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RESEARCH ARTICLE OPEN ACCESS

Logging In and Staying On: Exploring Immersive Virtual Influencers and How They Drive Consumers' Immersive Time

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ABSTRACT

This study explores the role of virtual influencers (VIs) as critical touchpoints for enhancing consumers' "Immersive Time (ImT)"—the time spent on virtual reality-empowered immersive platforms. By blurring the lines between virtual and physical-world experiences, immersive platforms transform VIs into "Immersive Virtual Influencers (IVIs)" with enhanced functional capabilities. In this paper, we first assess the nature and extent of consumers' ImT with IVIs. Second, using the affordance perspective, we investigate how IVI design elements impact consumers' expectations of IVIs' functions and, in turn, ImT. Employing a mixed-method approach, our initial survey ($N=179$) uncovers that consumers so far only spend limited ImT with IVIs and identifies reasons hindering prolonged engagement. Our following qualitative analysis, based on 30 semi-structured interviews, reveals distinct pathways to enhance ImT for two consumer segments: potential and incumbent users of immersive platforms. For instance, potential users seek an idealized utopia, exemplified by IVIs designed to appear flawless. Conversely, incumbents view immersive platforms as an extension of physical reality, represented by IVIs that embrace greater diversity. By unpacking the nuanced drivers of ImT, we construct a framework on consumer-specific expectations regarding IVI functions. The framework informs about the strategic design and functions of IVIs imperative to fostering a more engaging and prolonged virtual experience for different consumer segments. Thus, we contribute to the burgeoning discourse on how immersive platforms alter consumer behavior and offer guidance for brands on how to navigate the complex dynamics of immersive influencer marketing.

1 | Introduction

Virtual Influencers (VIs) are computer-generated actors that maintain a presence in digital environments, such as social media profiles on platforms like Instagram (Franke et al. 2023). Represented as animation-like figures (e.g., Nobody Sausage) or lifelike characters (e.g., Lil Miquela), VIs exert influence on consumers by mimicking human behavior, embodying unique personalities and narratives (Muniz et al. 2024). Unlike human influencers (HIs), VIs are created and controlled entirely by

brands or digital agencies hired by these brands, ensuring precise oversight of their representation and messaging (Mouritzen et al. 2023).

Recently, the emergence of immersive platforms has transformed consumer interactions with VIs (Park et al. 2024). Immersive platforms are digitally mediated spaces powered by virtual reality (VR) technologies, where both consumers and VIs are embodied as three-dimensional avatars that interact in real time (Hennig-Thurau et al. 2022). As such platforms expand

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the design possibilities of VIs, they enrich the functions that VIs can provide consumers (Barrera and Shah 2023; Liyanaarachchi et al. 2024). By making VI interactions more lifelike, immersive platforms blur the lines between virtual and physical-world experiences (Hennig-Thurau et al. 2022). Consequently, VIs acting on those platforms turn into *Immersive Virtual Influencers* (IVIs).

An increasing number of brands like Maybelline New York and Porsche heavily invest in IVIs to trigger consumers to spend more time in their virtual brand worlds hosted on immersive platforms like Roblox or VRChat (McDowell 2024; Porsche 2022). For example, on Roblox, Maybelline New York enables consumers to create graffiti with digital makeup products and remix a song in collaboration with the IVI Kai (McDowell 2024). Empirical evidence for websites (Eisingerich et al. 2019), social media (Luo et al. 2013), and mobile applications (Appel et al. 2020) already demonstrates that increased time spent on such channels is closely linked to higher purchasing activity and brand loyalty.

The important role of the time consumers spend online has recently been emphasized for immersive platforms (Kaur et al. 2024; Mogaji et al. 2023). To account for the unique characteristics of these environments, scholars introduced the concept of Immersive Time (ImT). ImT is defined as the conscious time consumers spend or intend to spend using devices like VR headsets to engage with their surroundings, including IVIs (Mogaji et al. 2023). ImT is especially relevant for brands acting in the context of immersive platforms. Besides driving purchase-related behavior, prolonged ImT increases the value of consumer-generated data for providing deeper insights into this behavior (Liyanaarachchi et al. 2024; Mogaji et al. 2023).

However, although immersive platforms like Roblox registered over two million installs on Meta's Quest VR headsets shortly after launch, reflecting consumers' high interest (Hiken 2023), many companies struggle to motivate consumers to interact virtually with their brands on such platforms (Watson 2023). Our first study of 179 consumers regularly active on immersive platforms provides empirical evidence for this challenge, revealing that while 84% expressed interest, only 28% of participants had already spent substantial ImT with IVIs. Moreover, our findings indicate that IVIs' design elements and functions may not align with consumer expectations, emphasizing that brands struggle to leverage their potential and transfer consumers from a state of "having access to" to a state of "spending sustained time." While previous research highlights escapism (Mogaji et al. 2023, 2024), enjoyment (Wongkitrungrueng and Suprawan 2024), and social engagement (Cheung et al. 2024; Kaur et al. 2024) as important factors driving ImT, how these functions are activated through avatar design have yet to be explored, posing a crucial gap for brands aiming to optimize IVI interactions.

To respond to this practical need and the scarcity of existing research, we draw on the affordance perspective (Gibson 1986; Majchrzak and Markus 2012), a psychological framework used to explain consumers' willingness to engage with other actors, such as IVIs (Karahanna et al. 2018; Shin 2022). In line with this theoretical lens, we posit that the functions of IVIs, based

on various design elements, are key to driving the willingness to spend ImT. Thus, we propose the following research question:

RQ1. How do the functions associated with IVI design elements drive ImT?

According to research on affordances, consumer expectations of an actor's functions can vary. On the one hand, some consumers are already advanced in their "immersive platform journey" and use such platforms regularly, possessing prior experiences with actors similar to IVIs (e.g., non-player characters (NPCs)) that shaped their expectations (Herhausen et al. 2019). On the other hand, many consumers cannot yet draw on their own experiences but are open to trying out immersive platforms (Hennig-Thurau et al. 2024). Their expectations are shaped by external information from media or peers (Bernhard et al. 2013; Meske et al. 2023). Considering this, we argue that optimizing IVIs' design should address the distinct needs of these two consumer groups: incumbent users (IUs), who draw on their first-hand interactions with comparable virtual actors, and potential users (PUs) of immersive platforms, who depend primarily on second-hand information from external sources. Each group is likely to prioritize different IVI functions (Meske et al. 2023), akin to how members of online communities differ in valuing affordances when deciding how much time to spend in those environments (Pethig et al. 2024). This distinction leads us to our second research question:

RQ2. How do IUs and PUs differ in prioritizing the functions of IVI design elements?

To answer our research questions, we adopted a mixed-method approach. Study 1 provides foundational empirical insights into the (limited) amount of ImT consumers spend with IVIs. It further reveals possible reasons for their lack of engagement. These findings guide a qualitative exploration (Study 2) using semi-structured interviews with 15 IUs and 15 PUs (totaling 30 interviewees). As a result, Study 2 provides a richer, contextual understanding of both groups' drivers to spend ImT with IVIs, complementing the quantitative insights from Study 1 (Ryan and Bernard 2003). For instance, PUs seek an idealized utopia, exemplified by immaculate IVIs designed to appear flawless. Conversely, IUs view immersive platforms as an extension of physical reality, represented by IVIs embracing broader diversity, including visible imperfections.

Our work provides theoretical and practical contributions. From a theoretical perspective, we contribute to understanding IVIs as crucial "ambassadors" motivating consumers to spend ImT. We also reveal which specific IVI design elements intrigue consumers and drive them to spend more ImT. By further exploring the functions of IVIs' design elements, we improve the understanding of why consumers actively seek these elements and, therefore, can better explain why they want to spend ImT with these actors. From a practical perspective, our findings enable brands to understand how IUs and PUs differ in their expectations of IVIs, offering crucial insights for designing IVIs that appeal to both or specific groups. Our results provide actionable design implications for IVIs, empowering companies to leverage IVI marketing to drive ImT for their target consumers effectively.



FIGURE 1 | Examples of VIs.

2 | Conceptual Background

2.1 | Immersive Virtual Influencers on Immersive Platforms

Influencers are individuals whose content vitally shapes consumer perceptions of brands due to their credibility and loyal follower base (Ki and Kim 2019). Unlike HIs, which act as independent endorsers, VIs are designed and managed by third parties (e.g., brands). This can ensure a tailored and controlled brand representation to target online audiences (Mouritzen et al. 2023). VIs' appearance can vary from unrealistic non-humans like Nobody Sausage to hyper-realistic humans like Lil Miquela (Mouritzen et al. 2023). Such variety enables them to effectively adapt to specific target groups (see Figure 1 for examples of different VIs). Additionally, VIs are characterized by unique personalities and engaging storylines, solely existing on digital platforms without a human counterpart in physical reality (Franke et al. 2023).

At their core, all digital platforms refer to environments that enable consumers to access various applications, tools, or content (Gawer and Cusumano 2014). This allows consumers to engage in multifaceted experiences across varied domains like social interactions, education, or shopping (Hein et al. 2020). Immersive platforms, a subgroup of digital platforms, represent a novel landscape for distinctive consumer-brand interactions (Schöbel and Leimeister 2023). To be considered immersive, a platform must use technologies such as VR headsets to draw consumers into multisensory, often interactive environments (Yoo et al. 2023). These environments envelop consumers as avatars, replicating or enhancing physical presence. Such representation enables virtual social interactions that resemble the physical world, including the ability to approach each other spatially (Hennig-Thurau et al. 2022). Additionally, immersive platforms must enable simultaneous interaction between actors (e.g., consumers and companies) and peer-to-peer transactions (e.g., exchanging virtual assets on VRChat) (Yoo et al. 2023). While platforms with some of these features existed previously, their

collective integration defines immersive platforms as uniquely comprehensive digital environments (Hadi et al. 2023).

The unique characteristics of these environments shape VI's design and, in turn, functions. For instance, the embodiment through avatars on immersive platforms enables VIs to interact with others (e.g., consumers) and objects (e.g., products) in virtual spaces, mimicking realistic gestures and behaviors through motion tracking and animations—functions not existent for VIs on traditional social media. Moreover, in contrast to social media environments, immersive platforms enable simultaneous interactions that allow VIs to join live shared experiences, enhancing consumers' perceptions of realistic, personal interactions (Batinovic et al. 2024). Through this transformation, immersive platforms enable brands to create VIs that transcend two-dimensional social media contexts with their predominantly static content. They immerse audiences in three-dimensional, dynamic experiences supported by spatial presence and enhanced sensory capacities (Liyanaarachchi et al. 2024). Thereby, VIs' design elements and functions are fundamentally reshaped based on their novel presence and interaction possibilities. Consequently, VIs become immersive and take on new roles as IVIs, designed to fully leverage the potential of immersive platforms and, ultimately, enhance ImT.

2.2 | Immersive Time as a Key Goal of Immersive Virtual Influencer Interactions

ImT is emerging as a key goal for brands leveraging IVIs on immersive platforms (Kaur et al. 2024). ImT represents the time consumers consciously spend or intend to spend in immersive environments engaging with actors like IVIs using devices such as VR headsets (Mogaji et al. 2023). For brands, this is pivotal, as increased time spent with technology is associated with higher purchasing activity and greater brand loyalty (e.g., Zhang et al. 2025). Additionally, IVI interactions generate valuable behavioral and interaction data, providing companies with

insights into consumer preferences (Liyanaarachchi et al. 2024; Mogaji et al. 2023).

Various functions linked to the unique nature of immersive platforms can drive ImT. During ImT, wearing VR headsets causes consumers to become “disconnected” from physical reality, unable to engage in other activities simultaneously (Mogaji et al. 2023). This deep focus can fully draw consumers into the virtual world, making them lose track of time and external events (Schüll 2012). For this reason, ImT might be nurtured by escapism (Mogaji et al. 2023, 2024), involving both “escaping from” daily life and “escaping to” the novel, curiosity-driven opportunities for exploration (Cova et al. 2018; Han et al. 2022). Moreover, consumers enjoying immersive platforms tend to invest more time exploring these environments (Wongkitrungrueng and Suprawan 2024). Enjoyable experiences are particularly important in this context, as they likely prolong the time spent, while negative experiences may lead consumers to exit the platform and explore alternatives (Kaur et al. 2024). Another function of immersive platforms that could facilitate ImT is social engagement with other consumers or brands (Kaur et al. 2024). This includes participation, referring to the resources consumers invest in interacting with others, and affection, which reflects their emotional engagement (Cheung et al. 2024). Appendix A provides a summary of existing research on the functions of immersive platforms that could be deployed by IVIs to potentially drive ImT.

To encourage ImT, it is beneficial for brands to design IVIs to leverage these functions of immersive platforms effectively. However, existing studies do not explore whether and which of these functions can trigger consumers' ImT when deployed by avatars like IVIs—an essential gap for brands aiming to create functionally appealing IVIs (Cheung et al. 2024). Understanding how IVIs should be designed to meet consumers' expectations regarding IVIs' functions is imperative for brands to develop and leverage avatars that drive ImT. To achieve this, the affordance perspective is highly instrumental.

2.3 | Affordance Perspective on Designing Immersive Virtual Influencers to Drive Immersive Time

The affordance perspective serves as a useful tool for understanding how consumers form expectations about the functions of other actors in multi-actor environments (Ahn, Kim, and Kim 2022). Affordances represent the action possibilities that an actor (i.e., an IVI) in an environment (i.e., an immersive platform) can offer to an individual (i.e., a consumer) (Gibson 1986; Majchrzak and Markus 2012). In other words, it captures the functions of various design elements that IVIs are expected to convey to consumers on immersive platforms.

Through the affordance perspective, it becomes clear that specific knowledge gaps—about how VI design affords certain VI functions—are already present in research on traditional social media platforms. Most studies focus on either VI design elements or VI functions in isolation. For instance, studies investigated various VI design elements, such as appearance,

sensory capabilities (e.g., Arsenyan and Mirowska 2021; Cheung and Leung 2021; Hofeditz et al. 2022; Kim et al. 2023; Li et al. 2023; Xie-Carson et al. 2023; Zhou et al. 2024), and disclosure (e.g., Franke et al. 2023; Mirowska and Arsenyan 2023; Yoo et al. 2024). Studies focusing on VI functions identify roles ranging from providing entertainment, information, or escapism (e.g., Audrezet and Koles 2023; Lou et al. 2023; Mirowska and Arsenyan 2023) to fostering parasocial relationships and community building (e.g., Audrezet and Koles 2023; Dondapati and Dehury 2024; Liu and Wang 2024; Ma and Li 2024; Stein et al. 2024). The few papers that link VI design elements to functions afforded through these elements only focus on connecting one single VI design element (e.g., humanoid design) to one single VI function (e.g., parasocial relationship building) (e.g., Dabiran et al. 2024; Liu and Wang 2024; Ma and Li 2024; Mrad et al. 2024). Hence, most studies do not comprehensively explore how multiple design elements relate to a multitude of expected functions, resulting in a fragmented knowledge landscape. We provide an overview of relevant VI studies in Appendix B.

On immersive platforms, these gaps become even more critical as the design elements of VIs and, consequently, their functions can expand. For instance, when creating IVIs, interactive design elements, such as communication style and response type, become increasingly important (Miao et al. 2022). Investigating the relationship between specific design elements and affordances provides a clearer pathway to theorizing how IVIs can drive consequential consumer behaviors like spending ImT.

Importantly, consumers' expectations regarding an actor's (design-enabled) functions (i.e., affordances) can be shaped by experiences with similar actors, such as NPCs, and through external information from media sources or peers (Bernhard et al. 2013; Meske et al. 2023). Past studies emphasized that affordances can severely differ depending on whether an individual developed them through their own interactions with similar actors or based on external information (e.g., Meske et al. 2023). These differences can severely impact how consumers anticipate design elements to function, which, in turn, motivates behavior, such as spending ImT. Recognizing these differences and aligning design elements with consumers' understanding of functions ensures that affordances are actualized satisfactorily when consumers engage with an actor (Leidner et al. 2018; Meske et al. 2023).

The affordance perspective is particularly relevant in the context of IVIs and ImT. Foremost, it emphasizes how IVIs' design elements are anticipated to function and appreciated by different consumer groups. Such knowledge can enhance our understanding of how brands encourage specific consumers to spend time with IVIs. Familiar with the capabilities and constraints of immersive platforms, IUs may perceive and appreciate other affordances than PUs (Shin 2022). For instance, IUs are likely to emphasize functional attributes of IVIs, like social connectivity or the ability to navigate seamlessly across interactive components (Shin 2022). Aligning IVI design elements with the expectations of different target audiences is crucial to ensure that, when consumers engage with IVIs, their affordances are actualized to fulfill their anticipated functionalities and

motivate behaviors, such as spending ImT (Leidner et al. 2018; Meske et al. 2023). Existing research on VIs overlooks differences in how diverse target groups, such as PUs and IUs, form affordances, further limiting our understanding of their broader appeal and effectiveness.

3 | Study 1: Explorative Survey on IVI Usage and Perceptions

3.1 | Method: Data Collection, Participants, and Survey Design

The first study uses a quantitative approach to assess consumers' ImT with IVIs systematically. It uncovers the (limited) time spent with IVIs and identifies reasons that may hinder prolonged engagement with these characters. We collected data online through a survey hosted on Qualtrics. We chose the online panel provider Prolific to distribute the survey for its higher data quality compared to other online panel platforms (Peer et al. 2022).

To ensure data quality, we checked all responses for completeness, processing time, response behavior, and screening question results. We excluded participants with a response time below 3 min and those displaying straightlining patterns or failing the screening question. The final sample consisted of 179 participants, with demographic characteristics presented in Table 1.

To minimize the risk of common method bias (CMB), we took two steps when designing the survey (Podsakoff et al. 2003). First, we assured participants that there were no right or wrong answers, encouraging them to respond freely and honestly. Second, we maintained clarity by using simple language throughout the survey, ensuring that all definitions and descriptions were concise and easy to understand, and avoiding complex sentence structures.

The survey consisted of two sections. In the first section, participants were provided with a definition of “immersive platforms” and asked a screening question to confirm regular usage.

Participants indicated whether they regularly spend time on immersive platforms by selecting “Yes” or “No.” If they selected “No,” the survey was discontinued. Those who passed the screening reported details about their platform usage, including time spent (weekly and monthly averages) and the specific immersive platforms they regularly engage with. Next, participants were presented with a definition of “IVIs” before indicating whether they had ever spent time with one on an immersive platform. They then provided details on their IVI interactions, including frequency on a weekly and monthly basis and the average duration of a single interaction.

Subsequently, the survey turned to aspirational questions. Participants were asked about their interest in spending time with an IVI in the future, with response options of “Yes” or “No.” This was followed by a series of items measuring their perceptions of IVIs on a 7-point Likert scale (1 = completely

TABLE 1 | Sample demographics.

Sample characteristic	Sample composition	
Gender	Male	49%
	Female	51%
Age	18–24 years old	36%
	25–34 years old	50%
	35–44 years old	14%
Annual income	\$0–\$9999	21%
	\$10,000–\$24,999	14%
	\$25,000–\$49,999	17%
	\$50,000–\$74,999	21%
	\$75,000–\$99,999	12%
	\$100,000–\$149,000	9%
	\$150,000+	4%
	Prefer not to answer	2%
Education	No schooling completed	1%
	Some high school, no diploma	2%
	High school graduate	15%
	Some college credit	6%
	Trade/technical/vocational training	2%
	Associate degree	4%
	Bachelor's degree	42%
	Master's degree	26%
	Professional degree	1%
	Doctorate degree	1%

disagree, 7 = completely agree). Participants evaluated the future role of IVIs, assessing their potential (e.g., as enjoyable or innovative), and identified what hinders them from spending ImT with IVIs (e.g., lack of appealing design limiting expected functions).

The second section entailed demographic questions, such as age, gender, and income.

3.2 | Results: Explorative Insights on IVI Usage and Perceptions

Our participants primarily spent time on VRChat (58%), Roblox (53%), and Horizon Worlds (39%). On average, they accessed immersive platforms 3.18 days per week. While 84% of respondents expressed interest in spending time with IVIs, only 28% had already spent substantial ImT with them. Among those who had, the average time spent per interaction was 7.3 min. We present a summary of these results in Table 2.

TABLE 2 | Results Study 1—usage patterns.

Usage patterns	Usage distribution/average	
Immersive platforms regularly used	VR Chat	58%
	Roblox	53%
	Horizon Worlds	39%
	Rec Room	22%
	Bigscreen VR	17%
	Altspace VR	15%
	The Void	11%
	Others	8%
Immersive platform access per week		3.18 days (min: 1; max: 7)
Immersive platform access per month		14.04 days (min: 1; max: 31)
ImT with IVI	No	72%
	Yes	28%
Number of days per week where interaction with an IVI occurred (if “Yes”)		0.81 days (min: 1; max: 7)
Number of days per month where interaction with an IVI occurred (if “Yes”)		3.53 days (min: 1; max: 31)
ImT with IVI (if “Yes”)		7.3 min (min: 1; max: 50)
Interest in future ImT spending	No	16%
	Yes	84%
<i>N</i> = 179		

The results suggest that brands struggle to leverage the potential of IVIs. Still, participants believed in their future significance ($M = 5.47$, $SD = 1.29$), for instance, rating IVIs as potentially interesting ($M = 5.82$, $SD = 1.23$), innovative ($M = 5.73$, $SD = 1.17$), and relevant ($M = 5.64$, $SD = 1.48$). However, this potential does not seem to translate into sustained ImT. Participants state they refrain from IVIs because of a perceived unappealing design ($M = 4.78$, $SD = 1.94$) and limited functions, including a lack of expected benefits ($M = 4.82$, $SD = 1.89$) and insufficiently engaging activities ($M = 4.42$, $SD = 1.72$). We show further insights into the survey results in Table 3.

These findings provide preliminary evidence of IVIs' shortcomings in driving ImT while raising questions about which specific design-enabled functions influence consumers' intention to spend ImT. To address these questions, we designed Study 2 to further investigate these factors, with an interview guide

specifically developed to examine the role of IVI design-enabled functions in potentially driving ImT.

4 | Study 2: Qualitative Exploration Into IVI Design Driving ImT

Building on Study 1's findings, we conducted a complementary qualitative study to explore how consumers' expectations of IVIs' functions potentially drive ImT. We used a qualitative approach, as the complexity and novelty of our topic demand a rich and detailed understanding of IVIs' engaging role. Qualitative research is appropriate as it provides deeper, often contextualized, exploratory insights into a topic (Draper 2004). It is, therefore, highly suitable for inductively explaining specific phenomena in more detail. In our case, this pertains to which affordances (i.e., design-enabled functions) drive intended ImT with IVIs for different target groups.

4.1 | Method: Data Collection and Analysis

Before and during our data collection and analysis, we took several steps to ensure the validity and reliability of our results. We provide more details on this in Appendix C.

Foremost, we carefully selected this study's interviewees. All participants were familiar with VIs on social media. We recruited two groups of interviewees to explore the affordances of IVIs that drive ImT by IUs and PUs. The group of IUs was recruited via LinkedIn (5), Instagram (7), and TikTok (3) and had immersive platform experiences (e.g., Horizon Workrooms, Roblox), including interactions with IVI-like avatars (e.g., virtual shop assistants and NPCs in VR games). Of this group, eight participants had regular access to a VR headset, either through ownership, friends, or provided by their work. For the remaining seven IUs, we clarified at the beginning of each interview whether they had sufficient VR experience with IVI-like actors, ensuring their insights were comparable to those of the eight participants with regular access (Table 4 compares context information between the two user groups). In contrast, the second group of interviewees (PUs), with only second-hand knowledge of immersive platforms and IVIs, was recruited in a snowball sampling through referrals (Lincoln and Guba 1985). At the beginning of all 30 interviews, we verified that each interviewee referred to the same conceptualization when discussing IVIs and immersive platforms.

The average age of both groups was 27.9 years (IUs: min: 14, max: 45; PUs: min: 20, max: 35). In the PU group, seven identified as female and eight as male, while the IU group consisted of five females and 10 males. This distribution aligns with current immersive platform users, who are predominantly Gen Z and Millennials, with a higher representation of males (Deloitte 2023). Participants were from Germany (12 PUs and 11 IUs), the United States (one PU and one IU), Brazil (one PU and one IU), and one each from Serbia (IU), Austria (IU), and New Zealand (PU). Other research studies (e.g., Verhulst et al. 2021) have found no significant influence of cultural differences on the perception of VR content. This indicates that consumers

TABLE 3 | Results Study 1—IVI perceptions and ImT barriers.

Item ^a	<i>M</i>	<i>SD</i>
IVIs will play an important role on immersive platforms in the future	5.47	1.29
IVIs have the potential to be ...		
... enjoyable	5.36	1.20
... innovative	5.73	1.17
... inspiring	4.99	1.41
... interesting	5.82	1.23
... relevant	5.64	1.48
... relatable	4.83	1.46
What are the main reasons why you might not spend time with IVIs on immersive platforms? ^b		
IVIs are not designed in a way that appeals to me	4.78	1.94
IVIs do not provide the benefits I am looking for	4.82	1.89
IVIs do not deliver the activities that I seek	4.42	1.72
IVIs do not match my expectations of entertainment	4.40	1.73

N = 179

^aItems measured on a 7-point Likert scale ranging from 1 = “Completely Disagree” to 7 = “Completely Agree.”

^bIn an additional free-text box, participants could voluntarily specify reasons. 45 participants used this function and named the following reasons: 47% mentioned the artificial nature of IVIs, 23% an interest mismatch, 23% personal reasons, and 7% data security.

TABLE 4 | Comparison of experiences between PUs and IUs.

Type of experience	PUs	IUs
Prior experience with VIs on social media	Yes	Yes
Prior immersive platform experience	Partly (only second-hand)	Yes
Prior experience with IVI-like avatars	Partly (only second-hand)	Yes
Prior experience with IVIs	No	No

from diverse countries experience immersive platforms and form expectations about IVIs similarly. Our data support this finding, as the codes from our participants across different regions showed no structural differences. We provide an overview of the interviewees in Table 5.

To minimize potential translation-induced alterations, we conducted 80% of the interviews in the native languages of both interviewees and interviewers (Harzing and Maznevski 2002), with the remaining interviews held in English. A bilingual researcher with expertise in the topic handled the process to ensure translation accuracy, while a second bilingual researcher cross-checked the transcripts against the audio recordings. Interviews were conducted online via Zoom (22) and within Horizon Workrooms (8) for those with access to a VR headset. The use of Horizon Workrooms allowed us to perform the interviews in a realistic setting for those participants being familiar with VR headsets (Lincoln and Guba 1985). Both the interviewer and the participant used VR headsets throughout the interview

(see Appendix D for pictures of the VR interview situations). We ensured that the findings are not biased by a specific interview medium by conducting interviews in different media (Zoom and VR), also guaranteeing that we did not miss important aspects unique to immersion. This approach affirmed the robustness of our results. The interviews lasted 38 min on average. We refer to individual participants based on their group affiliation using the abbreviations PU and IU, followed by their chronological number (1–15) for each group.

We used a semi-structured interview guide, maintaining enough room for our interviewees’ experiences and anecdotes (Gioia et al. 2013). The guide featured open-ended, concise questions and follow-up probes to resolve ambiguities, with contextual information and examples provided as needed. We started by gathering demographic information, followed by questions about participants’ understanding of immersive platforms and IVIs. The focus then shifted to the design elements of IVIs and the functions they should afford to consumers, exploring desirability. We also explored interviewees’ willingness to interact with IVIs, with all 30 participants being open to a significant time investment. Most importantly, we investigated their reasons for potentially spending prolonged time with IVIs, represented by the design-enabled functions that IVIs offer. Finally, we solicited views on future developments of IVIs.

We applied the affordance perspective to help us understand the expected functions that IVIs need to offer consumers. These, in turn, are enabled by various design elements. Recognizing this, we focused on coding both the design elements and their associated functions to uncover the key drivers of ImT. Doing so allows us to close the research gaps identified in 2.3.

TABLE 5 | Demographic data of interview participants.

ID	Gender	Age	Country of origin	Interview language	Regular access to VR headset	Interview duration	Interview medium
PU1	F	26	Germany	DE	No	35 min	Zoom
PU2	M	34	Germany	DE	No	39 min	Zoom
PU3	F	26	Brazil	EN	No	36 min	Zoom
PU4	M	35	New Zealand	EN	No	48 min	Zoom
PU5	M	20	United States	EN	No	47 min	Zoom
PU6	F	25	Germany	DE	No	44 min	Zoom
PU7	M	32	Germany	DE	No	59 min	Zoom
PU8	F	25	Germany	DE	No	31 min	Zoom
PU9	M	27	Germany	DE	No	51 min	Zoom
PU10	M	26	Germany	DE	No	31 min	Zoom
PU11	M	27	Germany	DE	No	53 min	Zoom
PU12	M	30	Germany	DE	No	32 min	Zoom
PU13	F	29	Germany	DE	No	32 min	Zoom
PU14	F	29	Germany	DE	No	47 min	Zoom
PU15	F	27	Germany	DE	No	33 min	Zoom
IU1	M	27	Brazil	EN	No	70 min	Zoom
IU2	F	27	Serbia	EN	No	52 min	Zoom
IU3	M	16	Germany	DE	No	49 min	Zoom
IU4	F	14	Germany	DE	No	19 min	Zoom
IU5	M	26	Germany	DE	Yes	23 min	VR
IU6	F	43	United States	EN	No	21 min	Zoom
IU7	M	30	Germany	DE	Yes	23 min	VR
IU8	M	25	Austria	DE	No	24 min	Zoom
IU9	M	32	Germany	DE	No	30 min	Zoom
IU10	M	45	Germany	DE	Yes	19 min	VR
IU11	F	26	Germany	DE	Yes	27 min	VR
IU12	M	24	Germany	DE	Yes	40 min	VR
IU13	M	28	Germany	DE	Yes	42 min	VR
IU14	F	29	Germany	DE	Yes	38 min	VR
IU15	M	26	Germany	DE	Yes	37 min	VR

To analyze our results, we used the coding approach provided by Gioia et al. (2013) and constructed first-order constructs, second-order themes, and aggregate dimensions. First-order constructs are the initial, fundamental elements derived from the data analysis, representing the basic building blocks of understanding. Second-order themes are higher-level categories that emerge from organizing and grouping the first-order constructs, providing a more abstract and comprehensive understanding. Aggregate dimensions synthesize the second-order themes into overarching dimensions, embodying broader and more holistic aspects of the phenomenon under investigation.

To ensure inter-coder reliability through this process, the coders critically discussed their initial coding results until the first-order codes were sufficiently reviewed, and a second iteration could start that led to a detailed description of our second-order themes. During the coding, we aimed for the codes to be on a similar level of abstraction while maintaining each informant's nuanced reflections. Saturation was reached by the 10th (PUs) and 13th (IUs) interviews with 96% and 95% of the codes identified by those points, respectively. This is consistent with previous studies on the method (e.g., Francis et al. 2010; Guest et al. 2006; Hennink et al. 2017), existing studies in marketing

(Gray et al. 2024; Songailiene et al. 2011), and research on the topic at hand (Tingelhoff et al. 2025).

4.2 | Interview Results: The Interrelation of Immersive Virtual Influencer Design Elements, Expected Functions, and Immersive Time

Our results highlight how IVIs' design elements can be linked to affordances (i.e., design-enabled functions), which, in turn, can drive ImT. We therefore categorize our results into three main categories: (1) IVIs' design elements, (2) IVIs' functions, and (3) their interrelation, which we will explain in the following sections. While we invite readers to examine our coding for an exhaustive insight into consumer expectations (consult Figures 2 and 3), we will discuss interview results that concern influential themes that our participants regarded as important or that resulted in surprising or contradicting findings compared to other interviewees or past research.

4.2.1 | Immersive Virtual Influencer Design Elements: Balancing Human and Supernatural Features

Our first aggregate dimension is IVI design elements, which shape the expected functions driving consumers to spend ImT. Figure 2 provides a visual representation of our codes for this aggregate dimension. The brackets behind every code (in both the figures and text body) list how many participants referenced a code, with the first number (reported before the vertical line) representing the PUs and the second number (after the line) representing the IUs. Hence, the maximum number of mentions before and after the vertical line is 15. Additionally, we provide an overview of group-specific contributions in Table 6, listing the number of PUs and IUs mentioning each second-order theme, along with two exemplary quotes for each theme.

Humanoid elements. Most interviewees discussed IVIs' design regarding *humanoid elements*. Foremost, IVIs should appear human (12|6), reflecting the concept of anthropomorphism—where human-like traits are perceived in non-human agents (Epley 2018). However, some IUs expressed concerns that IVIs' appearance could seem ingenuine, potentially related to the Uncanny Valley phenomenon, which describes the uneasiness evoked by actors that appear almost human (Mori et al. 2012). Further, IUs desire human-like IVIs “to develop a close-to-real connection, as when an IVI looks human, it's easier to connect with it” (IU15). PUs often expect IVIs to align with human beauty standards (2|1). PU4 stated, “I can imagine spending time with flawless IVIs in their perfect worlds, showing me how I want myself and my life to be.” In contrast, IUs positively recall interactions with imperfect avatars, “like one with severe acne, as they contrast with the prevailing ideal of perfection” (IU3), highlighting the importance of breaking stereotypes by including flaws to represent human nature closely (2|2), as they “view immersive platforms as an extension of [...] [their] own reality” (IU12). Interestingly, while both groups value IVI diversity (2|2), their perspectives differ: PUs appreciate demographic diversity like skin color, reflecting varied but idealized VI representations on social media, whereas IUs embrace broader physical attributes,

including body types and imperfections, considering them more relatable (e.g., Ferraro et al. 2024). In addition, both groups expect IVIs to act like HIs (7|9), supported by IVI design elements that enhance their human likeness, such as assigning a name (4|5), gender (4|5), and race (3|1).

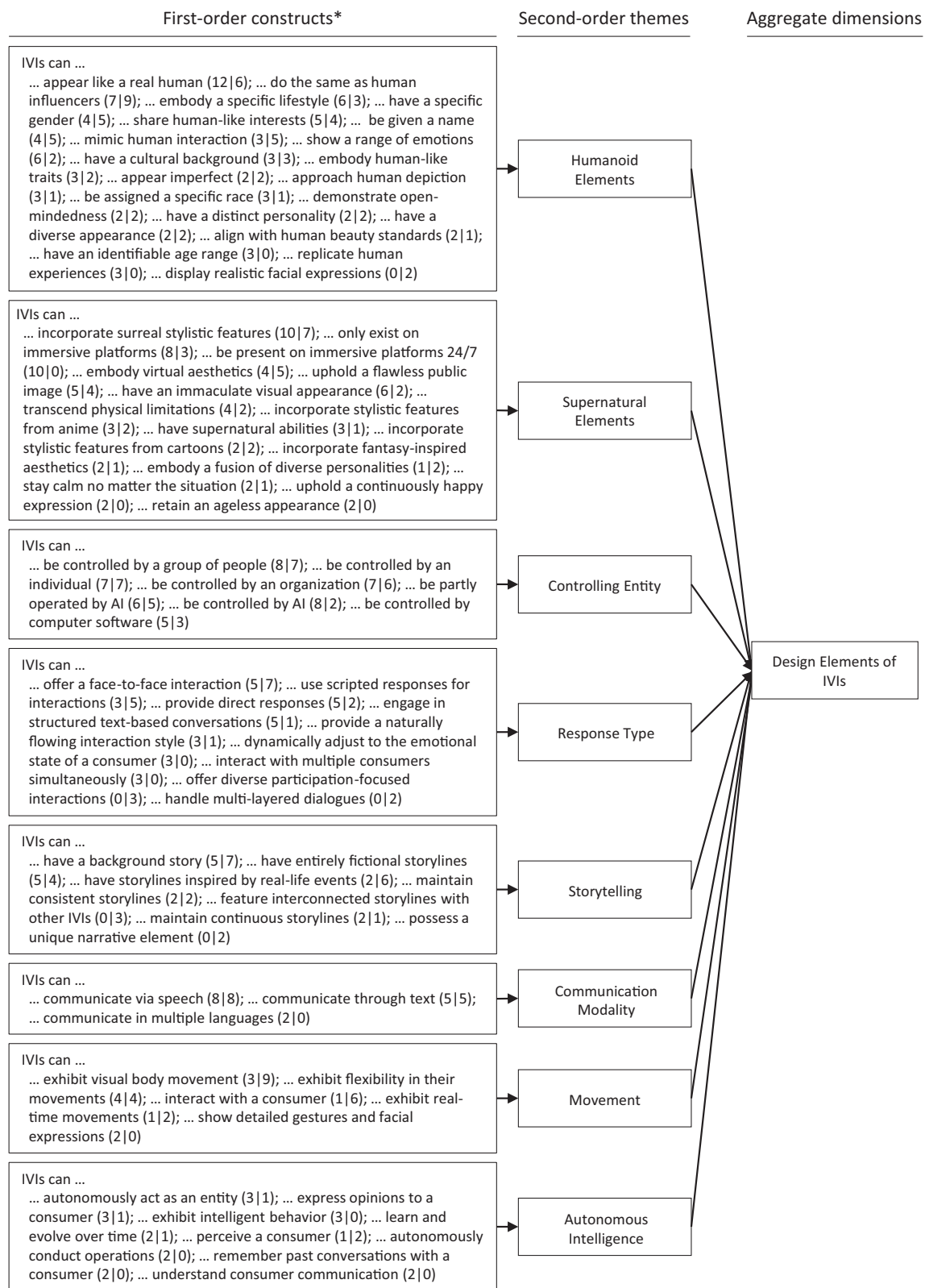
Supernatural elements. However, our interviewees suggest that IVIs should have some *supernatural elements* to distinguish them from humans (10|7). Predominantly, PUs prefer IVIs with an immaculate appearance (6|2), presumably influenced by the supernatural perfection of well-known virtual characters like Lil Miquela. Our interviewees expect “IVIs that appear somehow supernaturally looking” (PU6), incorporating anime (3|2) or fantasy-like aesthetics (2|1), likely to avoid feelings of uncanniness (Gutuleac et al. 2024). In this context, PUs frequently referred to Noonouri, whose large eyes set her apart from humans. IUs, favoring physically unattainable avatar attributes (Szolin et al. 2023), highlight immersive platforms' creative freedom. As IU1 explained, “I can design my avatar without limits, and the same applies to IVIs.” Further, PUs seem to value IVIs' supernatural abilities, such as staying calm (2|1) and maintaining a happy expression (2|0).

Controlling entity. Further, the *controlling entity* can shape how IVIs will be interacted with. For example, IVIs can be controlled by organizations (7|6), with both groups anticipating partial AI operation (6|5). However, PUs often assume that IVIs are fully AI-controlled (8|2). This is inaccurate, as most IVIs still rely on human development teams (Koles et al. 2024). Unlike VIs, which often disclose their controlling entity through profile descriptions, “IVIs are represented solely as avatars, offering no explicit cues about their operator” (PU9). This expectation influences PUs' assumptions, as they lack the experience to draw informed conclusions.

Response type. PUs' inexperience is also evident in their expectations regarding IVIs' *response type*, with many anticipating direct responses (5|2) and dynamic adjustments to emotional states (3|0). In contrast, IUs expect scripted interactions (3|5) akin to those of NPCs in VR games. However, they wish for multi-layered dialogues (0|2), seeking more profound and nuanced interactions, illustrating how experiences can shape and alter expectations toward IVIs.

Storytelling. Additionally, *storytelling* emerged as a design element. IVIs should have background stories (5|7), which may be fictional (5|4) or inspired by real-life events (2|6). Many interviewees mentioned Lil Miquela in this context, emphasizing how her storyline enhances interest. For IUs, interconnected storylines with other IVIs (0|3) are essential, as these are expected to provide greater narrative depth. While PUs, like PU6, wish for IVIs to show emotions (6|2), they especially value sharing the positive parts of an IVI's life: “What I resonate with is sharing happiness, like pregnancy updates [...]—the positive life aspects.” This tendency might stem from social media, where users are drawn to VIs expressing feelings (Shin and Lee 2020). In contrast, IUs appear less focused on emotions, possibly due to “current platform limitations in avatars' capacity to convey emotions convincingly” (IU9).

Communication modality. Effectively communicating these storylines depends on IVIs' *communication modality*. Both



*Number of interviewees discussing each respective construct in brackets (#PUs | #IUs)

FIGURE 2 | Coding framework for IVI design elements.

groups expect IVIs to communicate via speech (8|8) and text (5|5), with PUs additionally anticipating multilingual capabilities (2|0).

Movement. Further, *movement* is important to our interviewees. IVIs should display body movements (3|9) and flexibility (4|4), with PUs expecting detailed gestures and facial expressions (2|0).

TABLE 6 | Design elements of IVIs—exemplary quotes and group mentions for second-order themes.

Second-order theme	Exemplary quotes	PUs	IUs
Humanoid Elements (28)	<p>“I expect an IVI to be portrayed as a human being” (PU7).</p> <p>“I prefer IVIs that look more realistic, like one with severe acne, as they contrast with the prevailing ideal of perfection” (IU3).</p>	<p>PU1, PU2, PU3, PU4, PU5, PU6, PU7, PU8, PU9, PU10, PU11, PU12, PU13, PU14, PU15</p>	<p>IU1, IU2, IU3, IU4, IU5, IU7, IU8, IU9, IU11, IU12, IU13, IU14, IU15</p>
Supernatural Elements (27)	<p>“I expect IVIs that appear somehow supernaturally looking” (PU6).</p> <p>“A single IVI could cover an enormous bandwidth of roles, like being an athlete and chef simultaneously” (IU14).</p>	<p>PU1, PU2, PU3, PU4, PU5, PU6, PU7, PU8, PU9, PU10, PU11, PU13, PU14, PU15</p>	<p>IU1, IU2, IU3, IU5, IU7, IU8, IU9, IU10, IU11, IU12, IU13, IU14, IU15</p>
Controlling Entity (26)	<p>“IVIs are represented solely as avatars, offering no explicit cues about their operator” (PU9).</p> <p>“In my opinion, IVIs can be controlled by a human development team, which can also rely on AI to a certain extent” (IU14).</p>	<p>PU1, PU2, PU3, PU4, PU5, PU6, PU7, PU8, PU9, PU10, PU12, PU13, PU14, PU15</p>	<p>IU1, IU2, IU3, IU4, IU5, IU7, IU8, IU9, IU12, IU13, IU14, IU15</p>
Response Type (24)	<p>“I imagine the IVI offering face-to-face interactions” (PU11).</p> <p>“It is likely that IVIs would offer scripted interactions that follow a pre-written script” (IU5).</p>	<p>PU2, PU4, PU5, PU6, PU7, PU8, PU9, PU10, PU11, PU12, PU13, PU14, PU15</p>	<p>IU1, IU4, IU5, IU6, IU7, IU8, IU9, IU11, IU13, IU14, IU15</p>
Storytelling (18)	<p>“What I resonate with is sharing happiness, like pregnancy updates or marriage—the positive aspects of life. This is what really resonates with me” (PU6).</p> <p>“It is possible that you don’t have just one IVI, but three, four, or five who create drama and build a common story that I want to invest in” (IU12).</p>	<p>PU3, PU4, PU5, PU6, PU7, PU8, PU11, PU14, PU15</p>	<p>IU1, IU2, IU3, IU9, IU11, IU12, IU13, IU14, IU15</p>
Communication Modality (18)	<p>“In my opinion, IVIs could be able to speak all kinds of languages and communicate with people all over the world” (PU13).</p> <p>“And on immersive platforms, you could actually talk to the IVI in the same way that you would talk to a person in real life” (IU5).</p>	<p>PU1, PU6, PU7, PU9, PU10, PU13, PU14, PU15</p>	<p>IU1, IU2, IU3, IU4, IU5, IU6, IU7, IU8, IU11, IU12</p>
Movement (16)	<p>“I imagine that an IVI will be able to move around in a flexible way and do activities with me” (PU2).</p> <p>“In an interactive 3D environment, the IVI needs to move in real-time” (IU9).</p>	<p>PU2, PU6, PU7, PU9, PU10</p>	<p>IU3, IU5, IU6, IU7, IU8, IU9, IU10, IU11, IU12, IU13, IU14</p>
Autonomous Intelligence (16)	<p>“When I interact with IVIs, I want to feel like I’m engaging with a certain intelligence that can provide completely different answers depending on what I ask, almost as if it’s autonomous” (PU7).</p> <p>“And because there’s a kind of brain behind it, an IVI can evolve over time” (IU2).</p>	<p>PU2, PU4, PU5, PU6, PU7, PU8, PU9, PU10, PU11, PU14, PU15</p>	<p>IU2, IU4, IU12, IU13, IU15</p>

Autonomous intelligence. Notably, most PUs desire IVIs that exhibit *autonomous intelligence*, acting independently (3|1) and performing operations on their own (2|0), demonstrating intelligent behavior (3|0).

4.2.2 | Immersive Virtual Influencer Functions: Navigating Educational, Emotional, Social, and Epistemic Roles

We classify the functions potentially driving consumers' ImT with IVIs into distinct aggregate dimensions: *educational*, *emotional*, *social*, and *epistemic*. A visual representation of our codes for these dimensions is provided in Figure 3. In addition, we present an overview of group-specific contributions in Table 7.

Educational functions. Foremost, consumers want to spend time with IVIs for *educational functions*, viewing them as *sources of product and brand information*. Both groups expect IVIs to endorse products (11|13). While PUs primarily expect personalized recommendations (4|0), likely influenced by targeted advertising on social media, IUs want to receive discount codes (1|3), reflecting their virtual shopping experiences. As IU14 put it, “A main motivation for spending time on immersive platforms is getting discount codes for things I want.” While prior studies suggest that VIs should primarily endorse utilitarian products (e.g., Belanche et al. 2024), our IUs believe IVIs could promote a broader range, including art, fashion, and cars. For instance, IU2 highlighted, “An IVI can show me a car, making me want to buy it in both the virtual world and real life” (Mansoor et al. 2024). Therefore, IVIs in virtual worlds might be suited to promote hedonic products through experiential presentations. This aligns with IUs' interest in IVIs offering interactive product demonstrations (0|3), an approach that creates vivid mental images and heightens purchase behavior (Schlosser 2003).

Further, our interviewees envision IVIs as valuable *sources of knowledge*, contributing to *educational functions* that drive consumers' usage intention of immersive platforms (Wang and Shin 2022). IVIs are expected to address specific topics (6|5) and answer related questions (5|3). Particularly, PUs seek learning experiences (6|1), preferring well-structured, timely content (5|0), as expressed by PU13, “IVIs should deliver information similar to social media's short-message format” (Zhang et al. 2024). Moreover, PU9 noted, “If IKEA had an IVI quickly demonstrating how to assemble furniture, it would make the process more enjoyable with clear instructions, encouraging me to spend time on the platform.”

Emotional functions. IVIs should also fulfill *emotional functions*, primarily as *sources of enjoyment*, similar to VIs, attracting consumers with entertaining content (Lou et al. 2023). Both groups mention enjoyment but differ in how they articulate this aspect. Whereas PUs imagine IVI interactions as amusing (9|3) and gaming-like (5|3), IUs focus more on specific joint activities with IVIs, like playing games (1|3), dancing (0|3), or having IVIs host a virtual event (1|7). This likely reflects IUs' more profound understanding of avatar capabilities, while PUs, with limited knowledge, emphasize general functions. Additionally,

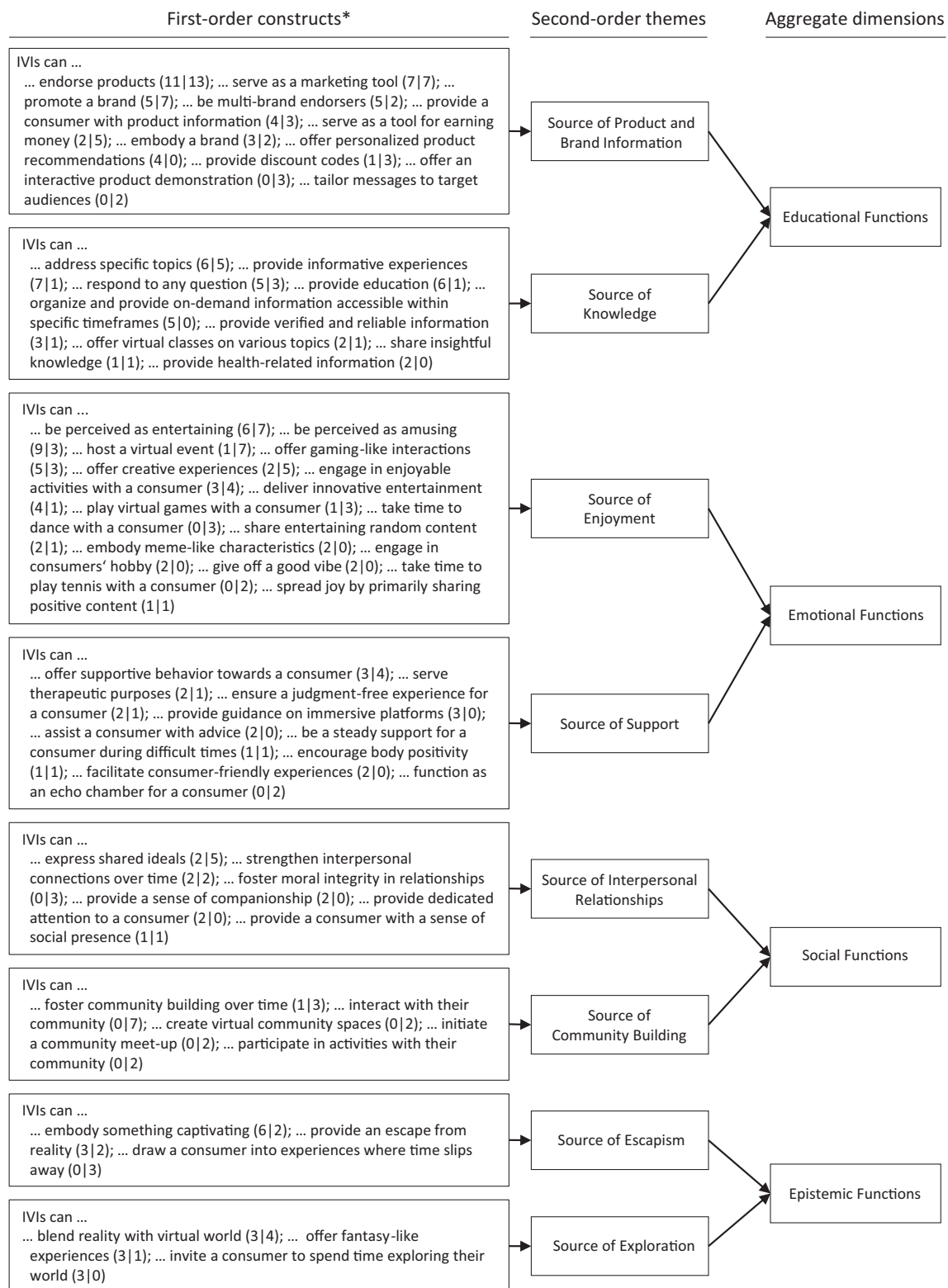
PUs, in particular, anticipate that IVIs could act as *sources of support*. Due to platform inexperience, PUs may seek guidance (3|0) and advice (2|0). PU12 summarizes, “An IVI that helps me navigate the platform could prevent frustration [...], so I don't log out too soon.” Conversely, IUs want IVIs to function as “echo chambers” (0|2), reinforcing their values. As IU15 put it, this includes “creating an environment of self-affirmation, where users feel validated and supported in their beliefs and emotions” (IU15), thereby strengthening their sense of self-worth (Meng et al. 2024).

Social functions. Consumers also envisioned *social functions*, imagining IVIs as *sources of interpersonal relationships*. For PUs, the focus appears to be on companionship (2|0) and receiving undivided attention (2|0). As PU14 envisioned, “IVIs giving me full attention can make my time with them worthwhile.” Meanwhile, IUs seem to value deeper connections based on shared ideals (2|5) and moral integrity (0|3). Both groups believe increased time spent with IVIs could strengthen these relationships (2|2). This is related to the concept of social presence (1|1), where individuals perceive themselves as being together with others in virtual spaces (Biocca et al. 2003). Building on VIs' role in community building (Sands et al. 2022), IVIs are expected to extend this potential within immersive platforms (1|3). For instance, they could initiate meet-ups (0|2) and join member activities (0|2). Only IUs, with one exception (PU12), mentioned IVIs as possible *sources of community building* (Freeman and Acena 2021), suggesting virtual communities are less critical to PUs but crucial for IUs in driving ImT. This may reflect differences between social media and immersive platforms: Consumers contact VIs through comments on Instagram. Conversely, in virtual worlds, people represented as avatars can interact with others (Hennig-Thurau et al. 2022), for example, while waiting in line to meet IVIs. This can create novel social experiences, as IU14 predicts: “Meeting others who share a connection with the IVI makes it easier to form new connections.”

Epistemic functions. Finally, IVIs could fulfill *epistemic functions* by serving as *sources of escapism and exploration*, providing intellectual stimulation through activities like a cognitive escape from everyday life and discovery (Tingelhoff et al. 2024). For instance, IVIs are envisioned to contribute to ImT, serving as an escape from reality (3|2) (Mogaji et al. 2023). As PU14 reflects: “Interaction with IVIs is meant to be an escape, a dream world, where avatars represent people's desires and dreams.” For this escape to work, IVIs should be captivating (6|2), embody something “deeply interesting” (PU15), and create experiences where time flies (0|3). Moreover, IVIs may invite consumers to explore their virtual worlds (3|0), blending reality with virtuality (3|4).

4.2.3 | A Design Perspective on Functions: Immersive Virtual Influencers' Impact on Immersive Time

The design elements of IVIs shape the functions that consumers expect. This, in turn, can drive the time they intend to spend engaging with IVIs (i.e., ImT). In the following, we will explore how this interconnection unfolds. In this context, we present five example quotes from each group, illustrating how our participants articulated ImT in Table 8.



*Number of interviewees discussing each respective construct in brackets (#PUs | #IUs)

FIGURE 3 | Coding framework for IVI functions.

Design elements advancing educational functions. Integrating *storytelling* into IVIs' personas could strengthen their ability to serve as *sources of knowledge* and address specific topics. For instance, “*The Japanese background story of Imma makes her more reliable in introducing [...] Japanese culture*”

(PU14). According to IU3, “*comprehensive story[telling] for an IVI can be linked to a brand's offering.*” In doing so, IVIs have the potential to serve as *sources of brand and product information*, particularly when products match the IVI's attributes. Congruence between VIs and products has been shown to

TABLE 7 | Functions of IVIs—exemplary quotes and group mentions for second-order themes.

Second-order theme	Exemplary quotes	PUs	IUs
Source of Product and Brand Information (28)	“Just like on social media, I expect personalized product recommendations” (PU5). “A main motivation for spending time on immersive platforms is getting discount codes for things I want” (IU14).	PU1, PU3, PU4, PU5, PU6, PU7, PU8, PU9, PU10, PU11, PU12, PU13, PU14, PU15	IU1, IU2, IU3, IU4, IU5, IU6, IU8, IU9, IU10, IU11, IU12, IU13, IU14, IU15
Source of Knowledge (23)	“An IVI could address learning needs, transforming information and delivering it effectively” (PU11). “IVIs could introduce me to new subjects” (IU2).	PU1, PU2, PU4, PU5, PU6, PU7, PU8, PU9, PU11, PU12, PU13, PU14, PU15	IU1, IU2, IU3, IU9, IU10, IU11, IU12, IU13, IU14, IU15
Source of Enjoyment (27)	“The virtual life of an IVI should entertain you” (PU3). “You can meet an IVI virtually and do things together, such as play tennis” (IU11).	PU1, PU2, PU3, PU4, PU5, PU6, PU7, PU8, PU9, PU10, PU11, PU13, PU14, PU15	IU1, IU2, IU3, IU5, IU6, IU7, IU8, IU10, IU11, IU12, IU13, IU14, IU15
Source of Support (16)	“An IVI that helps me navigate the platform could prevent frustration and stop me from feeling lost, so I don’t log out too soon” (PU12). “IVIs could be a kind of echo chamber, creating an environment of self-affirmation, where users feel validated and supported in their beliefs and emotions” (IU15).	PU2, PU3, PU4, PU6, PU7, PU8, PU9, PU10, PU11, PU12, PU15	IU6, IU11, IU12, IU14, IU15
Source of Interpersonal Relationships (15)	“An IVI should also be able to give me its full attention and should not be interacting with other avatars at the same time” (PU14). “It is important for me to be able to identify with an IVI and its ideals” (IU14).	PU1, PU3, PU6, PU7, PU9, PU11, PU14, PU15	IU2, IU3, IU9, IU11, IU12, IU13, IU14
Source of Community Building (10)	“It is also important that the IVI is trying to build a virtual community online” (PU12). “It is important to me that an IVI can interact with its community through joint activities” (IU10).	PU12	IU5, IU6, IU9, IU10, IU11, IU12, IU13, IU14, IU15
Source of Escapism (14)	“Interaction with an IVI is meant to be an escape, a dream world, where avatars represent people’s desires and dreams” (PU14). “I would like the IVI to help me to escape from the real world” (IU13).	PU2, PU3, PU5, PU7, PU9, PU10, PU14, PU15	IU2, IU5, IU10, IU12, IU13, IU14
Source of Exploration (11)	“I can imagine IVI inviting me to enter and explore its world” (PU9). “I imagine that by interacting with an IVI, the boundaries between the virtual and the real world start to blur” (IU9).	PU1, PU4, PU6, PU7, PU9, PU14	IU1, IU2, IU4, IU9, IU13

enhance advertising effectiveness by sustaining interest (Franke et al. 2023). Our IPs reflected this, as PU7 explained: “*Cosmetics seem less credible, whereas technical products or sports equipment are more suitable because they can be actively used while spending time with IVIs.*”

Furthermore, our interviewees indicated that “*IVIs exhibiting advanced autonomous intelligence [e.g., learning, evolving] may be seen as more competent*” (IU2) and effective in educational roles (Frischknecht 2021). While visual realism plays a role,

combining it with behavioral realism reinforces this impression (Yang et al. 2024). Specifically, IVIs’ communication modalities and response types, like speech and immediate feedback, might enhance online learning by mimicking face-to-face interactions (Lee 2022). Interestingly, our IPs noted that pairing supernatural visuals with realistic behavior could convey a sense of competence, contrary to prior findings about VIs (Yang et al. 2024). Therefore, IVIs educating consumers about the company and its products could form an integral aspect of socializing with brands during ImT (Kaur et al. 2024).

Design elements advancing emotional functions.

Movement could help position IVIs as *sources of support*. Non-verbal gestures like a shoulder touch can convey care (Maloney et al. 2020), potentially assisting consumers to feel supported, as mentioned by PU6. Additionally, *movement* appears to play an essential role in making IVIs *sources of enjoyment*, leading consumers to spend more time exploring immersive platforms (Wongkitrungrueng and Suprawan 2024). As PU9 imagines, “The IVI could provide information about a volcano and virtually transport me there, making it enjoyable and keeping me engaged for longer.”

Higher avatar expressiveness, including facial and body animation, can increase the enjoyment of VR interactions (Fraser et al. 2022). PU7 shares this perspective, stating, “To enjoy interacting with the IVI, it needs to move flexibly.” *Supernatural elements*, including artistic design features, may also enhance feelings of joy for both groups (Wu et al. 2022). Reflecting this, PU14 mentioned, “An imaginative appearance can be particularly entertaining,” referring to surreal stylistic aspects, such as anime-like aesthetics. Such elements could also reduce the Uncanny Valley effect (Gutuleac et al. 2024), as PU15 explained: “Noonoouri’s surreal appearance makes it clear she’s not real, which makes me less uncomfortable.” By aligning with these expectations, IVIs can foster enjoyable experiences likely to prolong ImT (Kaur et al. 2024). However, as IU9 stated, “When I spend time in these virtual environments, I like to engage with virtual characters like IVIs.” This highlights that, in addition to visual appeal, the interactive elements fostering engagement play a critical role in cultivating positive interactions.

Design elements advancing social functions. *Humanoid design elements* could foster *social functions* by enhancing social presence (Ahn, Cho, and Sunny Tsai 2022; Kang and Watt 2013). PU6 suggested that an IVI’s “human-like appearance can make it feel like it’s really present.” Because social presence depends on the feeling of interacting with a “real person,” equipping IVIs with identity cues (e.g., name, gender) could strengthen this impression (Choi and Kwak 2017). Our IPs also emphasized that behavioral realism, including communication modalities such as speech (Appel et al. 2012) and response types like nodding (von der Pütten et al. 2010) and eye contact (Bente et al. 2008), can enhance social presence by mimicking human interaction. This positions IVIs as potential sources of interpersonal relationships, a key factor in sustaining interest in immersive platforms (Kumar and Shankar 2024).

For both groups, disclosure seems crucial, as PU14 highlighted: “The first question I [would] ask myself is whether the IVI’s operating entity is a computer or a person. I [would] expect full transparency.” A lack of transparency about an IVI’s *controlling entity* could hinder genuine connections (Franke et al. 2023), negatively impact affection—an essential driver of ImT (Cheung et al. 2024)—and possibly lead consumers to seek alternatives (Kaur et al. 2024). Multimodal communication, such as combining speech with expressive body movements, may support collaborative experiences (Freeman et al. 2022) and encourage participation, another key driver of ImT (Cheung et al. 2024). This could position IVIs as *sources of community building* by

“effectively communicating their messages in community meetings, for example, by encouraging users to participate in shared activities” (IU10). During IVI inactivity, allowing consumers to leave messages might sustain interest and encourage future ImT (Freeman and Acena 2021).

Design elements advancing epistemic functions. IVIs might serve as *sources of escapism* and *exploration* by drawing consumers into evolving narratives through *storytelling* that can keep them engaged over time (Bilgihan et al. 2024). As PU3 speculated, “With an IVI, a continuous story is created that should exist over a long period.” Gestures like “shaking hands” could draw consumers into these narratives, making interactions more natural (PU6, IU10). PU6 added, “Exploring new virtual worlds [would] inherently increase the time I invest,” underscoring how IVIs could encourage ImT through exploration. Similarly, IU2 reflected, “I can escape from reality for hours on immersive platforms without noticing how time flies.” PU9 further emphasized this sentiment, saying, “The opportunity to escape from reality—stepping into new environments and experiencing things beyond everyday life is a major reason for spending time on immersive platforms,” highlighting escapism as another critical ImT driver (Mogaji et al. 2023, 2024).

5 | Discussion

Our results reveal that, while a majority of participants express interest in spending time with IVIs (84%), only a small percentage have already spent substantial ImT with them (28%). This gap between interest and actual time investment is primarily attributed to the unappealing design of IVIs (Mean score = 4.78/7) and their limited functions, including a lack of expected benefits (Mean score = 4.82/7) and insufficiently engaging activities (Mean score = 4.42/7).

Building on these quantitative findings, we use the affordance perspective (Leidner et al. 2018; Meske et al. 2023) to reveal how specific IVI design elements and their functions can potentially drive ImT. Our qualitative results highlight epistemic functions, including escapism (Mogaji et al. 2023, 2024) and exploration, as central for encouraging ImT. Furthermore, alongside enjoyment (Wongkitrungrueng and Suprawan 2024), support functions as an emotional driver, potentially triggering positive experiences that increase time spent on immersive platforms (Kaur et al. 2024). We show that facets of participation (Cheung et al. 2024), including community building and affection (Cheung et al. 2024), expressed through interpersonal relationships, may be important social functions that drive ImT. Finally, educational functions, such as providing knowledge along with product and brand information, also appear to encourage staying longer in these environments. Together, the IVIs’ functions are essential drivers of ImT.

By exploring these drivers, our findings provide a deeper understanding of “the motivation for [increased] immersive time” (Mogaji et al. 2023, 4). Specifically, our study focuses on identifying which affordances (i.e., design-enabled functions) drive intended ImT with IVIs for different target groups, addressing Mogaji et al.’s (2023) call to “help brands conceptualize [...] affordances” (p. 4) that meet consumers’ expectations, potentially

TABLE 8 | How interviewees understood immersive time—exemplary quotes.

Exemplary quotes	PU	IU
“I will spend my time on immersive platforms by putting on a VR headset to interact with an IVI, making it the new way to engage with brands.”	PU4	
“Spending time immersed in these worlds, at least for me, will also be about defining my own limits – deciding how much I want to engage, what I let in, and what I filter out.”	PU6	
“For me, spending time there will involve actively engaging with the virtual environment – participating in shared activities with others and truly immersing myself in the experience.”	PU7	
“One reason I’ll spend time on immersive platforms is the opportunity to escape from reality – stepping into new environments and experiencing things beyond everyday life.”	PU9	
“When I put on a VR headset, I’ll be spending time moving through different virtual rooms – exploring products, interacting with others, and accessing detailed information on different things in a fully immersive way.”	PU14	
“I can escape from reality for hours on immersive platforms without noticing how time flies.”		IU2
“Putting on a VR headset to spend time on immersive platforms, I truly immerse myself in the environment and take something meaningful away from it.”		IU5
“When I spend time in these virtual environments, I like to engage with virtual characters like IVIs.”		IU9
“For me, spending time on immersive platforms means escaping to a world without boundaries – disconnecting from reality to experience things beyond what’s possible in the real world.”		IU13
“The way I spend my time in these virtual spaces will also be a conscious decision – choosing who I engage with, reflecting on how the content impacts me, and knowing when to step back if needed.”		IU14

leading to satisfying actualization (Leidner et al. 2018). Thus, our study expands knowledge on how design-enabled functions of IVIs in immersive environments can foster the willingness to spend time in these settings. Considering these insights, we specify a framework on consumer-specific IVI functional expectations driving ImT—building on Mogaji et al. (2023) (Figure 4). Through our framework, we provide a more comprehensive understanding of how IVI functions contribute to consumers’ ImT with IVIs.

To better understand how these drivers manifest, we investigated how PUs and IUs differ in prioritizing the functions of IVI design elements that potentially drive their ImT. Existing research on VIs overlooks differences in how diverse target groups form affordances. Our data reveal three group-specific differences in the prioritization of design-enabled functions: (1) PUs seek an idealized utopia, while IUs view immersive platforms as an extension of physical reality. (2) PUs envision one-to-one interactions with IVIs, whereas IUs anticipate community building. (3) PUs are likely to prefer personalized IVI content, while IUs tend to prioritize practical, reality-based IVI functions during their ImT.

The foundation for encouraging ImT with IVIs lies in their human-like appearance, but PUs and IUs differ in their interpretation of this aspect. While previous literature on VIs shows that diversity enhances relatability by making these actors appear more human (e.g., Ferraro et al. 2024), our findings indicate that different group expectations may require distinct approaches to diversity for IVIs. PUs seek immaculate IVIs, focusing on diversity limited to demographic traits like skin color. This suggests that PUs expect their time spent with IVIs to reflect a glorified utopia—a perfect world—primarily explained by idealized

portrayals on social media. In contrast, IUs embrace a broader interpretation of diversity, including imperfections like acne, and view immersive platforms as an extension of their reality.

Furthermore, in terms of social functions, IUs seek more profound relationships with IVIs, likely influenced by the formation of virtual friendships that mirror physical-world social interactions (Freeman and Acena 2021). While PUs are drawn to fictional narratives, positive real-life experiences with happy IVIs also align with their idealized expectations.

PUs appear to prioritize the undivided attention of IVIs, valuing one-to-one interactions rather than group settings to drive their ImT. Similar to new members in online communities, PUs may benefit from focused attention to sustain participation (Pethig et al. 2024).

IUs prioritize community building in virtual worlds, seeking shared experiences (e.g., dancing) and collective participation (e.g., gaming), often based on previous VR experiences that bridge virtual and physical-world connections (Freeman and Acena 2021). In addition to their desire for ImT with an IVI, they also express interest in spending time with other community members.

Beyond social functions, there are differences in the educational functions required by the two groups. For PUs, concise information delivered quickly is crucial (Zhang et al. 2024). In contrast, IUs prefer detailed, interactive product demonstrations (e.g., IVI-led tutorials).

Additionally, PUs look for IVIs that adapt to their emotional state and act as guides, providing personalized recommendations.

Conversely, IUs prioritize practical benefits (e.g., discount codes), reflecting their preference for useful features in both virtual and real life.

These group-specific differences in the requirements regarding IVI functions highlight the need for a more comprehensive approach to understanding their impact on ImT. While previous studies focus primarily on linking a single VI design element (e.g., humanoid design) to one specific VI function (e.g., parasocial relationship building) (e.g., Dabiran et al. 2024; Liu and Wang 2024; Ma and Li 2024; Mrad et al. 2024), we demonstrate how multiple IVI design elements are interrelated with various functional expectations, including educational, emotional, social, and epistemic aspects. Notably, these design elements do not solely support one function but can collectively serve multiple purposes, fulfilling the diverse needs of the different consumer groups.

5.1 | Theoretical Implications

Our contribution to marketing and consumer behavior research is threefold: First, we explore the drivers of ImT with IVIs, providing novel insights into their design-enabled functions. Second, we examine group differences in how PUs and IUs prioritize these drivers, revealing important distinctions in consumer behavior. Finally, we contribute to establishing the affordance perspective in the (virtual) influencer literature by demonstrating its usefulness for understanding how IVIs' design elements can shape consumers' functional expectations.

Kaur et al.'s (2024) findings indicate that consumers perceive immersive platforms as offering limited opportunities to engage with brands, thus constraining ImT. Conversely, our study profoundly investigates how brands can use IVIs as a key opportunity to interact with consumers on these platforms. We demonstrate that, despite the potential of IVIs, discrepancies exist in consumer behavior regarding these characters. These contribute to the limited time spent with IVIs, hindering sustained engagement. We highlight how IVI design and functions may fail to foster the consumer engagement necessary to encourage sustained ImT.

Building on this, our research explores the qualitative aspects of consumer behavior in the context of IVIs, indicating which IVI design elements and functions drive ImT. By deepening the understanding of ImT in this context, we uncover how the four drivers—epistemic, emotional, social, and educational—can encourage consumers to spend more time with IVIs. Previous studies have predominantly focused on single drivers of ImT related to immersive platforms. Our research provides an integrated perspective by highlighting how multiple drivers can be activated through avatar design. This comprehensive view broadens the understanding of how IVIs can encourage consumers to spend ImT, offering a key contribution to the literature. Exploring the potential influence of multiple IVI functions on ImT provides more concrete insights into consumer behavior and the affordances (i.e., design-enabled functions) that can drive sustained engagement.

Our findings also contribute to the conceptual understanding of how “traditional” VIs can be transformed into IVIs. We illustrate how VI design elements (e.g., storytelling) can be advanced through avatar-specific elements (e.g., movement) to enable existing VIs to fully leverage the unique immersive platform characteristics. Past avatar research predominantly investigated self-focused measures, examining users' avatars' self-related perceptions (e.g., Kim et al. 2025; Taylor et al. 2024). However, recent work by Chae et al. (2025) has explored how users perceive other avatars regarding human likeness. Our study expands this perspective by considering various design elements, including storytelling, movement, and other avatar-specific attributes. We explore how these elements shape consumers' expectations and influence their behavioral intentions in terms of spending ImT.

In addition, this study reveals that different consumer types expect distinct IVI functions, which, in turn, encourage behaviors such as spending ImT. Our data highlight three group-specific differences influencing IVI design, reflecting how PUs and IUs prioritize various aspects to drive their ImT. Notably, both groups view IVIs as relevant product and brand information sources, with transparency encouraging ImT.

Lastly, deploying the affordance perspective for supporting theory building in marketing and consumer behavior research is limited, with a few recent exceptions (i.e., Park and Yap 2024). We achieve this by applying the perspective to a new actor, IVIs. While prior research has focused on the digital capabilities of immersive platforms (Shin 2022; Xun and Zheng 2023), we broaden this view by identifying affordances unique to platform actors, emphasizing the social interactions they can foster (Hennig-Thurau et al. 2022). This approach offers valuable insights into how IVIs, as mediators of consumer-brand interactions, can influence consumer behavior in immersive environments, particularly by driving ImT.

5.2 | Managerial Implications

With more brands partnering with IVIs (e.g., Maybelline New York with Kai) and some even creating their own (e.g., Louis Vuitton with Livi) (LVMH 2022; McDowell 2024), this research offers key managerial insights for shaping current marketing strategies. Based on our framework (Figure 4), marketers should target two groups to drive ImT with IVIs, each prioritizing different design-enabled functions: PUs, who have yet to start their “immersive platform journey,” and IUs, already advanced in this journey.

First, brands targeting PUs should create an idealized utopia by designing immaculate IVIs that appear happy and calm, with diversity limited to traits like skin color. This group is drawn to fictional narratives but also appreciates positive real-life elements that match their idealized expectations. In contrast, to drive ImT with IUs, companies should position IVIs as an extension of physical reality, incorporating broader diversity, including realistic traits (e.g., acne), and blending fiction with real-life events in their storylines.

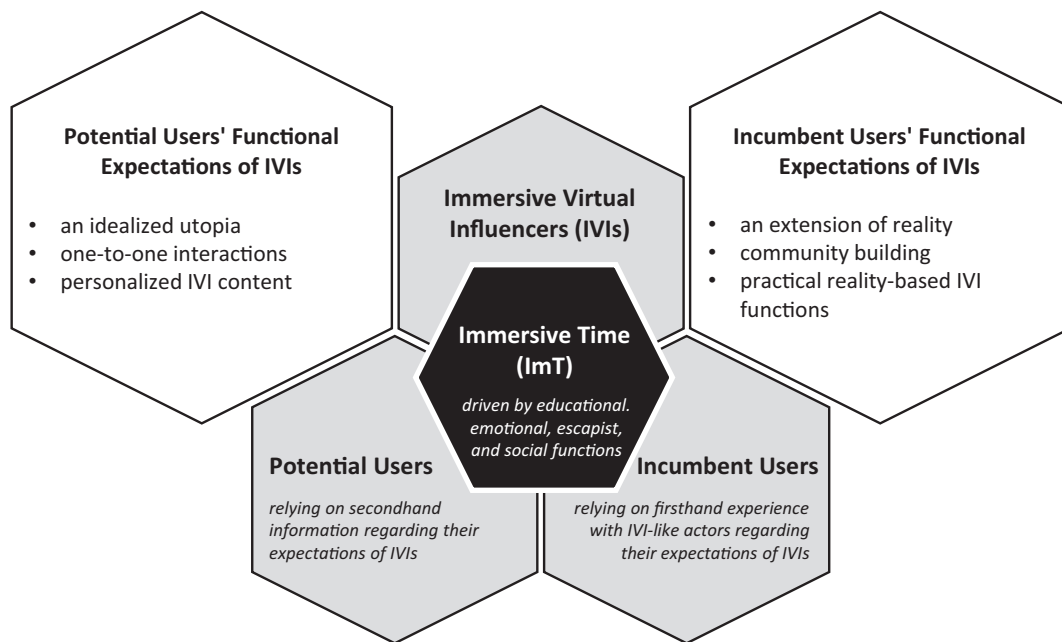


FIGURE 4 | Framework on consumer-specific expectations regarding IVI functions driving ImT.

Second, PUs prefer one-to-one IVI interactions. Companies should focus on individual interactions, using elements like direct responses or nodding to cater to this. To ease PUs' transition into virtual (brand) communities, IVIs can invite them to events. Conversely, IUs expect community building, which can be addressed through IVI-led events (e.g., workshops).

Third, PUs envision personalized IVI content. Companies can leverage AI-supported IVIs to deliver targeted advertising, concise content, and guidance. In contrast, IUs prioritize practical, reality-based IVI functions. Brands should provide real-world benefits, such as discount codes or integrate “play-to-earn” models. Moreover, detailed content, like IVI-led product demonstrations, is crucial for IUs to invest more ImT.

For both groups, aligning IVI attributes with the product and ensuring transparency about the controlling entity is vital. Brands should also incorporate behavioral realism, use supernatural elements to avoid the Uncanny Valley effect, and design responsive, flexible IVIs with engaging narratives featuring “leave-a-message” options to drive ImT.

In conclusion, by leveraging IVIs with carefully considered design elements, brands can drive ImT with PUs and IUs, enabling them to thrive in the dynamic field of IVI marketing.

5.3 | Limitations and Further Research

Our work has some limitations that emphasize the need for further research on IVIs. Our mixed-method approach provides in-depth insights into IVIs' design elements and functions that are important for consumers' decision to spend more ImT with IVIs in the future and for which consumers are likely to exhibit elevated expectations. However, it is up to future research to design different IVIs and analyze consumers' ImT, with a particular focus on how consumers actively engage with specific design

elements and experience them, and how these interactions alter their initial expectations and preferences. Additionally, future studies should extend the study's external validity across a diverse demographic and cultural audience. Personality traits (e.g., personal innovativeness) may also shape consumers' expectations of IVIs, and their impact on ImT should be investigated. During our interviews, we noticed that consumers may perceive some IVI design aspects negatively. Future research should identify these potentially problematic elements, assess their impact on consumer expectations, and develop mitigation strategies (Tingelhoff and Marga 2025). In addition to the cost of acquiring a VR headset, motion sickness during initial use (Hennig-Thurau et al. 2024) presents a limitation for PUs' ImT. Future studies could explore IVI design solutions to reduce this effect, providing a more seamless entry for PUs into immersive environments while motivating them to invest time with IVIs. Additionally, research should investigate other ways to foster initial adoption for PUs.

In contrast, for IUs, who are already accustomed to using immersive platforms, future studies should focus more on marketing strategies to prolong their ImT. Moreover, future research could explore when PUs transition into the stage of IUs based on accumulated ImT, providing insights into long-term consumer behavior. By addressing these gaps, future studies can build on our findings and contribute to a more comprehensive framework that accounts for both the drivers and barriers of ImT with IVIs.

6 | Conclusion

As immersive platforms continue to transform social and business interactions, IVIs play an increasingly crucial role. As virtual brand “ambassadors,” they can drive consumers to spend ImT and engage with branded content. Despite this potential, how IVIs can drive ImT and influence consumer behavior remains underexplored. This paper contributes to closing this gap

by extending the literature on (immersive) VIs, ImT, and immersive platforms, offering new insights into IVIs' role in shaping consumer behavior in immersive environments. It systematically reveals the (limited) amount of ImT consumers currently spend with IVIs and investigates the design-enabled functions of IVIs that can enhance this amount of time.

Notably, we differentiate between two consumer groups of varying exposure to immersive platforms (i.e., PUs and IUs), tailoring our insights and recommendations to their needs. This differentiation led to novel findings. We uncover consumer behavior patterns distinct to each group, particularly how PUs and IUs prioritize different aspects of IVI design. As our study highlights the importance of aligning IVI design with consumer expectations, we show how IVI design elements can activate multiple drivers of ImT, namely educational, emotional, social, and epistemic drivers. By exploring these, we develop a framework that details the functional expectations of both consumer groups. Thus, our findings offer valuable insights into how IVI design and functions can be strategically tailored to create more engaging and prolonged virtual experiences across both consumer segments.

Moreover, our insights direct future research onto pivotal avenues. First, future studies should investigate potential negative perceptions of certain IVI design elements, as these could discourage consumers from spending ImT and may prompt them to explore alternative options (Kaur et al. 2024). Additionally, research should explore strategies for fostering initial adoption for PUs and ways to prolong ImT for IUs. Understanding how PUs transition into the stage of IUs based on accumulated ImT with IVIs will provide valuable insights into long-term consumer behavior. Building on our own research and answering these questions will enable us to comprehensively understand IVIs' pivotal role as virtual brand "ambassadors" and harness their full potential.

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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Appendix A

Summary of Relevant Literature on Immersive Time

Author(s)	Research design	Focus	Summary of findings
Cheung et al. (2024)	Empirical, quantitative study ($n = 267$) Data from Asian consumers using VR technologies to participate in MICE (meetings, incentives, conferences, and exhibitions) activities on immersive platforms	Investigated mechanisms driving consumer participation in MICE activities on immersive platforms through the lenses of media richness, perceived realism, and engagement, as well as the impact on consumers' ImT and future visit intention	Found that media richness dimensions, such as multiple cues, immediate feedback, and personal focus, enhance perceived immersive platform realism, which in turn drives consumer engagement in MICE activities Demonstrated that higher levels of perceived realism and engagement increase consumers' ImT and future visit intention Showed that among consumer engagement dimensions, participation had the strongest impact on ImT, followed by affection and absorption
Kaur et al. (2024)	Empirical, qualitative study ($n = 63$) In-depth, semi-structured interviews with Generation Z Indian consumers	Examined consumer behavior on immersive platforms, using the Engel-Kollat-Blackwell model as a theoretical framework	Revealed that consumer behavior on immersive platforms follows the stages of awareness, information search, evaluation of alternatives, engagement, and post-engagement evaluation, as outlined by the Engel-Kollat-Blackwell model Found that positive experiences extend ImT, while negative experiences reduce it, prompting exploration of alternatives Quantified aspects of ImT, highlighting behaviors like avatar customization, NFT trading or creation, and interacting with brands and other consumers
Mogaji et al. (2023, 2024)	Conceptual	Introduced the concept of immersive time (ImT) as the conscious time consumers spend using immersive devices like VR headsets to engage with their environment on immersive platforms continually	Emphasized that understanding the importance of ImT has implications for researchers, practitioners, technology developers, brand managers, and policymakers who are involved in developing strategies for immersive platforms and ensuring consumer safety within these environments
Wongkitrungrueng and Suprawan (2024)	Empirical, quantitative study ($n = 702$) Data from Thai consumers of Asia's largest immersive platform	Examined consumer responses to brand experiences on immersive platforms	Demonstrated that consumers who enjoy the branded virtual environment are likely to spend more time exploring it Concluded that longer engagement helps consumers gain a deeper understanding of both the functional and symbolic value of the virtual environment

Appendix B

Summary of Relevant Literature on Virtual Influencers

Author(s)	Research design	Focus	Design Elements/ functions	Summary of findings
Arsenyan and Mirowska (2021)	Empirical, qualitative study (netnography) Analyzing 48.827 comments from three VIs' Instagram posts over 11 months	Examined posting behavior and audience reactions to HIs and VIs (human-like and anime-like) on social media, focusing on text and emoji-based interactions	Design element: Appearance	Found that human-like VIs receive fewer positive reactions compared to animated VIs and HIs, highlighting differences in audience engagement across these personas
Audrezet and Koles (2023)	Empirical, qualitative study ($n = 42$) In-depth, semi-structured interviews from Italy and France	Explored young consumers' overall perceptions of VIs, emphasizing insights particularly relevant to brand strategies	Exploring various functions	Identified three consumer personas—passive bystanders, active community members, and devoted contributors—based on VI following behaviors, providing segmentation insights Determined parasocial relationships and community building as important VI functions
Cheung and Leung (2021)	Empirical, quantitative study ($n = 105$) Data collected from consumers aged between 18 and 27 years old active on Instagram	Assessed consumer perceptions of VIs, focusing on their attractiveness, trustworthiness, and expertise	Design element: Appearance	Found that cartoonish-designed VIs are perceived as more attractive and credible than human-like VIs
Dabiran et al. (2024)	Empirical, quantitative study ($n = 430$) Data from Instagram users aged 18 and older who follow at least one VI	Evaluated the effects of four types of anthropomorphism—appearance, moral virtue, cognitive experience, and conscious emotionality—on followers' perceptions of VI credibility, parasocial relationships, and purchase intention	Design element: Appearance Function: Parasocial relationships	Found that moral virtue and cognitive experience positively affect both credibility and parasocial relationships, while appearance impacts only parasocial relationships, and conscious emotionality shows no significant effect Credibility and parasocial relationships both enhance purchase intention, with parasocial relationships having a stronger impact Influencer–product congruence moderates the effect of credibility on purchase intention Linked appearance to parasocial relationships
Dondapati and Dehury (2024)	Empirical, quantitative study ($n = 624$) Data from university students from various academic disciplines	Examined whether perceived homophily and parasocial relationships mediate the effect of influencer type (HI vs. VI) on purchase intent, and analyzed the moderating role of perceived authenticity	Function: Parasocial relationships	Found that perceived homophily and parasocial relationships mediate the effect of influencer type (HI vs. VI) on purchase intent, with perceived authenticity moderating this pathway The indirect effect via parasocial relationships and perceived homophily was stronger for HIs than VIs

Author(s)	Research design	Focus	Design Elements/ functions	Summary of findings
Franke et al. (2023)	Empirical, quantitative study (Study 1, $n = 333$; Study 2, $n = 142$) Data from female German followers of VIs	Examined whether VIs achieve significant advertising goals by comparing consumer appeal to HIs and assessing their ability to recognize the influencer's non-human nature	Design element: Disclosure	Found that consumers struggle to identify VIs and generally prefer HIs in cosmetic brand advertising, as they are evaluated more positively in terms of endorser and advertisement effectiveness VIs enhance perceived ad novelty, particularly for technical products, where their use can increase brand impact A second study revealed that product category moderates perceived congruence, influencing advertising effectiveness
Hofeditz et al. (2022)	Empirical, quantitative study ($n = 112$) Data collected from consumers aged 20 to 66	Examined differences in the perception of trust in HIs and VIs	Design element: Appearance Function: Social presence	Found that participants often struggled to distinguish between HIs and VIs but consistently rated HIs higher in trust, social presence, and humanness Linked appearance to social presence
Kim et al. (2023)	Empirical, quantitative study ($n = 233$) Data collected from consumers aged between 18 and 34 years old active on Instagram	Examined the effects of human-like VIs and anime-like VIs, along with sponsorship disclosure, on message credibility and attitude formation	Design element: Appearance	Found that endorsements by human-like VIs are more effective than those by anime-like VIs in enhancing perceptions of message credibility
Li et al. (2023)	Mixed-method empirical study Analyzing 107,218 comments from three VIs' Instagram posts (Study 1) Empirical, quantitative study (Study 2, $n = 261$; Study 3, $n = 511$; Study 4 = 380)	Examined how consumers' awareness of VIs' minds influences interactions and ad evaluations Compared endorser effectiveness between HIs and VIs, focusing on sensory capabilities as a foundation for endorsement credibility	Design elements: Appearance and sensory capability	Found that VIs are less effective than HIs in driving brand attitude and purchase intention This effect is sequentially mediated by perceived sensory capability and credibility but diminishes when sensory cue salience is low
Liu and Wang (2024)	Empirical, quantitative study ($n = 826$) Data collected from Instagram users	Examined how the anthropomorphism of VIs—defined by humanness, attractiveness, and eeriness—influences parasocial relationships	Design element: Appearance Function: Parasocial relationships	Found that trustworthiness and wishful identification mediate the impact of VI anthropomorphism on parasocial relationships, with autonomy moderating this process Identified distinct criteria for relationship development between existing and prospective VI followers Showed that the link between anthropomorphism and trustworthiness follows a linear rather than curvilinear pattern, contributing to the uncanny valley debate Linked appearance to parasocial relationships

Author(s)	Research design	Focus	Design Elements/ functions	Summary of findings
Lou et al. (2023)	Empirical, qualitative study (<i>n</i> = 26) In-depth, semi-structured interviews with Instagram users who follow at least one VI	Investigated followers' engagement with VIs to identify and conceptualize their primary functional appeal	Exploring various functions	Identified and conceptualized six key functions driving followers' engagement with VIs: novelty, information, entertainment, surveillance, aesthetics, and integration and social interaction
Ma and Li (2024)	Empirical, quantitative study (<i>n</i> = 298) Data collected from consumers in the United States aged 18 to 81	Investigated the use of VIs in branding, focusing on how variations in human- like appearances influence anthropomorphism (mindful vs. mindless) and parasocial interactions within the communication process	Design element: Appearance Function: Parasocial interactions	Found that more human-like VIs were associated with higher mindful anthropomorphism and stronger parasocial interactions, leading to better brand attitudes and purchase intentions No significant branding differences were found between highly human-like VIs and HIs or between moderately and highly human-like VIs via mindless anthropomorphism Linked appearance to parasocial interactions
Mirowska and Arsenyan (2023)	Empirical, quantitative study (<i>n</i> = 214) Data collected from individuals majoring in Marketing	Investigated how consumers' empathy influences reactions to VIs compared to HIs	Design element: Appearance Function: Escapism	Found that consumers high in empathy are more likely to follow VIs and find them socially attractive compared to HIs, but this effect disappears when the influencers' nature is unknown Proposed an "escapism effect," where VIs offer greater emotional diversion and require less cognitive effort Linked appearance to escapism
Mrad et al. (2024)	Empirical, qualitative study (<i>n</i> = 40) In-depth, semi-structured interviews with VI followers aged 18 to 56 years	Explored how social comparisons and parasocial relationships manifest in interactions with VIs through followers' lived experiences	Design element: Appearance Function: Parasocial relationships	Found that perceiving VIs' human-like traits induces social comparisons among followers, triggering responses such as jealousy, motivation, and gratitude Anthropomorphism was shown to strengthen parasocial relationships, characterized by a paradoxical multidirectionality, combining community-based interactions and perceived multidimensional connections with VIs Linked appearance to parasocial relationships
Stein et al. (2024)	Empirical, quantitative study (<i>n</i> = 179) Collected data from consumers aged 18 to 65 years who regularly use video streaming platforms	Explored how consumers engage with and relate to VIs by comparing viewers' parasocial interactions with HIs and VIs	Function: Parasocial interactions	Found no significant overall difference in consumers' parasocial interactions with HIs and VIs Stronger parasocial interactions with VIs were suppressed by perceptions of lower mental human-likeness and self-similarity

Author(s)	Research design	Focus	Design Elements/ functions	Summary of findings
Xie-Carson et al. (2023)	Empirical, qualitative study (netnography) Analyzing 1112 comments from 52 VIs' Instagram posts	Investigated functional appeal and content factors driving consumer engagement with VIs	Exploring various functions	Found that consumers engage with VIs for their functional appeal, including entertainment, emotional connection, and educational content
Yoo et al. (2024)	Empirical, quantitative study ($n = 265$) Data from Instagram users aged 18 and older familiar with VIs	Investigated the influence of textual social cues (emojis, disclosure) on VIs' perceived attractiveness, homophily, and credibility, as well as their impact on consumers' purchase intentions, while assessing the moderating role of perceived anthropomorphism	Design element: Disclosure	Found that the textual cues, emojis, and disclosure directly influence attractiveness and attitude homophily, which significantly impact VIs' credibility Credibility emerged as a significant driver of purchase intention
Zhou et al. (2024)	Empirical, quantitative study (Study 1, $n = 200$; Study 2, $n = 982$; Study 3, $n = 6522$; Study 4, $n = 387$; Study 5, $n = 589$; Study 6, $n = 379$) Data collected via online panel providers Credamo (Study 1) and Prolific (Studies 2, 4, 5, 6); via A/B advertisement experiment on e-commerce website (Study 3)	Examines consumers' responses to sensory endorsements from VIs	Design elements: Sensory capability	Found that consumers perceive VIs and HIs as having similar visual and auditory capacities but lower haptic, olfactory, and gustatory capacities for VIs Endorsements focusing on proximal sensory experiences reduce purchase intentions for VIs This effect is serially mediated by imagery difficulty and perceived sensory capacity but is mitigated when focusing on distal sensory experiences, omitting sensory details, or introducing technology that enhances VIs' sensory capabilities

Appendix C

Details on Validity and Reliability of Study 2

We followed Lincoln and Guba's (1985) criteria for conducting our interviews. They suggest considering the following aspects to ensure the validity and reliability of qualitative data: credibility, transferability, dependability, and confirmability. Credibility refers to the congruency of findings with reality (Merriam and Grenier 2019). To ensure that our interview partners presented credible knowledge about their expectations regarding IVIs on immersive platforms, we took six steps. First, we recruited participants with a solid understanding of VIs. To do so, we selected individuals who had previously interacted with VIs on social media (e.g., by commenting on a VI's post on Instagram). Second, we determined whether participants had prior experience with IVI-like actors (e.g., virtual shop assistants and NPCs in VR games) or were familiar with IVIs through second-hand information from media and peers. This helped us to assign them to the appropriate groups (i.e., PUs and IUs). Third, we verified participants' shared understanding of immersive platforms and IVIs. We executed this by asking each to provide personal definitions of both constructs at the beginning of their interviews. Fourth, we confirmed that all interviewees were interested in interacting with IVIs, with all 30 participants open to spending time with these. Fifth, we ensured that our sample represented reality as closely as possible. We recruited participants whose age and gender distributions (average age: 27.9 years for both PUs and IUs; male ratio: 53% for PUs, 66% for IUs) aligned with current immersive platform users, who are predominantly Gen Z and Millennials, and who are primarily male (Deloitte 2023). Sixth, we tried to increase the credibility

and mitigate potential biases during the data analysis (Valenzuela and Shrivastava 2002). Hence, the first two authors of this paper coded the data simultaneously and independently.

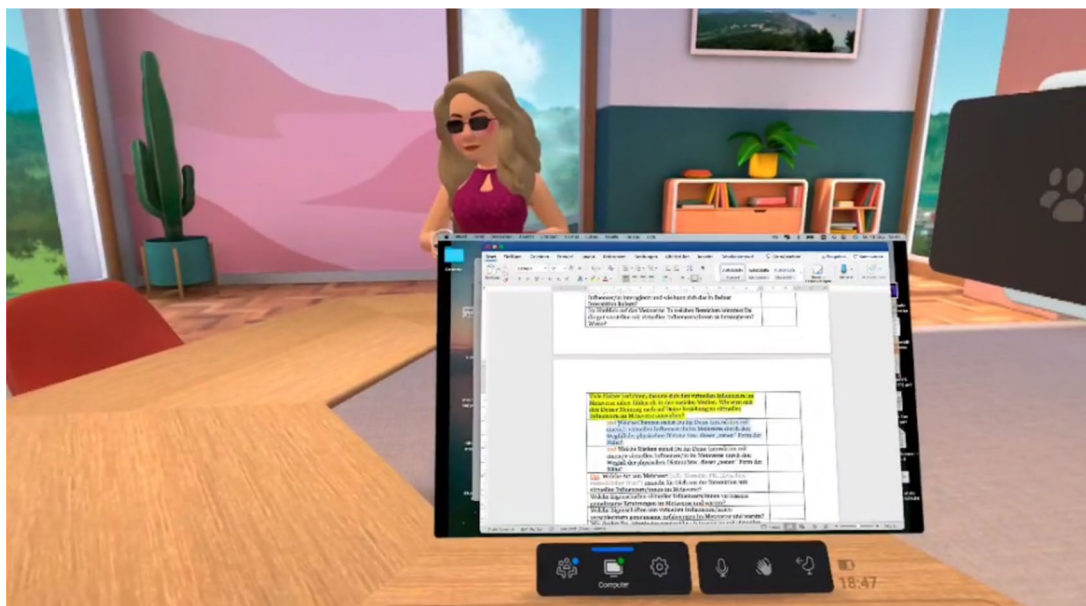
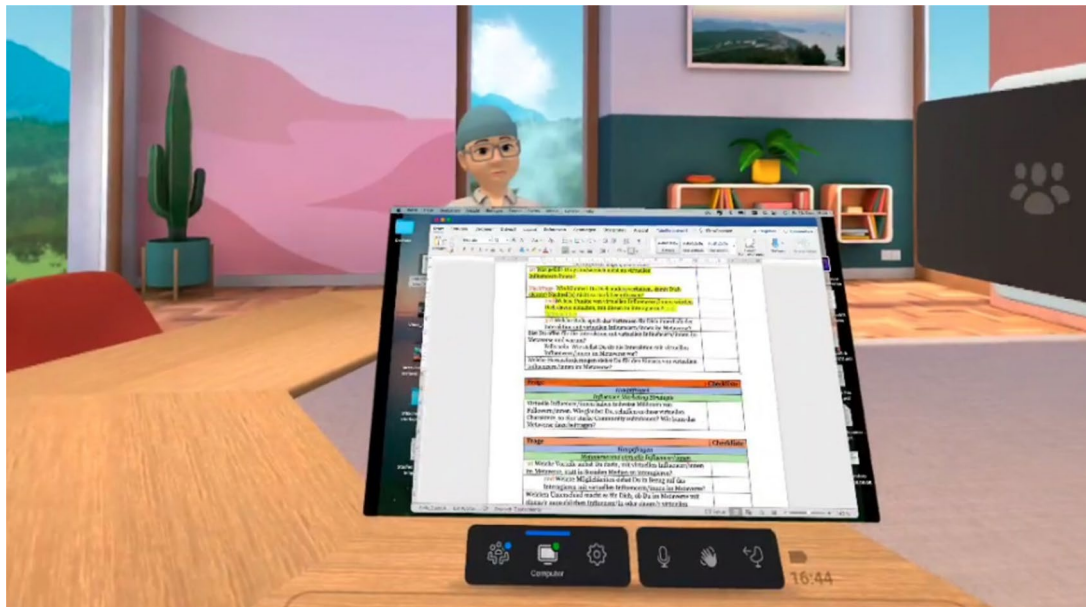
To improve the transferability of results—meaning to guarantee that the study's results can be translated to a different setting with different participants—we took three steps. First, we followed the concept of triangulating data through the various perspectives of our interviewees. Second, we constructed clear documentation of our interviews. Third, we provided a detailed description of our sample in Table 5 (Merriam and Grenier 2019).

To ensure dependability—the extent to which findings can be replicated (Merriam and Grenier 2019)—we conducted interviews until we noticed a high degree of concept/coding saturation. In this context, saturation refers to the likelihood that a further interview will not reveal new information. Saturation was reached by the 10th (PUs) and 13th (IUs) interview with 96% and 95% of the codes identified by those points, respectively. This is consistent with previous studies on the method (e.g., Francis et al. 2010; Guest et al. 2006; Hennink et al. 2017), existing studies in marketing (Gray et al. 2024; Songailiene et al. 2011), and research on the topic at hand (Tingelhoff et al. 2025).

Lastly, to mitigate confirmability—avoiding researcher biases (Lincoln and Guba 1985)—we independently executed tasks simultaneously and compared results (e.g., for data coding and interpretation). Further, all researchers were at least aware of their potential biases and influences, which we critically, openly, and proactively addressed during this study's planning and execution.

Appendix D

Pictures of the VR Interview Situations in Horizon Workrooms (Study 2)



To Ensure Anonymity, We Blurred the Interviewees' Names in the Screenshots.