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The Influence of Virtual Reality on the Ethical Behavior and Emotions of Managers and Workers¹

La Influencia de la Realidad Virtual en el Comportamiento Ético y las Emociones de Directivos y Trabajadores

I. INTRODUCTION

Immersive technologies such as virtual reality (VR) and augmented reality (AR) have experienced rapid growth. VR is defined as a real or simulated setting where a subject can engage in telepresence (Steuer, 1992). These tools are increasingly being used in organizational settings for purposes such as training (Abich IV et al., 2021; Chang et al., 2024; Lau & Lee, 2021). Empirical evidence shows that VR enhances knowledge acquisition, fosters greater motivation and interest, and boosts confidence in task execution, as indicated by a review of the effectiveness of virtual reality-based training (Abich IV et al., 2021). It has also proven to be a valid tool for the training of behavioral social skills (interpersonal, safety-related, and professional competencies) (Chang et al., 2024), as well as for transformative learning (Lau & Lee, 2021). Moreover, VR has been shown to exert greater influence than traditional instructional methods in areas such as business ethics education (Ronaghi, 2024; Sholihin et al., 2020) or entrepreneurship training (Ronaghi & Forouharfar, 2024). Other organizational applications of VR include product design (Fan et al., 2022; Loureiro et al., 2019) and team collaboration (Moore & Geuss, 2020). Notable companies using VR include Airbus and Honeywell for training, Siemens for construction—facilitating remote collaboration between headquarters and plant



EXECUTIVE SUMMARY

This study investigates how virtual reality-induced emotional states influence ethical decision-making among managers and workers. Using controlled virtual reality simulations with real corporate employees, we demonstrate that while this technology significantly modulates emotions, these emotional shifts do not directly alter ethical behavior. The results suggest that emotions alone might not affect (un)ethical behavior linked to organizational roles, challenging assumptions about virtual reality's capacity to improve ethics through affective induction. These findings highlight virtual reality's potential for emotional management in firms while underscoring the need for complementary strategies to address systemic or cognitive drivers of unethical conduct.

RESUMEN DEL ARTÍCULO

Este estudio investiga cómo los estados emocionales inducidos por la realidad virtual influyen en la toma de decisiones éticas de directivos y trabajadores. A través de simulaciones controladas de realidad virtual con empleados corporativos reales, demostramos que, aunque esta tecnología modula significativamente las emociones, dichos cambios emocionales no alteran de forma directa el comportamiento ético. Los resultados sugieren que las emociones por sí solas podrían no afectar el comportamiento (no)ético vinculado a los roles organizacionales, lo que cuestiona los supuestos sobre la capacidad de la realidad virtual para mejorar la ética mediante la inducción afectiva. Estos hallazgos destacan el potencial de la realidad virtual para la gestión de las emociones en las empresas, a la vez que subrayan la necesidad de estrategias complementarias para abordar los impulsores sistémicos o cognitivos de la conducta deshonestas.

locations—, and Kimberly-Clark for team and customer collaboration (Boyd & Koles, 2019).

Among other applications, VR has become a widely adopted tool for eliciting emotional responses in controlled and immersive environments. This immersive technology-based scenario designed to induce positive emotions has been shown to increase feelings of happiness and joy (Baños et al., 2006; Felinhofer et al., 2015; Kako et al., 2023; Kjærstad et al., 2022). Conversely, when used to elicit negative emotions, VR has heightened negative emotional responses (Baños et al., 2006; Felinhofer et al., 2015; Kjærstad et al., 2022; Lavoie et al., 2021; Rodríguez et al., 2015). Therefore, VR

can be a relevant tool for managing emotions in different settings, including organizations.

Emotions play a central role in organizational behavior, influencing decision-making, interpersonal dynamics, learning, and performance (Ashkanasy & Dorris, 2017; Bechara et al., 2000; Elfenbein, 2007). Furthermore, emotions could influence ethical behavior. Experienced emotions have been found to influence various forms

of deception, including selfish, prosocial, spiteful, and Pareto² lies (Yip & Lee, 2022). Negative affective states –particularly anger and related emotions– often emerge during the decision-making process (Shalvi et al., 2013) and can generate a perceived need for corrective action, which in some cases may escalate to criminal behavior (Agnew, 1992). On the other hand, the induction of emotions such as happiness through VR has been associated with increased honesty (Medai & Noussair, 2021). Addressing dishonest practices is crucial (Argandoña, 2011) as organizational dishonesty can lead to negative outcomes: i) lower long-term profit due to reputation damage and loss of repeat business, and ii) increased operational costs caused by a mismatch of honest and dishonest employees, resulting in distrust among business partners and heightened surveillance (Cialdini et al., 2004).

In organizations, forms of misconduct such as corruption (Fowler, 2023), insider trading (Klaw & Mayer, 2021), tax evasion (Dammak & Jmal Ep Derbel, 2024; Slemrod, 2007), and fraud (Fowler, 2023; Sloman, 1996) have seriously damaged business reputation (Eabrasu, 2020). The Association of Certified Fraud Examiners (ACFE) (2024) reported on occupational fraud across 138 countries, finding that the main perpetrators were managers (41%), workers

VR is defined as a real or simulated setting where a subject can engage in telepresence.

(37%), owners/ executives (19%), and others (3%). The literature aligns this conclusion with the idea that power plays a significant role in shaping behavior and emotion (Keltner et al., 2003).

The literature suggests that there are differences in the ethical behavior between managers and workers. A study revealed that managers' attitudes significantly influence their decision-making to achieve earnings targets and obtain yearly bonuses in accordance with accounting principles (Carpenter & Reimers, 2005). Furthermore, research suggests that a person's career phase or age plays a significant role in influencing values. Senior managers tend to give more importance to trust and less importance to money than younger managers, who are more worried about achievement (Barnett & Karson, 1989). Furthermore, senior employees have stricter interpretations of ethical standards (Serwinek, 1992). A comparative study of managers and non-managers found that managers tend to hold more deontological– and thus more ethical– views than individuals in other occupations (Siu & Lam, 2009). This finding aligns with the finding that managerial status significantly influences the nature of moral reasoning (El Haber & Nagpal, 2024). In a research about auditors' financial decision-making, senior auditors are more likely to make ethically aligned judgments that closely reflect the financial information provided (Muñoz-Izquierdo & Pascual-Ezama, 2024). In the academic environment, this trend also happens, as most of the time, faculty members are more honestly oriented compared to first-year students (Stevens et al., 1993).

Despite the growing recognition of VR as a tool influencing emotions, there remains a lack of empirical data specifically addressing how such emotional engagement with VR manifests among managers and workers –key organizational actors– whose responses remain underexplored. Gaining a deeper understanding of how VR influences the relationship between power and emotion and how it impacts ethical behavior can provide valuable insights in organizational settings. Hence, investigating whether and how this technology affects the behavior related to power may offer helpful understandings of its ethical implications within organizations.

The main contributions of this paper are: (1) the study of how Virtual Reality -induced emotions affect managers and workers, (2) how Virtual Reality influences ethical behavior via emotions, and (3) it is an empirical study done with real managers and workers.

KEYWORDS

Ethics, dishonesty, decision-making, non-managers.

PALABRAS CLAVE

Ética, deshonestidad, toma de decisiones, managers, no managers.

2. LITERATURE REVIEW

In the last years, VR has gained traction as a powerful tool for inducing emotional responses in individuals (Somarathna et al., 2022). Immersive technologies simulate realistic environments by isolating users within virtual spaces, creating a heightened sense of presence and engagement. As noted by Linares-Vargas and Cieza-Mostacero (2024), VR enables the creation of immersive experiences that can feel genuine, even when users are aware of their artificial nature.

As previously noted, VR-based scenarios have been shown to induce emotional states effectively, enhancing positive emotions such as happiness and joy, as well as intensifying negative emotions when intended (Baños et al., 2006; Felnhöfer et al., 2015; Kako et al., 2023; Kjærstad et al., 2022; Lavoie et al., 2021; Rodríguez et al., 2015). Taking into account that in the workplace, the most salient discrete (basic) emotions are happiness (positive emotion) and fear (negative emotion) (Ashforth, 2000; Ashkanasy & Daus, 2002; Ashkanasy & Dorris, 2017), it would be interesting to investigate whether the emotional responses observed in general population studies also occur among managers and workers. These results can be understood through the **Cognitive Person-Focused Model** which helps manage emotions in VR environments by looking at how environmental factors, thinking processes, and visible results are connected (Takac et al., 2023). This framework is based on the well-known Lazarus' **cognitive-motivational-relational theory** (1993). Lazarus's theory highlights that emotions stem from individuals' cognitive appraisals of events, acting as a bridge between the external stimulus and the emotional response. According to this theory, emotions are shaped by how individuals interpret and assess situations, rather than by the stimuli alone.

Given the potential significance of emotional induction with VR across professional profiles, our first hypothesis (H1) is: **The use of immersive virtual reality will elicit significant emotional responses in both managers and workers.**

While the connection between emotion and ethical decision-making is not yet fully established, the **Cognitive-Affective Model** (Gaudine & Thorne, 2001) highlights the essential role of emotion within a rational ethical decision-making process. It examines how emotions impact each stage of an individual's ethical decision-making process based on the intensity of arousal and whether the

emotional state is positive or negative. For example, subjects with emotional arousal and positive feeling states (e.g., happiness) can enhance ethical awareness, promote higher-level moral reasoning, increase alignment between moral judgment and ethical choices, and encourage individuals to follow through on those choices.

According to **Basic Emotions Theory** (Keltner et al., 2019), nonverbal emotional expressions show up as consistent behavior patterns that match specific personal experiences and include physical reactions, feelings, and ways of expressing them. discrete, short-lived emotional states. They are thought to have evolved to support adaptive responses to key challenges, such as navigating social hierarchies or avoiding threats.

Emotions can either help or hurt our ability to make moral choices, as explained by the **Emotions and Ethics Framework** (Yip & Lee, 2022). This framework shows that emotions like happiness and anger, which focus on ourselves, are more likely to lead to selfish or dishonest actions, while emotions like disgust and sadness, which focus on others, are linked to being more honest.

However, when studying the relationship between emotions and behavior in organizations, we must consider that the managerial power of individuals also plays a significant role in this relationship, as described in the **Approach/ Inhibition Theory** (Keltner et al., 2003). This theory posits that elevated power is associated with positive affect, heightened sensitivity to rewards, automatic information processing, and disinhibited behavior. Conversely, diminished power is associated with negative affect, increased attention to threats, punishments, others' interests, and self-aspects relevant to others' goals, along with more controlled information processing and socially inhibited behavior.

Among other factors of the relationship between emotion and behavior, emotions play a role in ethically charged situations (Treviño et al., 2006). Research indicates that positive emotions, particularly happiness, can reduce dishonest behavior compared to neutral emotional states (Medai & Noussair, 2021; Van Der Zee et al., 2016). When introducing power into the relationship between emotion and behavior, the literature shows that managers report higher levels of job-related happiness than workers (Jaworek et al., 2021) and also posits that elevated power is associated with positive affect and disinhibited behavior (Keltner et al., 2003), aligning with the Approach/Inhibition Theory.

Conversely, fear has been shown to facilitate ethical decisions, decreasing unethical behavior (Kligyte et al., 2013; Singh et al., 2018). Fear seems related to a lack of conviction, which is critical in a competitive environment (Singh et al., 2018) as it impacts judgment decision-making (Angie et al., 2011).

Therefore, considering the induction of happiness and its impact on ethical behavior, we propose our second hypothesis (H2): **Virtual Reality influences honest behavior by emotional elicitation in both managers and workers.**

3. METHODOLOGY

We designed an experimental study that elicits emotions through varying immersive interventions for individuals at different managerial levels, building on prior literature connecting VR with emotional responses and individual decision-making. To measure dishonest behavior before and after the intervention, we used a between-participants design that compared two groups based on their managerial level (manager or worker) and four different ways to induce emotions (using virtual reality with a three-dimensional (3D) video, a desktop with a 3D video, a desktop with a two-dimensional (2D) video, and no video at all).

To evaluate the impact of emotions following immersions, the treatments differed by the level of immersion and the video used: i) Immersive video using Virtual Reality (VR) Head-Mounted Display (HMD) glasses (Oculus® Quest 2), which offered the participant a 3D visual experience moving within the scene as the person surfing (GoPro, 2015) (“3D SURF”), ii) Non-immersive video playing the same video on a desktop, which converted the clip from 3D to 2D (“2D SURF”), iii) Non-immersive video displaying on a desktop a 2D excerpt from Disney’s *The Lion King* (“Hakuna Matata” song (BSOFilmsandGames, 2012)) (“2D HM”), in order to control for the content influence rather than the technology; and iv) no emotion induction as a control treatment (“CONTROL”). We selected the videos to elicit a monovalent emotion, specifically happiness. Both “waves and beach” and “The Lion King” Hakuna Matata’s immersive videos have been widely used in research to elicit positive emotions (i.e., Fredrickson et al. (2000), Zhang et al., (2021)). Film clips have been commonly employed as a method for eliciting emotional responses to examine the impact of emotions in controlled settings

(e.g., (Gross & Levenson, 1995)).

Regarding sample design, our research replicated the McAllister & Bigley (2002) approach by having a sample of employees with various job statuses from a broad range of organizations and industries to avoid situational or contextual biases. We classified managers based on the number of employees under their responsibility, classifying them as "managers" if they managed at least one person (Savery, 1988). The sample consisted of 267 individuals from different sectors³, located in Spain, including 69 managers (see **Table 1**). Subjects were randomly assigned to the different treatments. However, 33 participants (12%) were eliminated from the dishonesty analysis as they did not complete the tasks following the given instructions⁴, resulting in 234 subjects.

Table 1. **Description of the sample**

TREATMENT	N	MEAN AGE	SD AGE	% FEMALE	N MANAGERS	% MANAGERS
3D SURF	64	45.1	10.2	57.8%	34	53.1%
2D SURF	64	39.3	12.4	57.8%	32	50.0%
2D HM	62	45.2	9.3	56.5%	32	51.6%
CONTROL	77	41.5	11.3	62.3%	47	61.0%
Total	267	42.7	11.1	58.8%	145	54.3%

The research was conducted in twenty-three sessions between February and June 2022 in a physical facility ("Lab") in Madrid, Spain. The average length of each participation was 9 minutes. The experiment was validated by the Ethical Committee of Complutense University of Madrid.

Participants began by completing a sociodemographic questionnaire, followed by the emotional induction task. We asked each participant to rate the intensity of their various emotions at the time (emotional mood state). Subjects measured their emotional level before and after the induction (except in the control treatment, where it was only counted once) using a nine-point Likert' scale modified PANAS-X questionnaire from Watson and Clark (1994) with 20 different emotions (Kugler et al., 2020). After the emotion induction task, participants received a brief instruction on the decision-making task, which involved rolling a die online once and reporting the outcome online. The honesty task is a modified version

of the die-under-the-cup inferred cheating task of the paradigm created by Fischbacher and Föllmi-Heusi (2013). We presented each task sequentially and only once. Each participant would have the possibility of earning up to €50 following the outcome reported of the draw of a die and a gift for participation (a mobile handler valued at €4.60). A weekly anonymous draw of the weekly participants determined the winner of the reward, who got an Amazon gift card with the value of the number reported. The average reward given per winner was €22.6.

4. RESULT

Our dependent variable was ethical behavior, classified according to the criteria used by Pascual-Ezama et al. (2020), which compares the actual outcome with the reported one, labeling participants as 'honest' or 'dishonest' when a discrepancy is observed⁵. The main independent variables were the level of emotions reported and the managerial power ("manager" or "worker"). Control variables, including age, gender, company size, and wage, were also documented. Results were analyzed with IBM SPSS 27, using the Wilcoxon test for measuring pre- and post- induction emotion levels, the Pearson's chi-square test for measuring (dis)honesty, and the G-Power 3.1 tool for measuring power.

To measure the effect of immersion on emotions, we measured the average reported emotion levels and the impact of the induction (see **Table 2**).

All treatments confirmed the effect of the emotion induction, which increased happiness and decreased fear. Moreover, the induction with VR (3D SURF) significantly impacted happiness and fear in both managers and workers ($p < .004$). Therefore, we confirm our first hypothesis, that virtual reality can elicit emotions in managers and workers.

Regarding the non-immersive treatments (2D HM and 2D SURF), their capacity to elicit emotions is weaker compared to VR. Non-VR technologies do not change happiness in managers. On the other hand, fear in workers was changed in both non-immersive treatments ($p < .003$).

Results on the effect of VR and (dis)honesty did not show a statistical difference in terms either of technologies or power level (see **Table 3**). We did not find differences between managers or

between workers with or without induction (CONTROL) (see **table 4**). Further analysis following the different control variables (gender, age, company size, and wage) did not bring significant results.

Table 2. Emotion levels per treatment

TREATMENT	EMOTION	M/W	AV. PRE	AV. POST	% POST VS PRE	P-VALUE
CONTROL	Happiness	M	6.26			
		W	6.42			
	Fear	M	2.94			
		W	3.47			
2D HM	Happiness	M	6.11	6.29	2.9%	0.292
		W	5.84	6.24	6.8%	0.029
	Fear	M	2.25	1.31	-41.7%	0.001
		W	3.24	2.00	-38.4%	0.000
2D SURF	Happiness	M	6.42	6.54	1.8%	0.425
		W	6.13	6.23	1.5%	0.715
	Fear	M	2.31	2.09	-9.5%	0.096
		W	3.27	2.44	-25.5%	0.002
3D SURF	Happiness	M	6.29	7.04	11.8%	0.000
		W	6.17	6.72	8.9%	0.003
	Fear	M	2.44	1.68	-31.3%	0.002
		W	3.04	1.94	-36.1%	0.002

Note: M: Manager, W: Worker. Av: Average reported level; scale: 1-9, 1: not at all feeling, 9: feeling completely. Pre: before induction, Post: after induction. p-value by Wilcoxon test

Table 3. Chi-square test of the (dis)honesty following the emotion induction treatment among managers and workers and following power between managers or between workers

ANALYSIS	POWER	TREATMENTS	χ^2	DF	P-VALUE	N
Per treatment	M/W	CONTROL	0.4	1	0.52	69
		2D HM	0.8	1	0.38	55
		2D SURF	1.4	1	0.24	56
		3D SURF	0.6	1	0.43	54

ANALYSIS	POWER	TREATMENTS	χ^2	DF	P-VALUE	N
Per power	M	2D HM vs CONTROL	0.7	1	0.40	67
	W		0.5	1	0.49	57
	M	2D SURF vs CONTROL	0.3	1	0.57	68
	W		1.6	1	0.21	57
	M	3D SURF vs CONTROL	0.3	1	0.57	68
	W		0.7	1	0.39	55

Note: χ^2 : Chi-square, df: degree of freedom

Table 4. Percentage of honest managers (M) and workers (W) per treatment by power level and by Honest and Dishonest classification

TREATMENT	BY POWER LEVEL		BY HONEST/ DISHONEST CLASSIFICATION	
	% HONEST M	% HONEST W	% HONEST M	% HONEST W
CONTROL	72.5%	79.3%	55.8%	44.2%
2D HM	81.5%	71.4%	52.4%	47.6%
2D SURF	78.6%	64.3%	55.0%	45.0%
3D SURF	78.6%	69.2%	55.0%	45.0%

These findings mean that employees’ (un)ethical behavior does not change even if a more immersive induction increases happiness and decreases fear. Therefore, we reject H2. It appears that inducing happiness does not influence employees’ (dis)honest behavior.

5. DISCUSSION

The main goal of this research is to study the relationship between virtual reality, emotions, and ethical behavior. Emotions play a critical role in shaping human responses, influencing everything from decision-making to interpersonal behavior. Notably, the VR-based interventions in our study led to increased happiness and reduced fear in both managers and workers, aligning with existing literature (Medai & Noussair, 2021), which demonstrates that emotional states –particularly fear and happiness– can be effectively influenced in both managers and workers through VR experiences. Moreover, these results accross all treatments confirm previous literature indicating that individuals with managerial power have higher positive emotions, which can be due to the fact that managers seem to have higher levels of positive emotions (Jaworek et al., 2021; Keltner

et al., 2003). Furthermore, the fact that VR is capable of changing managers' happiness levels is aligned with former research on VR in the general population suggesting that similar interventions may yield organizational benefits across hierarchical levels. Conversely, reduced fear in employees –also observed in our study– can lead to beneficial outcomes such as lower avoidance behavior, enhanced cognitive flexibility, and more balanced risk assessments (Kish-Gephart et al., 2009). In high-pressure environments, a lower baseline of fear may empower employees to make more confident decisions (Singh et al., 2018).

Our findings suggest that emotion induction via VR does not produce significant changes in ethical behavior, neither by power nor by honesty classification. This can be explained as following the Dual-Process Theory of decision-making (Simon, 1955), individuals rely on two distinct cognitive systems: System 1, which is fast, intuitive, and automatic, and System 2, which is slow, analytical, and deliberate. Ethical responses are quicker than dishonest ones (Liang et al., 2025). In this line, dishonest behavior requires both sufficient time for reflection and the absence of justifications for self-serving unethical actions (Shalvi et al., 2013). Additionally, in their study, they posit that subjects who have internalized honesty are expected to show minimal differences in response time across levels of discrepancy, as their truthful responses remain automatic regardless of the context. Therefore, as our samples showed more honest behavior and the decision-making task was immediately after the emotion induction, individuals did not have enough time to deliberate a dishonest choice. It could be interesting to further analyze the effect in a longer time.

Regarding the impact of emotions on behavior, General Strain Theory (Agnew, 1992) posits that negative affective states generate pressure for corrective action, which may lead to criminal behavior. The theory conceptualizes anger as both a relatively stable individual trait and a dynamic, situational factor that can influence decision-making in the moment (Shalvi et al., 2013). Despite previous literature suggesting that managers tend to behave more ethically than workers, our study found no significant difference in ethical decision-making between the two groups, nor did the method of emotion elicitation (VR or otherwise) significantly impact this behavior. This lack of significant difference could be due to variations in ethical behavior that depend on the power dynamics associated with the specific dishonest practices studied. Furthermore, in the ACFE study (Association of Certified Fraud Examiners, 2024), the level of fraud among both groups is subtle. These emotional dynamics are particularly relevant in the context of business ethics, a foundational aspect of contemporary organizational practice (Omogbemi, 2023).

6. MANAGERIAL IMPLICATIONS

These emotional states are well-documented in the literature as drivers of positive organizational outcomes, including higher engagement, greater job satisfaction, stronger organizational commitment (Fisher, 2010), and improved overall performance (Adnan Bataineh, 2019). Moreover, feeling happiness at work is valuable on its own (Salas-Vallina et al., 2017; Vallina & Soria, 2022).

As VR becomes integrated into workplace practices, its utility in areas such as ethical decision-making, emotional regulation, and team collaboration continues to grow. Its ability to evoke emotional responses enhances learning by making experiences more memorable and by improving retention and preparedness for real-world challenges. For managers, this presents an opportunity to harness immersive technologies to enhance learning outcomes, boost emotional well-being, and promote better workplace behavior. Specifically, fostering positive emotions through VR –such as happiness– can contribute to employee well-being, job satisfaction, and emotional organizational commitment (Fisher, 2010), overall performance (Adnan Bataineh, 2019), and even productivity (Pavic et al., 2022). Similarly, organizations employing digital twins or virtual simulations for training and collaboration (Narin, 2021) may benefit from incorporating emotionally intelligent design into their VR initiatives.

However, as immersive tools grow more sophisticated, they must be used strategically to support ethical conduct and psychological resilience rather than to manipulate employee decisions. Organizations must be aware of the fact that, when implementing these technologies, they could involuntarily elicit an emotional response and change the patterns of decision-making. Nonetheless, using VR in organizational contexts to change employees' emotions could have ethical implications. Work regulations should start considering these scenarios to provide a legal framework for emotional elicitation through technology.

Rather than relying only on VR-based emotional interventions, our results indicate that companies should focus on fostering a strong ethical culture through clear policies, accountability structures, and leadership by example, since VR does not appear to influence ethical behavior.

7. CONCLUSIONS AND LIMITATIONS

This study contributes to the expanding literature on immersive technologies by exploring their impact on emotions and ethical behavior in organizational contexts. The experimental results indicate that (1) VR technology is effective in eliciting emotional responses among both

managers and workers (H1), and (2) emotion induction through VR does not significantly influence ethical behavior in either group (H2). Moreover, this is the first time, as per our knowledge, that research has been done with real managers regarding emotions, ethics, and VR. These findings provide valuable insights about the psychological effects of computer-mediated environments on individuals and organizational dynamics. By integrating the concepts of emotional induction and managerial status into the study of immersive technologies and business ethics, this research advances the field of Human-Computer Interaction and opens new avenues for interdisciplinary exploration.

The ethical considerations surrounding the use of immersive technology to influence emotions in the workplace merit careful examination. As the adoption of such technologies becomes increasingly widespread in corporate environments, it is essential for regulators to develop clear guidelines and frameworks to ensure their ethical and responsible use in emotional management.

Future research could build on these findings by examining additional emotional states and conducting experiments in real workplace environments. Interdisciplinary approaches that incorporate psychological and neurological perspectives would be especially valuable in deepening our understanding of the mechanisms through which immersive technologies influence emotional responses. To minimize bias, the study was conducted in a controlled laboratory setting and did not include specific workplace scenarios.

This study centers exclusively on the effects of a monovalent emotional induction of happiness. Future research could benefit from exploring the impact of other monovalent emotional states –particularly negative emotions– to assess whether the outcomes align with those reported in prior studies. It is also important to note that ethical behavior in our study was measured immediately after the emotional induction and outside the direct context of workplace decision-making. While this allowed for the capture of short-term emotional effects, it limited conclusions about long-term behavioral changes or the transferability of results to real-world organizational settings. Future research could explore field experiments within companies to determine whether these findings hold in actual workplace scenarios.

In addition, this study focuses specifically on VR as the immersive technology under investigation. Future research could enhance understanding by replicating the study using other immersive technologies –such as AR or interactive virtual environments– that offer varying levels of perceived presence. Our results would help determine whether the sense of presence influences employees' emotional responses to immersive experiences and ethical behavior. As discussed, our findings highlight the need to conduct further

multidisciplinary research in the emerging and underexplored field of emotion and technology within organizational contexts.

In conclusion, while VR shows promise as a tool for shaping emotional states, its role in influencing ethical behavior appears constrained without broader organizational support systems. Managers and decision-makers should therefore view immersive technologies as part of a larger toolkit for fostering ethical, resilient, and emotionally intelligent workforces.

8. STATEMENTS & DECLARATIONS

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NOTES

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2. The concept of Pareto deception describes a type of dishonesty in which both the liar and the target benefit (Yip & Lee, 2022).
3. The participants were of multiple sections: education, retail and wholesale trade, technology & internet, marketing, services, finance & real estate, consulting, healthcare, industry, tourism, energy, and agriculture.
4. The eliminated sample corresponded ("lost" sample) to people who did not chronologically follow the instructions as requested, did not complete all the tasks, and/or did not roll the die in www.roll-and-flip.com as it would not be possible to detect their dishonest behavior at an individual level.
5. Data is available at www.behavioralexperiments.com, The code of this experiment was: f5061f784566608422fb22d20a6a4d.