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TELEPRESENCE VS. VIVIDNESS IN AUGMENTED REALITY SHOPPING: CONCEPTUALLY DISTINGUISHING TWO CONSTRUCTS AND THEIR DIFFERENTIAL EFFECTS ON CONSUMER TRUST

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ABSTRACT

Augmented Reality has redefined online retail as it enables consumers to visualize and contextualize products in their own physical environment before purchase. Telepresence and vividness are two theoretical constructs frequently used in AR shopping literature, often together and sometimes interchangeably. The conceptual paper argues that treating these two constructs as the same hides their different psychological processes and effects on consumer trust. Drawing on Steuer's (1992) media theory and Lombard and Ditton's (1997) work on presence and recent AR marketing research, the paper conceptually highlights how telepresence (the feeling of being there) is separate from vividness (the sensory richness of a mediated environment). We propose that vividness acts as a stimulus that shapes the level of telepresence, while also influencing consumer trust through separate cognitive and emotional processes. The paper presents five theoretical propositions that explain how each construct builds trust differently. It also identifies key boundary conditions, including product type, consumer technology readiness, and depth of AR interaction, and discusses their implications for AR retailing theory and practice. This paper contributes by addressing a long-standing theoretical confusion in AR consumer behaviour research and offering a simple framework for the future studies.

Keywords: *Augmented Reality, telepresence, vividness, consumer trust, online shopping, AR retailing.*

1. INTRODUCTION

Augmented reality (AR) in commerce continues to grow and has generated a key research question for marketing academics and retailers alike: How does AR provide additional value to the consumer experience as compared to previous forms of media? The answer to this question is not simply related to quality (i.e., improved screens) or speed of systems that deliver AR content. The way AR changes the online shopping experience is by allowing consumers to virtually place products within their real environment (i.e., in their living room, on their wrist, or on their face) (Hilken et al., 2017). This has created a smaller gap between viewing a product and owning it (i.e., likelihood of purchase), which is evidenced by acceptance and use of AR-enabled product features among leading global e-commerce retailers (e.g., Amazon, IKEA, Sephora, Warby Parker). These leading e-commerce retailers have incorporated AR product features in such a way that consumers are now able to "try before they buy" in an interactive manner than ever before (Yim et al., 2017).

The accumulation of evidence on what drives consumer behaviour in AR has been more rapid than ever but the lack of conceptual clarity surrounding the definition of telepresence and vividness (i.e., are they the same, or at least part of the overall immersive experience) is limiting our ability to advance theorizing. As such, researchers have used both concepts interchangeably (as antecedents of engagement, trust, and intent to purchase (Yim et al., 2017; Kim & Choo, 2021) without adequate consideration of whether these constructs represent different psychological processes or merely labels for the same construct. The conflating of the two constructs has important implications. If telepresence and vividness relate to different psychological processes (the authors argue that they do), the pathways to consumer trust will therefore differ, and consequently the strategies that retailers apply to enhance these experiences should also vary (Kim et al., 2021).

The motivation behind this study is to build on the premise that there needs to be clarity with respect to the theoretical vocabulary at the construct level before we can have meaningful empirical research in the discipline. The authors build on Steuer (1992) seminal media theory framework, which posited interactive multimedia as the antecedents of telepresence, and Lombard and Ditton (1997) who conceptualized presence in a sense as an experience, and offer an empirically based theoretical differentiation between the two constructs and the separate and shared pathways that lead to consumer trust in AR shopping.

The paper proceeds as follows. Section 2 situates the work within the broader literature on AR in retail. Section 3 develops the conceptual distinction between telepresence and vividness. Section 4 presents a theoretical model and five formal propositions. Section 5 discusses boundary conditions and moderating factors. Section 6 addresses theoretical and managerial implications, and Section 7 concludes with directions for future research.

2. AUGMENTED REALITY IN ONLINE RETAIL: A THEORETICAL BACKGROUND

2.1 Defining Augmented Reality and its Retailing Applications

Azuna (1997) defines augmented reality as a system that combines real and virtual content, works in real time, and operates in three dimensions. Unlike virtual reality, which fully replaces the real world with a simulated one, AR adds digital content to the users' physical environment. This allows users to stay connected to the real world while interacting with virtual elements. In retail, AR appears in product placement apps like IKEA place, virtual try-on tools like Sephora virtual artist and product customization features in mobile shopping app.

AR has become highly important in retail because it helps reduce the sensory limitations of online shopping. Consumers cannot physically inspect, touch or try products online, which often creates uncertainty and lower purchase confidence (Javornik, 2016). AR helps solve this problem by offering a more interactive and realistic shopping experience. Studies show that AR product presentations create higher levels of novelty, immersion, and enjoyment than traditional web presentations. These experiences also improve attitudes toward the platform and increase purchase intentions (Yim et al., 2017). Mishra et al., (2026) found that both usefulness and enjoyment influenced consumers' willingness to use virtual try-on technologies for apparel, highlighting the hedonic and utilitarian sides of AR shopping experiences.

Researchers have further explained AR in retail using theories from information systems, human-computer interaction, and consumer psychology. One of the most influential frameworks is Steuer's (1992) media theory, which explains telepresence through two media

features i.e. vividness and interactivity. Many AR studies use this framework to understand how design elements, such as image quality, 3D rendering, and real-time response, shape consumers' immersive experiences (Riar et al., 2022). However, as the next explains, researchers have not always sued these constructs clearly, which has limited the framework's full theoretical value.

2.2 Consumer Trust in the AR Shopping Context

Trust is central to much of the literature around digital retailing and e-commerce as it is viewed generally as the willingness of one party to be vulnerable to the actions of another party, based on an expectation that the other party will perform some specific action that is important to the first party, regardless of the first party's ability to monitor or control the second party (Kang et al., 2023). Trust can be defined in both a cognitive dimension (trust based on assessments of retailer competence, integrity and benevolence) and an affective dimension (a positive emotional orientation, either towards the retailer or the method used to shop) (Shi et al., 2025).

When developing consumer trust within AR mediated retail environments, challenges are layered as consumers must evaluate both the reliability of the AR delivery system (does it accurately depict the product being displayed?), the authenticity of the product presented (will this chair fit in my room?) and the reliability of the retailer (will what I actually receive match what I saw?). Early empirical research substantiates that 3D product presentation technology that creates a sense of presence enhances both product knowledge and brand attitude and are related to establishing trust (Billewar, 2025).

This implies that any technology that produces a strong response (or sense of presence) will likely be important in building trust with consumers. Though these points were discussed, the theoretical frameworks of how certain augmented reality (AR) constructs, particularly telepresence and vividness, will differently impact consumer trust remain underexplored. Many times, the literature either confuses these two constructs or treats them as linked antecedents in a causal chain rather than considering that they produce separate influences on trust outcomes through different psychological effects. This gap in research leads to the creation of the conceptual framework outlined in the later sections of this paper.

3. CONCEPTUALISING TELEPRESENCE AND VIVIDNESS: A THEORETICAL UNPACKING

3.1 Telepresence: The Phenomenon of Being There

Telepresence is a construct first developed by engineers and roboticists who used it to describe the experience of being physically situated in a place that is not physically located at the same location as the body but rather has been created using technology. The definition of telepresence has been created in communication research by Steuer (1992) as "the experience of being present within an environment through the use of communication medium" which makes it distinct from the more simply defined concept of physically being present within an environment. The basis for defining telepresence is its phenomenological characteristic; thus, telepresence does not refer to the medium itself but rather to the user's experience of existence. When using an augmented reality (AR) application that helps them place furniture in their homes, consumers who feel high levels of telepresence do not just see a sofa placed virtually in their living rooms but also feel as if that sofa exists spatially alongside them, at some level of consciousness that they do not reflect on (Billewar et al., 2022).

Walewijns et al., (2026) expanded on this idea and identified six different types of presence found in existing literature: social richness, realism, transportation, immersion, social actor as part of the environment, and medium as a social actor. The two types of presence most applicable in the context of augmenting shopping with AR are termed transportation and immersion. The experience of transportation is defined as the experience of being present at another location (physically) or of having a virtual object present inside a physical space. On the other hand, immersion describes the extent to which consumers are immersed by the sensory modalities of technology (the technology's ability to create a unique emotional experience). When applying these definitions of presence to the shopping experience via AR, it could be said that transportation is the more operationally accurate representation of what consumers experience; namely, that the product appears to have come to them and be placed properly within their actual physical environments.

Telepresence is an experience and not an experience feature of a system. It is a state of mind and will exist in varying degrees across individual consumer behaviours, shopping environments and AR shopping episodes. Thus, one consumer may experience a great deal of telepresence while one consumer experiences little telepresence using the exact same AR application. This subjectivity and variability are theoretically significant: they mean that telepresence cannot be guaranteed by any configuration of media attributes, though certain configurations make it more likely.

3.2 Vividness: A property of Medium, Not of Experience

According to Steuer (1992), vividness is essentially an attribute of the medium, not the user's experienced state. Vividness was defined by Steuer as the capability of technology to create "a sensorially rich mediated environment". Steuer further delineated vividness into two subcategories: breadth and depth. "Breadth" relates to the variety of sensory modalities that can be provided at once, for example visual, auditory, haptic, and olfactory. "Depth" refers to the quality, resolution, or fidelity of each sensory channel e.g. the pixel density of a visual display, the spatial accuracy of audio reproduction, and the granularity of tactile feedback. The example of an AR app displaying a photorealistic 3D product model (e.g., characterized by realistic lighting, shadows and surface textures) is representative of a high-vividness medium in terms of the depth dimension.

Yim et al. (2017) operationalized vividness to the extent to which AR technology provides clear, vivid, and high-quality representations of products; their research indicates that higher vividness, combined with higher interactivity, produces elevated levels of immersive experience for consumers, which subsequently has a favourable effect on how useful and enjoyable they perceive the medium. It is also worth noting that their use of the Steuer framework to define vividness involved considering it as a factor in the prediction of immersion, which is related but different from telepresence; the authors' study did not examine how vividness independently relates to trust or evaluations.

The conceptual differentiation of vividness comes from its objectively defined origins; vividness can be defined and quantified at the technology system level, without regard for whether someone has an individual response (Steinmann et al., 2014). Objectively, a product rendered at 4K resolution and real-time shadow mapping has a greater degree of vividness than a static image rendered at low resolution (Prince, 2011). This objectivity differentiates vividness from telepresence, which is inherently subjective and dependent on individual perspectives on the experience of using virtual/augmented reality technology and the virtual worlds that support is supported by that technology (Kind, 2017; Ball, 2022). Vividness is capable of design, whereas telepresence can only be facilitated.

3.3 The Construct Boundary: Where Conflation Occurs

It is likely that the confusion regarding telepresence and vividness in the AR research literature is the result of two factors: first, there is an empirical correlation between the two constructs (higher vividness media systems generally lead to higher telepresence responses), which has created a statistical relationship that can be mistakenly seen as an indicator of conceptual equivalency; and second, both words are sometimes used in a general fashion to refer to having similar experiential qualities associated with AR; i.e., people referring to their AR experience feeling real, without distinguishing between the technological capability of vividness or the psychological indicator of telepresence (Orth et al., 2019).

This is a theoretical problem really, and here are two reasons why; it clouds our ability to see the hierarchy of causation with vividness potentially being an antecedent of telepresence rather than simply another word for it (Shen et al., 2020). The media could be very vivid, and yet, not create high levels of telepresence, depending on the presence or absence of conditions: (a) user involvement, (b) level of task, and (c) other distractions in the environment. On the other end of the spectrum; even if a media has very low levels of vividness, it still can create high levels of telepresence when individuals are cognitively involved with the media (Rodríguez & Martínez, 2014). If vividness and telepresence activate different psychological processes (as I will discuss in the next section), then the routes to trust through vividness and telepresence are going to be different from one another (Kim et al., 2021). This means that our understanding of how AR will provide consumer value through the shopping experience will be better characterized when we develop two separate models of trust for both vividness and telepresence respectively, and we will be able to create an even better theoretical map going forward.

4. A THEORETICAL MODEL: DIFFERENTIAL PATHWAYS TO CONSUMER TRUST

4.1 The Vividness Pathway: Cognitive Elaboration and Perceived Diagonsticity

Consumer trust is impacted by vividness via a cognitive mediation relationship based upon perceived diagnosticity (i.e., the extent to which product information is seen to have practical and complete value when making confident purchase decisions). High-vividness augmented reality (AR) presentations provide a consumer with highly detailed, spatially accurate representations of a product (Cowan & Ketron, 2019). This decreases information asymmetry.

For example, when evaluating furniture with a high-vividness AR application, a consumer will have the ability to accurately gauge the color of the product based on the ambient light of the room, initially determine how well-proportioned the item is within their home, and examine the details of its texture. The preceding uses of AR are examples of product attribute information that traditional product photos do not typically facilitate.

The increased quality of information regarding a product creates cognitive trust based on an individual's belief that he/she has sufficient, credible and reliable information with which to make an appropriate decision. (Racherla et al.,2012) theoretical mechanism notes that technologies capable of delivering virtual experiences result in richer representations stored within a consumer's memory (Väljamäe & Sell, 2014). Richer representations in memory lead to lower perception of product risk and heightened confidence in purchasing the product. Since trust derived from vividness is based on cognition - thus relying on the consumer to verify product attributes rather than being immersed in an effective manner - it is suggested that trust will be more consistent across multiple interactions, more transferable from product

experience to retailer and more able to withstand dissonance experienced post-purchase (Toder et al., 2025).

This reasoning suggests the first formal proposition:

Proposition 1: Vividness in AR product presentations positively influences consumer cognitive trust through enhanced perceived product diagnosticity, independently of the level of telepresence induced.

4.2 The Telepresence Pathway: Affective Trust and Psychological Ownership

Telepresence can be characterized as a phenomenological experience of spatial and perceptual co-existence with a virtual product and therefore creates a qualitatively different type of mechanism to build trust; this is known as affective trust, which is based on feelings of warmth, comfort and reassurance as a result of having had an experience that provided authentic interaction with a virtual product (Peng & Ke, 2015). In this case, if the consumer has a high degree of telepresence while they are virtually trying on sunglasses using an AR application, then the perception of reality is created enough to elicit an emotional response or feeling of "this is really mine," which then serves as a positive affective signal to the consumer that will reduce their uncertainty through sense of feeling versus cognition.

This affective pathway of trust building through telepresence is also connected to emerging literature regarding psychological ownership in the AR environment. Psychological ownership is defined as the feeling that a particular object or product is "mine" and that this sense of possessing can be experienced through virtual interactions with products and has been associated with an increase in willingness-to-pay and/or purchase intention. When consumers can experience high telepresence while interacting with products through AR, the telepresence provides the means to create a feeling of possession without requiring physical contact (Srivastava & Mishra, 2026).

The consumer who experiences strong telepresence has, phenomenologically speaking, already inhabited the product and this experiential pre-possession generates the affective trust that sustains purchase confidence (Stough & Graham, 2024).

This reasoning supports the second formal proposition:

Proposition 2: Telepresence in AR shopping experiences positively influences consumer affective trust through the mediation of psychological ownership feelings, independently of the level of vividness of the AR medium.

4.3 The Interplay Between Vividness and Telepresence in Trust Formation

It is important to include the potential for interaction of the pathways created for each construct previously. Steuer (1992) created a framework where vividness precedes telepresence. This means that higher levels of vividness will produce greater levels of telepresence on the basis of other factors being equal. In the context of shopping through AR, vividness will activate telepresence, as well as the two constructs may form an interaction to create a combined level of trust that will exceed their independent contributions (Prince, 2011)

Specifically, the cognitive trust generated through vividness may serve as a foundation upon which affective trust, once generated through telepresence, is validated and reinforced. An individual that trusts the accuracy of an AR representation of the product (cognitive trust from vividness) and has an experience of being spatially with the product (affective trust from telepresence) will create one type of trust that is greater than either type of trust alone,

which is rooted in both the rational and affective nature of their trusting experiences (Matsui & Yamada, 2019). Trust that is generated in such a manner will be more likely to last and predict actual purchase behaviour than either form of trust separately will.

Proposition 3: The combination of high vividness and high telepresence in AR shopping produces a synergistic trust response that exceeds the additive effects of each construct independently, particularly for high-involvement product categories.

4.4 The Asymmetry of Failure: When Vividness and Telepresence Diverge

Vividness and telepresence can sometimes fail to align (high vividness not ensuring a user feels present in the AR environment, or vice versa). This asymmetry has practical consequences as it indicates that designing AR retail experiences cannot solely be based on optimization (Ouverson & Gilbert, 2021). A designer that optimises for rendering quality (vividness) may produce an experience that leaves a consumer with great cognitive impressions and poor emotional engagement - high product diagnosticity and low affective trust. Alternatively, an experience that has high levels of telepresence, but low levels of vividness will create emotional engagement at the expense of having the information basis needed to make an informed purchase (Algharabat, 2018).

This divergence scenario implies a critically problematic failure mode for AR Retail - the "Uncanny Valley of Trust" - a zone where the AR experience is sufficiently vivid to raise expectations but is insufficiently immersive to provide the emotional assurance necessary to support those expectations. In this zone, consumers may find themselves more uncertain about their purchase decision after using the AR feature due to the high quality of rendered products raising their expectations for products they inspect physically, while they do not have the telepresence to create the emotional reassurance necessary to meet those expectations (Mollen, & Wilson, 2010).

Proposition 4: When AR vividness is high but telepresence is low, consumer trust undergoes a dampening effect relative to baseline non-AR conditions, as raised diagnostic expectations are unmet by affective product experience.

5. BOUNDARY CONDITIONS AND MODERATING FACTORS

5.1 Product Type as Moderator

Different types of products will likely experience different levels of influence from telepresence and vividness on trust from the consumer perspective. This distinction comes from a well-known delineation of search versus experience goods. Search goods can be assessed in quality prior to purchase through the evaluation of attributable quality; whereas experience goods can only be assessed through direct experience with that good (Huang et al., 2009). Therefore, for search goods, we hypothesize that vividness will be a higher driver of trust. Conversely, for experience goods, we hypothesize that telepresence will play a more significant role in developing trust than vividness.

For instance, with a search for goods like furniture or spectacles, the consumer primarily needs to know the spatial and dimensional information of the good (accurate representation in the user's environment through high-vividness AR) prior to making their purchase decision. Thus, if a consumer has high-vividness AR of the good priced at a specific location, it will build their cognitive trust (Javornik, 2016).

Conversely, experience goods, such as fabrics, fragrances or food items, cannot be assessed through high-vividness AR due to the subjective nature of the quality attributes. Consequently, the ability of vividness to create a sense of closeness or interaction with that

good will not create the same amount of trust for the consumer due to the inherent limitations of the product quality attributes (Kim et al., 2023). In these examples of experience goods, telepresence will create an alternate means (i.e., imaginary play) for the consumer to develop trust with the experience good.

5.2 Consumer Technology Readiness

Technology readiness, which is defined as your ability to adapt to new product technologies to achieve your goals at home and work, serves as a theoretically-sound moderator in the relationship between telepresence and trust. Consumers who have an optimistic view of technology and who are innovative in their use of it will have more success in establishing a telepresence with the AR user interfaces (Sharma, 2025). They also will be more likely to view the AR experience as a reliable indication of the retailer's level of sophistication and their commitment to ensuring a positive consumer experience, thus further developing their cognitive trust.

Conversely, consumers who are high in technology discomfort or insecurity may view the same high-vividness AR environment with a constant awareness of the mediated and artificial nature of it (i.e., a form of 'metacognitive intrusion'), which will inhibit the development of telepresence (Alam et al., 2024). For high-technology discomfort or insecure consumers, a technically impeccable AR system will create little to no telepresence and thus, no affective trust, implying that the pathway to telepresence-trust is moderated by consumer technology orientation in a significant way.

Proposition 5: Consumer technology readiness positively moderates the relationship between AR-induced telepresence and affective trust, such that the telepresence-trust pathway is stronger for technology-ready consumers and weaker for technology-apprehensive consumers.

5.3 Interacting Depth as Moderating Condition

The third boundary condition is that the depth of interaction made possible by the AR system is also important. Not all retail applications using AR are similarly interactive; some only provide a static 3D model superimposed onto the scene (with no user manipulation allowed), while others allow real-time customization of products, rotation, zooming, and repositioning in space (Du et al., 2020). In their research, Yim et al. (2017) found that interactivity as well as vividness was a primary driver of immersion in AR environments, and consequently, an important determinant of telepresence. A high degree of interactivity allows consumers to have more agency in the mediated environment by providing them with the opportunity to interact with the virtual product (e.g. manipulating it) and have it available for inspection in much the same way as they would if they were physically present in the store. As such, the agentic nature of AR interactions better approximates how consumers behave when they are doing in-store shopping, creating a stronger sense of reality associated with the product (Diaz et al., 2017). On the other hand, vividness provides trust-building effects irrespective of the level of interactivity available, as even a static, high-resolution product overlay can generate perceptions of diagnosticity. Given this, interaction depth serves as a more robust moderator of the telepresence pathway than does interaction depth of the vividness pathway, suggesting that these two constructs should be considered independent of one another.

6. THEORETICAL AND MANAGERIAL IMPLICATIONS

6.1 Theoretical Implications

This article provides some significant theoretical advances to the existing literature on AR consumer behaviour. Most important, this study creates an appropriate conceptual separation between the concepts of telepresence (the feeling of being present in a virtual environment) and vividness (the degree to which an environment feels real). By extending Steuer's foundational framework, this article establishes the theoretical basis for distinguishing telepresence from vividness and developing a clear conceptualization of the two concepts viz telepresence is an aspect of the user's experience of an environment and vividness is an aspect of the system delivering the environment.

Secondly, this article also advances our current understanding of trust in the context of AR retailing by providing a model of dual and reciprocal pathways to trust in AR retail shopping. Prior research on trust models in AR retailing has emphasized its unidirectional nature and its reliance upon a single set of undifferentiated AR quality attributes as the primary determinants of trust (Javornik, 2016). The new framework's combination of cognitive (based on vividness as mediated by diagnosticity) and affective (based on telepresence as mediated by psychological ownership) pathways to trust represents a substantially more nuanced understanding of how AR shopping generates consumer trust.

The concept of the "uncanny valley of trust," introduced in this paper, is a new theoretical insight and has potential implications beyond AR retail. This idea implies that technologies that elevate the informational expectations of users without providing those users with the required experiential conditions are likely to undermine users' trust in a given technology's capabilities (Tran, 2026). This counter-intuitive prediction warrants empirical testing across various types of digital commerce.

6.2 Managerial Implications

For AR technology designers and retail managers, the framework provides key takeaways. Most important, it suggests that the enhancement of the AR shopping experience will be dependent on attending to both the vividness and telepresence aspects of a shopping experience simultaneously, using different design approaches for each. The vividness aspect consists of image quality (rendering resolution, texture), how accurately a scaled representation of an object is represented in three-dimensional virtual space, and how realistic the virtual experience is through simulated lighting. These aspects can be addressed through technical investments and are relatively clear in terms of how they can be described and tested. However, telepresence is a more elusive goal and one which can depend on how the interface allows for the manipulation of objects, the responsiveness of the user interface design, and how the AR experience reinforces feelings of user agency and presence (Mollen, & Wilson, 2010).

Also, the product category affects how retailers deploy an AR strategy. Retailers in the experience-good categories, which are typically fashion, cosmetics, and home textiles, should focus on providing quality interaction design features to create a sense of telepresence. This is because the product core or attributes do not translate well into a digitally represented experience. Conversely, retailers in search-good categories such as furniture, eyewear, and consumer electronics will have higher performance on their AR technology investments with respect to improving the vividness. This is because search-good products typically have an information deficiency and thereby may also have an experiential deficiency.

Third, the moderator of consumer technology preparedness indicates that there are potential trust benefits from personalizing AR experiences. Platforms that can assess a user's technology readiness level, through behaviour signals such as frequency of use, exploration of features, or preferred type of interaction (explicitly), would be able to tailor the complexity and length of AR interfaces according to the individual user's level of technology readiness. In this way, high technology readiness users could experience optimal conditions for telepresence to be formed with AR interfaces; however, low technology readiness users would be given less complex and less vivid experiences with AR products.

7. DIRECTIONS FOR FUTURE RESEARCH

This theoretical framework outlined in this article suggests the need for an extensive amount of empirical research to develop this area of study further. The priority is to experimentally test the five propositions outlined above in AR contexts, using carefully manipulated AR contexts that isolate vividness and telepresence as independent variables and measure both cognitive and affective trust as separate dependent variables. All studies should use validated instruments for both telepresence and vividness as well as standardized multidimensional trust constructs as dependent measures.

The third direction for future research aligns with the general conclusions of the previous two research directions. First, future research regarding trust formation will be needed to examine the longitudinal dynamics of trust through AR (Wieland et al., 2024). Although the current model proposes the use of cognitive trust formed by vividness of early encounters with AR to create conditions for telepresence and affective trust, trust is inherently a relational construct that is established from repeated interactions. This suggests that future research should focus on whether cognitive trust created from vivid AR experiences will lay the foundation for subsequent instances of telepresence and affective trust or whether the novelty of the AR experience will diminish over time due to increased familiarity with AR technology, thus attenuating the telepresence pathway.

Finally, the conceptual framework that has been presented in this paper also identified cultural and demographically based boundary conditions regarding the effects of AR technology on telepresence and affective trust. Future research will be needed to investigate AR technology as a moderator variable in the context of varying degrees of technology readiness in individuals, as well as how culture and demographic groupings will impact the telepresence-affective trust relationship. In particular, future research is needed to examine the telepresence-affective trust relationship across various cultural settings, including comparing high context cultures where the relational as well as experiential dimensions of a transaction will create stronger ties to telepresence and affective trust versus low context cultures where the cognitive trust established from the quality of information may hold greater influence.

8. CONCLUSION

The two constructs of telepresence and vividness are essential for researchers studying AR consumer behaviour. The two constructs should not be confusing as they are different and have different impact on generating trust from consumers (Steuer, 1992; Javornik, 2016). Vividness generates cognitive trust, whereas telepresence generates affective trust. Both constructs will generate a synergistic trust effect; however, they also differ in ways that can negatively impact consumers' trust by increasing consumers' expectations of how much they will experience telepresence based on the amount of vividness that they are shown (Yim et al., 2017; Hilken et al., 2017).

This research provides a conceptual framework and suggests empirical testing of these concepts is necessary. The act of proposing different definitions of vividness and telepresence is itself a valuable contribution as it provides a basis for clearer empirical evidence and for future testing. This paper has clarified the construct of telepresence versus vividness, therefore, creating an opportunity for subsequent research to accumulate empirical evidence about AR consumer behaviour across the three constructs of technology-mediated interaction and the consumer-product relationship.

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