGOs, public institutions and socially responsible companies to adopt a more refined generational and psychographic segmentation in their campaigns. Combining technological innovation (VR) and moral sensitivity (religiousness, empathy, pro-social values) can significantly increase the effectiveness of awareness-raising and fundraising actions.

Despite the promising results of this study, several limitations must be taken into account. First, the composition of the sample may limit the generalizability of the results. Although the sample includes participants of different ages and profiles, it remains localized and does not necessarily represent the entire Tunisian population or other cultural contexts. Second, the measurement of attitude and behavioral donation intention is based on self-reported questionnaires, which may introduce biases related to social desirability. Thirdly, the study does not take into account other contextual variables that may influence donation intention, such as income or pre-existing empathy. Finally, although immersive VR was used as an awareness-raising tool, the long-term effects on attitude and behavioral intention were not assessed, limiting our understanding of the lasting impact of this technology. These limitations open up several interesting avenues for future research. It would be relevant to extend the study to larger and more culturally diverse populations in order to test the robustness of the intergenerational effects observed. In addition, future research could compare different types of immersive content or different levels of technological complexity to identify the most effective elements in shaping pro-social attitudes. The integration of real behavioral measures, such as actual donations or post-experience volunteering, would also help to validate the concrete impact of VR campaigns. Furthermore, future research could examine the role of other variables such as income, as potential moderators or mediators (Demirel et al., 2020). Finally, the longitudinal nature of the effects could be explored to assess whether exposure to immersive VR sustainably reinforces pro-social attitudes and intentions, thereby contributing to more effective and sustainable social marketing.

Publisher's Note: All claims expressed in this article are solely those the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers.

REFERENCES

[1] Ahn, J., & Jung, Y. (2016), The common sense of dependence on smartphone: A comparison between digital natives and digital immigrants, *New media & society*, *18*(7), 1236-1256.

[2] Aji, H. M., Albari, A., Muthohar, M., Sumadi, S., Sigit, M., Muslichah, I., & Hidayat, A. (2021). Investigating the determinants of online infaq intention during the COVID-19 pandemic: an insight from Indonesia. *Journal of Islamic Accounting and Business Research*, *12*(1), 1-20.

[3] Balaskas, S., Panagiotarou, A., & Rigou, M. (2023). Impact of personality traits on small charitable donations: The role of altruism and attitude towards an advertisement. *Societies*, *13*(6), 144.

[4] Bekkers, R., & Wiepking, P. (2011). A literature review of empirical studies of philanthropy: Eight mechanisms that drive charitable giving. *Nonprofit and voluntary sector quarterly*, *40*(5), 924-973.

[5] Bohdanowicz, Z., Kowalski, J., Cnotkowski, D., Kobyliński, P. and Biele, C. (2020), Reactions to Immersive Virtual Reality Experiences Across Generations X, Y, and Z, In: ACHI 2020 : The 13th International Conference on Advances in Computer-Human Interactions. IARIA.

[6] Chetioui, Y., Satt, H., Lebdaoui, H., Baijou, M., Dassouli, S., & Katona, S. (2023). Antecedents of giving charitable donations (Sadaqah) during the COVID-19 pandemic: does Islamic religiosity matter?. Journal of Islamic Marketing, 14(5), 1169-1187.

[7] Coyle, J. R., & Thorson, E. (2001). The effects of progressive levels of interactivity and vividness in web marketing sites. Journal of advertising, 30(3), 65-77.

[8] Demirel, S., Burnaz, S., & Karaosmanoglu, E. (2020). The impact of framing on donation behavior: a research agenda. Journal of Management Marketing and Logistics, 7(2), 91-101.

[9] Eid, R., & El-Gohary, H. (2015). The role of Islamic religiosity on the relationship between perceived value and tourist satisfaction. Tourism management, 46, 477-488.

[10] Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of Marketing Research, 18(1), 39-50.

[11] Frechette, C., Diasio, S., Luckett, M., Trocchia, P. J., & Natali, S. (2023). Immersive technology as a social marketing tool: exploring the impact of 360-Video & Virtual Reality on intent to help and attitudes toward the homeless. Social Marketing Quarterly, 29(1), 45-66.

[12] Gasser, U., & Palfrey, J. (2008), Born digital: Connecting with a global generation of digital natives, New York: Perseus.

[13] Hair Jr, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). SEM: An introduction. Multivariate data analysis: A global perspective, 5(6), 629-686.

[14] Ham, C. D., Chung, U. C., Kim, W. J., Lee, S. Y., & Oh, S. H. (2022). Greener than others? Exploring generational differences in green purchase intent. International Journal of Market Research, 64(3), 376-396.

[15] Kamil, M. S., & Kasri, R. A. (2021). Motivation for charitable act: A case study of cash waqf during pandemic in Indonesia. Journal of Contemporary Business and Islamic Finance (JCBIF), 1(1), 32-49.

[16] Kandaurova, M., & Lee, S. H. M. (2019). The effects of Virtual Reality (VR) on charitable giving: The role of empathy, guilt, responsibility, and social exclusion. Journal of Business Research, 100, 571-580.

[17] Kaya, I., Yeniaras, V., & Kaya, O. (2021). Dimensions of religiosity, altruism and life satisfaction. Review of Social Economy, 79(4), 717-748.

[18] Kesharwani, A. (2020). Do (how) digital natives adopt a new technology differently than digital immigrants? A longitudinal study. Information & management, 57(2), 103170.

[19] Knowles, S. R., Hyde, M. K., & White, K. M. (2012). Predictors of young people's charitable intentions to donate money: An extended theory of planned behavior perspective. Journal of Applied Social Psychology, 42(9), 2096-2110.

[20] Kotler, P., Roberto, N., & Lee, N. (2002). Social marketing: Improving the quality of life. Sage publications.

[21] Kristofferson, K., Daniels, M. E., & Morales, A. C. (2022). Using virtual reality to increase charitable donations. Marketing Letters, 33(1), 75-87.

[22] Nouri, I., & Bouzaabia, R. (2025). Impact of immersive virtual reality on environmental mental imagery, climate risk perception and attitudes towards mitigation behaviors. European Journal of Sustainable Development Research, 9(4), em0331.

[23] Nouri, I., & Zorgati, H. (2025). Impact of Generational Awareness of Charity on Attitudes to The Homeless and Donation Intentions: Moderating Role of Religiosity. International Journal of Religion, 6(1), 302-313.

[24] Nouri, I., Bouallegue, S., Ibrahim, S., & Bouzaabia, R. (2025). The effect of immersive virtual reality on mental imagery and donation intention: the moderating role of cybersickness. Journal of Humanities and Applied Social Sciences, 1-22.

[25] Opoku, R. A. (2013). Examining the motivational factors behind charitable giving among young people in a prominent Islamic country. International Journal of Nonprofit and Voluntary Sector Marketing, 18(3), 172-186.

[26] Prensky, M. (2001), Digital natives, digital immigrants part 2: Do they really think differently?, Horizon, 9, 1-6.

[27] Shepelenko, A., Shepelenko, P., Obukhova, A., Kosonogov, V., & Shestakova, A. (2024). The relationship between charitable giving and emotional facial expressions: Results from affective computing. Heliyon, 10(2), 1-14.

[28] Sherry, E., Karg, A., & O'May, F. (2011). Social capital and sport events: spectator attitudinal change and the Homeless World Cup. Sport in society, 14(1), 111-125.

[29] Smith, J. R., & McSweeney, A. (2007). Charitable giving: The effectiveness of a revised theory of planned behaviour model in predicting donating intentions and behaviour. Journal of Community & Applied Social Psychology, 17(5), 363-386.

[30] Teah, M., Lwin, M., & Cheah, I. (2014). Moderating role of religious beliefs on attitudes towards charities and motivation to donate. Asia Pacific Journal of Marketing and Logistics, 26(5), 738-760.

[31] Thornham, H., & McFarlane, A. (2011), Discourses of the digital native: use, non-use, and perceptions of use in BBC Blast, Information, Communication & Society, 14(2), 258-279.

[32] Van der Linden, S. (2011). Charitable intent: A moral or social construct? A revised theory of planned behavior model. Current psychology, 30(4), 355-374.

[33] Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003), User acceptance of information technology: Toward a unified view, MIS quarterly, 27 (3), 425-478.

[34] Yoo, S. C., & Drumwright, M. (2018), Nonprofit fundraising with virtual reality, Nonprofit Management and Leadership, 29(1), 11-27.