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Navigating “AI-Powered Immersiveness” in Healthcare Delivery: A Case of Indian Doctors

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Navigating "AI-Powered Immersiveness" in Healthcare Delivery: A Case of Indian Doctors

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Abstract:

AI-powered immersive technologies integrate into physical and digital workspaces, disrupting traditional professional roles. We address two research questions. First, what factors specific to immersive technology usage impact healthcare professionals' perceptions, leading to its adoption? Second, how does this adoption impact the professional identity of healthcare professionals? Through a qualitative study of 84 doctors, our study identifies key factors related to ICT, individuals, and organizations associated with AI-powered immersive technologies that influence adoption. ICT factors include enhanced surgical planning, real-time data integration, training, and ethical and privacy concerns. Individual factors include the perception of self and social presence within virtual environments. Organizational factors comprise how institutions design collaborative ecosystems, define accountability structures, and promote skill expansion. Based on the adoption of these technologies, we highlight four identities of adopters: Risk-Averse Adopters, Pragmatic Adopters, Informed Enthusiasts, and Technology Champions. Our study contributes to Immersive technology adoption literature by highlighting how different factors impact perceptions that drive doctors' adoption of these technologies. We also contribute to the literature on IS and Professional identity by highlighting that these technologies redefine professional identities. Our study offers practical insights for designing targeted training programs, inclusive adoption strategies, accountability frameworks, and data governance policies.

Keywords: AI-powered Immersive Technology, Identity, Healthcare, Adoption, Grounded Theory.

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1 Introduction

AI-powered immersive technology refers to the convergence of Artificial Intelligence's decision-making expertise with immersive technology's experiential value[1] (Fadhel et al., 2024; Soliman et al., 2024). AI can analyze and derive actionable insights from the immense volume of data that immersive technologies generate to improve the immersive experience (Huynh-The et al., 2023; Soliman et al., 2024). AI and Immersive technology enable the creation of dynamic, responsive, and personalized user experiences (Grech et al., 2023; Ryskeldiev et al., 2021). Woven together in the organizational context, they form a novel socio-technical ensemble by integrating additional sensory dimensions (French et al., 2020; Massa et al., 2023; Sarker et al., 2019). They have the transformative potential to revolutionize human interaction, address societal challenges, and drive advancements in digital ecosystems (Albahri et al., 2023; Asatiani et al., 2021; Berente et al., 2021; Dwivedi et al., 2021, 2022). Given the capabilities of these systems, they are transforming notions of knowledge work and their professional roles by redefining the nature of expertise, decision-making, and collaboration (Dell'Acqua et al., 2023; Dong et al., 2024; Eikebrokk & Olsen, 2020; Pettersen, 2019; Woodruff et al., 2024). AI-powered immersive technology is gradually altering knowledge workers' established knowledge domination and decision-making autonomy (Jussupow et al., 2018; Strich et al., 2021). The fusion of AI and immersive technologies is also revolutionizing the work of healthcare professionals (Fu et al., 2021; Pillai & Mathew, 2019; Renu, 2021). Healthcare professionals have specialized expertise and the ability to address complex problems in high-pressure environments that directly influence patient care. They undergo prolonged education, intensive training, and the development of a distinct professional identity (Jussupow et al., 2018). The advent of AI-powered systems has progressively intervened in doctors' core activities. They alter their existing tasks and roles in the workplace (Alahmad & Robert, 2020; Bughin et al., 2018; Mir et al., 2022; Von Krogh, 2018). These technologies compel healthcare professionals to confront foundational questions about their roles and identities within a rapidly evolving socio-technical environment. They also reshape the self-perception of these knowledge workers (Chreim et al., 2007; Craig et al., 2019; Jussupow et al., 2018; Reay et al., 2017; Strich et al., 2021). They renegotiate their roles amidst technological advancements and try to answer the questions "Who am I as a member of this profession?" and "What is my role within it?". This presents unique challenges that transcend traditional technological transformations (Dwivedi et al., 2022).

We need an understanding of the specific factors that influence healthcare professionals' perception of AI-powered immersive technologies, which is critical for ensuring effective integration into clinical practice. Also, existing studies do not comprehensively capture the nuanced interplay between AI-powered immersive technologies and the evolving professional identities of knowledge workers, particularly in high-stakes environments such as healthcare (Iqbal et al., 2024; Qu et al., 2022; Tang et al., 2022). Hence, we examine the factors influencing the adoption of AI-powered immersive technologies and explore their implications on the professional identities of doctors. This study addresses two research questions:

1. **What factors specific to immersive technology impact healthcare professionals' perceptions, leading to immersive technology adoption? And**
2. **How does the adoption of AI-powered immersive technology impact the professional identity of healthcare professionals?**

We draw on Identity Theory to examine how immersive AI technologies compel professionals to cognitively and symbolically renegotiate their identities in response to altered task structures and redistributed decision-making authority. Identity Theory is particularly suited for this analysis, as it explicates how individuals maintain coherence between their self-concept and enacted behaviors when facing role disruptions (Burke, 2006; Ibarra, 2004, 2005; Nelson & Irwin, 2014). In highly institutionalized fields like healthcare, where professional identity is deeply entrenched in clinical expertise and moral responsibility, immersive technologies generate identity threats and trigger reconstruction processes (Y. Chen & Reay, 2021; Chreim et al., 2007). This approach moves beyond rational models of technology use, such as TAM, UTAUT, by attending to the socio-cognitive and emotional dimensions of technology assimilation in digitally reconfigured work contexts (Faraj et al., 2018; Jain & Srinivasan, 2022; Orlikowski & Scott, 2023; Sarker et al., 2019).

[1] https://rockpaperreality.com/insights/extended-reality/how-ai-is-making-immersive-experiences-more-powerful/

To answer our research questions, we employed a qualitative methodology rooted in grounded theory (Locke, 2000). We interacted with 84 doctors from all over India. The study utilizes eight focus group discussions with 7-10 participants and 19 semi-structured interviews to explore the adoption of immersive technologies by doctors in India. The data collection was done from December 2022 to March 2024. We recruited participants during a residential training program led by one of the authors, who is an experienced medical professional. These participants from across India represented various domains where these technologies have demonstrated potential or active adoption. The findings of our study highlight factors specific to AI-powered immersive technology that impact adoption by healthcare professionals. ICT Factors include enhanced surgical planning, real-time data integration, training, and ethical and privacy concerns. Individual Factors include the perception of self and social presence within virtual environments. Organizational Factors comprise how institutions design collaborative ecosystems, define accountability structures, and promote skill expansion. Our findings further highlight that healthcare professionals do not show high resistance to technology. However, adoption occurs at varying degrees along a continuum. Our study identified four different identities of doctors based on this adoption: Risk-Averse Adopters, Pragmatic Adopters, Informed Enthusiasts, and Technology Champions spread across the adoption continuum. These identities are differentiated based on their perception of clinical applicability, familiarity with AI technology, willingness to take risks, and desire to retain clinical autonomy to adopt these technologies.

Our study contributes to the literature on the adoption of AI-powered immersive technologies by demonstrating how different factors drive doctors' adoption of these technologies (Dong et al., 2024; Rubio-Tamayo et al., 2017). We also contribute to the literature on IS and Professional identity by highlighting that these technologies redefine professional identities, shifting doctors toward hybrid roles and blending traditional expertise with technical fluency (Alahmad & Robert, 2020; Hollender et al., 2010; Mir et al., 2022; Perez et al., 2022). Our study highlights that these technologies are already used in India for surgical planning, diagnostics, and training, offering evidence for their potential. We provide practical implications for organizations to strategically invest in areas like rural hospitals and training academies to maximize impact. Clear accountability and legal frameworks are also needed to address liability and data privacy concerns. We provide implications for technology developers by highlighting the need for customizable avatars, emotionally intelligent AI agents, and realistic interaction features to foster trust. The study highlights the importance of tailoring adoption strategies to diverse identity groups. We provide implications for organizations to empower early adopters to lead peer mentorship and integrate identity-sensitive frameworks to support inclusive, strategic, and psychologically safe adoption across the workforce. These could help address trust and ethical concerns, identify necessary skill development, enhance patient outcomes, mitigate resistance by aligning with practical realities, adapt to the evolving socio-technical context, inform policy frameworks, preserve the human element in care, and foster interdisciplinary collaboration (Albahri et al., 2023; M. Kumar et al., 2022; Reis et al., 2020).

2 Background

We explored the factors shaping users' perceptions and the subsequent technology adoption. These can be categorized under three umbrellas: factors related to ICT, individual factors, and organizational factors.

2.1 Factors Related to ICT

The benefits or utility of an ICT play a critical role in shaping users' perceptions and overall attitudes toward the technology. Numerous theoretical frameworks emphasize this relationship. TAM suggests that users are more inclined to adopt ICT if they perceive it as enhancing their job performance, emphasizing the direct influence of the perception of usefulness on behavioural intentions to engage with the technology (Davis, 1989). Similarly, the Unified Theory of Acceptance and Use of Technology (UTAUT) synthesizes elements from various models to explain how ICT usefulness drives user perceptions that impact their intentions and behaviors (Venkatesh et al., 2003). The ease of using an ICT refers to the degree to which a user believes that using a particular system would be free from effort. Based on TAM, a system that is easy to use is more likely to be perceived positively and readily accepted by users. (Davis, 1989) emphasized that ease of use directly affects the perception of the usefulness of ICT and, consequently, the intention to use the system. Subsequent studies have reinforced that ease of use impacts the perception depending on the task type (Baki et al., 2018; Gefen & Straub, 2000). For intrinsic tasks closely tied to ICT interfaces (e.g., product inquiries), it significantly influences adoption by emphasizing intuitive design and usability. Conversely, extrinsic tasks serving broader objectives (e.g., online purchases) diminish their direct effect as outcomes take precedence. Developers should prioritize usability for intrinsic tasks to optimize engagement. The design attributes of an ICT system, including user interface design, response time, system reliability, and performance, play a critical role in creating user perception (Bagayogo et al., 2014). Poor design can lead to user frustration and resistance. Studies have extended TAM to include factors such as output quality and result demonstrability, which are directly related to design and technical features influencing the perception of the ICT (Venkatesh et al., 2003). User-friendly interfaces encourage intuitive interaction by reducing cognitive effort and fostering positive perceptions (Carter et al., 2020; Williams & Gupta, 2023). ICTs with consistent performance and demonstrated reliability instil user trust and satisfaction (Khan et al., 2023). This also instils positive perceptions and minimizes frustration and hesitation (Beaudry & Pinsonneault, 2005; Del Giudice et al., 2021).

Compatibility with users' existing work processes, tasks, and practices is a key determinant in shaping user perceptions and acceptance of ICTs (Rogers et al., 2008). The ability of different systems to work together is crucial for the seamless integration of new technologies into existing infrastructures. Alignment with existing work practices, preferred work style, prior experiences, and personal values leads to a positive perception, and users find the ICTs more useful (Ho et al., 2020; Karahanna et al., 1999; Venkatesh et al., 2003). Task–technology compatibility also influences user acceptance and a smoother transition to automation (Beer & Mulder, 2020). When automation systems are designed to align with users' task requirements and expectations, users exhibit higher trust and reliance on technology, leading to improved satisfaction and perception (De Visser & Parasuraman, 2011). Multiple studies have also highlighted that incongruity could be a significant barrier and lead to negative perceptions (Leso & Cortimiglia, 2022). This further reduces the acceptance of new ICT (Elshan et al., 2022)

2.2 Individual Factors

Socio-demographic factors offer a nuanced lens for examining the dynamics of technology adoption, particularly in understanding variations in user perceptions and behaviors (Niehaves & Plattfaut, 2014; Porter & Donthu, 2006; Venkatesh et al., 2003). The Unified Theory of Acceptance and Use of Technology (UTAUT2) and DoI provide a comprehensive framework to explore technology adoption within broader societal contexts (Chang, 2012; Robles-Gómez et al., 2021; Tamilmani et al., 2021). Age, gender, and voluntariness of use have been identified as key moderating variables influencing perceptions of ICT and its practical implementation in professional environments (Venkatesh et al., 2003a). Individual differences, such as education and employment status, are important in shaping perceptions of ICT (Elie-Dit-Cosaque et al., 2011; Taylor & Todd, 1995). The impact of these socio-demographic characteristics on perceived behavioral control within organizational settings has been studied across diverse industries, including healthcare, entertainment, telecommunications, banking, and public administration (Fehrenbacher & Choo, 2018; B. Kim & Park, 2018; Kong et al., 2019).

Younger users generally exhibit more favourable attitudes toward adopting ICT, attributed to their greater familiarity with and ease in engaging with digital technologies (Niehaves & Plattfaut, 2014). Conversely, older professionals often view ICT as more complex or less accessible due to limited prior exposure and declining cognitive abilities, which can dampen their willingness to adopt (Parlapani et al., 2020; Vassilakopoulou & Hustad, 2023; Zhang et al., 2024). Age-related concerns about privacy, security, and fear of failure significantly deter adoption. Older adults often prioritize technologies that provide immediate practical benefits (Heponiemi et al., 2022; Song et al., 2021). Social influence is critical in encouraging ICT adoption among older adults, particularly when family members or peers endorse the technology (Farivar et al., 2020; Martín-García et al., 2022).

Gender differences also play a significant role, with men frequently demonstrating higher adoption rates in certain professional domains (Merhi et al., 2021; Venkatesh et al., 2000). This trend is often linked to structural disparities in resource access and societal norms that emphasize male engagement in technical expertise. The gendered disparity manifests in differentiated decision-making processes (men prioritize instrumentality and women adopt a more relational approach), attitudes (Men develop habitual technology while women continuously reassess their ICT usage), and external influences (men exhibit an independent decision-making style while women are encouraged by peers) (Bajaj et al., 2023; Lim et al., 2021; Van Elburg et al., 2022). However, some studies challenge the universality of such findings, reporting no significant gender effect on technology adoption within the eGovernment sector (Gupta et al., 2008).

Prior experiences and familiarity with ICT are critical in shaping perceptions of ICT (Taylor & Todd, 1995). Experienced users often exhibit stronger perceptions of control and competence, which reduces cognitive effort and facilitates smoother technology acceptance (T. T. Kim et al., 2018; Martínez-Torres et al., 2015; Ramayah et al., 2005; Su et al., 2009). This familiarity reduces uncertainty and builds trust in the technology, facilitating a smoother adoption process. In contrast, users with limited experience tend to rely more heavily on the perceived ease of use to navigate the adoption process (Gnewuch et al., 2022). Prior usage experience also impacts the perception of successive ICT products (L. Chen & Santhanam, 2011; Varma & Marler, 2013).

2.3 Organisational Factors

Organizational factors, including leadership support, communication, technical readiness, and collaborative environments, are integral to facilitating positive perceptions about ICT (Saghafian et al., 2021). Studies highlight the need for alignment between organizational culture, strategy, and resource management to reduce negative perceptions that could lead to resistance to adoption (A. Kumar et al., 2024; Saghafian et al., 2021). Internal support from upper management is also a pivotal factor in facilitating adoption (Choi et al., 2020; Mohtaramzadeh et al., 2018; Ukobitz, 2021; Vos & Boonstra, 2022). Organizational structure also impacts perceptions, leading to ICT adoption (Aremu et al., 2021). Influential figures, such as change agents and mentors, can play a significant role by creating normative pressure and shaping the perceptions of other users (De Benedictis et al., 2020; Dolce et al., 2022; Keyworth et al., 2018; Spagnoli et al., 2020). Effective communication about the rationale for change and the provisions of training are enablers of positive perception (Leoni & Cristofaro, 2022; Maali et al., 2022). A supportive work environment, the involvement of skilled personnel, and fostering cross-functional collaboration led to positive perceptions about ICT during adoption (M. Kumar et al., 2022).

Practical user training is crucial in shaping perceptions of ICT, particularly concerning time efficiency and ease of use (Bedard et al., 2003; Dolores Gallego et al., 2015). Training programs that are well-structured and user-centric can significantly reduce computer anxiety and increase self-efficacy among users (Boothby et al., 2010; Chou, 2001; Milbrath & Kinzie, 2000). This, in turn, leads to more favourable perceptions of ICT and higher adoption rates. Research highlights that training interventions tailored to individual needs and learning styles are more effective in promoting positive perceptions and encouraging the adoption of new technologies.

Involving employees in designing and implementing ICT systems nurtures a sense of ownership and ensures that the technology aligns with their needs. Participative socio-technical design highlights the importance of user involvement in system development to achieve both technical efficiency and high-quality work environments. Digital platform firms manage boundaries to attain platform leadership, underscoring the role of stakeholder participation in the design process (Leong et al., 2015).

Adoption costs, including capital adjustment, initial investments, legal costs, maintenance, and training expenses, influence user perceptions (Bessen, 2002; Legris et al., 2003). IS studies have highlighted that substantial financial investments in system development and user training influence user perceptions. This potentially leads to resistance if the perceived benefits do not justify the expenses (Leso & Cortimiglia, 2022). The complexity of training requirements and the frequency of updates further exacerbate these perceptions. Studies in healthcare IT adoption underline that even in sectors with high potential returns, the high costs of adoption and training can deter implementation. Users are also hesitant towards ICTs that pose high legal costs or require significant compliance efforts (Bolatan et al., 2022; Skare & Soriano, 2021). High legal costs, particularly those arising from licensing or intellectual property disputes, are perceived as barriers.

2.4 Professional Identity

Professional identity refers to how professionals conceptualize themselves in relation to their roles and responsibilities (Abbott, 2014; Chreim et al., 2007; Nelson & Irwin, 2014; Reay et al., 2017). This identity is shaped by the extensive educational journeys and socialization processes individuals undergo, which embed a deep connection to their work and foster self-definition through their aspirations, ethical standards, guiding principles, cultural norms, and collaborative practices within their professional contexts (Pratt et al., 2006; M.-K. Stein et al., 2013). Professional identity construction is influenced not solely by an individual's self-perception but also by the nature and contributions of others within the profession. This involves the identity formation's relational and interdependent dimensions (Strich et al., 2021). The individual dimension of professional identity gradually develops through cumulative experiences in education, training, and professional practice (Ibarra, 2005; Pratt et al., 2006). The collective dimension of professional identity is shaped through workplace experiences and interactions with colleagues (Ashforth et al., 2007). At individual and collective levels, professionals deeply value and maintain strong attachments to their professional identities, which are integral to their sense of purpose and engagement (Craig et al., 2019; Petriglieri, 2011). Studies have challenged the notion of professional identity as fixed or insulated from external forces. They suggest that professional identity is malleable and can be adapted to shifts in technological, institutional, or organizational contexts (Ibarra & Barbulescu, 2010).

2.4.1 Professional Identity and Technological Shift

Attachment to existing self-conception plays a pivotal role in shaping professionals' perceptions of organizational changes, such as introducing new technology (Ansari et al., 2023; Craig et al., 2019). Technological transitions reconfigure task structures or blur traditional professional boundaries. This triggers identity reconstruction processes (Ibarra, 2005; Ibarra & Barbulescu, 2010). In contexts such as healthcare, where digital systems and immersive technologies increasingly mediate practice, professionals may experience role ambiguity or a perceived erosion of expertise, prompting them to negotiate hybrid or adapted identities (Cain et al., 2019). A strong identification with their professional role often leads to resistance when technological change is perceived as a potential threat (Craig et al., 2019, 2023; Jussupow et al., 2018). They engage in behaviors aimed at rejecting or undermining change initiatives, thereby creating obstacles to implementing transformative processes (Jussupow et al., 2022; Nelson & Irwin, 2014; Strich et al., 2021).

Experiences and behaviors that align with an individual's self-beliefs reinforce those beliefs, validating their identity and enhancing self-esteem (Stets & Biga, 2003). This heightened self-esteem, in turn, motivates individuals to engage in further actions and behaviors consistent with their established identities (Burke, 2006). Conversely, individuals are disinclined to participate in actions, behaviors, or experiences that conflict with their existing identities, as this could threaten their self-esteem (Petriglieri, 2011). As a result, identities evolve and are influenced by an individual's life experiences.

2.4.2 Professional Identity in the Context of AI-Powered Immersive Technology

AI-powered immersive systems simulate personified, interactive, and data-driven environments that increasingly blur the boundaries between virtual and physical spaces. Unlike traditional digital tools, these systems create intense sensory and emotional experiences due to heightened realism and presence, potentially transforming or even displacing core professional practices (Strich et al., 2021; Von Krogh, 2018). Enabled by machine learning capabilities, AI systems can function autonomously by making decisions beyond human prediction (J. P. Stein et al., 2019). They reconstruct spatial, cognitive, and emotional experiences, inducing a heightened sense of presence and embodiment (Wang et al., 2023). Moreover, immersive systems impact professionals by multimodally transforming not only cognitive work but also spatial, emotional, and collaborative practices (Chow et al., 2019; Doroudian, 2025). They reconfigure interaction dynamics by amplifying sociomaterial entanglements and generating hybrid relational fields where human-machine collaboration becomes normalized (Bjørn et al., 2021; Feine et al., 2019). As professionals engage with embodied AI agents, they must develop novel interactional competencies and redefine the basis of interpersonal trust and accountability (Bailey et al., 2019). Such reconfiguration challenges long-held notions of authority, expertise, and presence, particularly in professions such as healthcare, where tacit knowledge and physical co-presence form the bedrock of legitimacy (Acemoglu & Restrepo, 2018, 2019). They destabilize established professional identities by undermining the experiential knowledge, domain expertise, and procedural autonomy that professionals have traditionally relied upon (Faraj et al., 2018; Perez et al., 2022; Von Krogh, 2018).

In these AI-augmented environments, epistemic authority is redistributed between human and machine agents, and digital surrogates increasingly replace the centrality of the physical body (Iqbal et al., 2024). This shift compels professionals to renegotiate their self-conceptions and reconfigure their symbolic authority in contexts where cognition and embodiment are virtually extended or even decentered (Bailey et al., 2019; Orlikowski & Scott, 2016, 2023). We use Identity Theory as a conceptual lens in this study, given its ability to explicate how professionals interpret, negotiate, and transform their identities in response to structural, technological, and organizational changes (Burke, 2006; Stets & Biga, 2003; Stets & Burke, 2014). Immersive AI systems increasingly reshape the nature of clinical decision-making, task execution, and interpersonal interactions, destabilizing the core self-concept of what it means to be a doctor (Jussupow et al., 2018; Strich et al., 2021). Identity theory is uniquely suited to analyzing this transformation because it unpacks the dynamic between self-meanings attached to professional roles and the behaviors enacted in response to contextual cues (Jussupow et al., 2018, 2022; Strich et al., 2021).

Within IS literature, identity has emerged as a salient construct for understanding digitally induced role redefinition, particularly in knowledge-intensive and institutionalized domains (Barrett et al., 2012; Jussupow et al., 2022; Sarker et al., 2019). Identity Theory bridges the internal-external negotiation, offering an interpretive framework that captures technological change's emotional, symbolic, and relational dimensions (Orlikowski & Scott, 2016, 2023). While dominant models such as TAM (Davis, 1989) and UTAUT (Venkatesh et al., 2003) explain technology adoption through constructs like usefulness or performance expectancy, they often fall short in contexts where identity, institutional logics, and symbolic meaning play a central role (Baskerville et al., 2019; Sarker et al., 2019).

Despite the growing scholarly attention to AI and immersive technologies, our review reveals two significant gaps. First, existing studies do not adequately address the distinctive characteristics of AI-powered immersive technology usage that reshape users' perceptions. The immersive-specific affordances require a re-examination of the ICT, individual, and organizational factors that shape adoption perceptions of knowledge workers.

Second, there remains a lack of studies that examine how AI-powered immersive systems reshape the professional identities of knowledge workers, particularly in high-stakes environments such as healthcare. Most IS studies exploring AI or immersive systems focus on functional affordances, user trust, algorithmic transparency, or performance outcomes (Benbya et al., 2021; Jussupow et al., 2018). They do not address the identity implications for professionals whose roles are materially and symbolically reconfigured. There is a need for greater attention to the sociomaterial and identity dimensions of technology use, particularly in contexts where emerging technologies challenge existing occupational logics and decision rights (Barrett et al., 2012; Faraj et al., 2018; Orlikowski & Scott, 2023). However, research examining AI and immersive technologies together as a socio-technical ensemble and their combined impact on identity transformation is rare (Dell'Acqua et al., 2023; Qu et al., 2022). Studies that engage with identity concerns tend to address traditional IT implementations such as ERP, EHR (Strong et al., 2014). They lack the immersive, embodied, and agentic affordances that characterize AI-augmented immersive systems (Bailey et al., 2019; Strich et al., 2021). As a result, we need to study how professionals make sense of identity threats, hybridity, or continuity when their embodied expertise is extended, displaced, or algorithmically supplemented by these systems (Iqbal et al., 2024; Mir et al., 2022). Furthermore, healthcare, despite being a domain where immersive AI applications are rapidly expanding, has received limited empirical attention from IS scholars seeking to understand how identity, autonomy, and ethical responsibility are reconfigured in such digitized professional spaces (Alahmad & Robert, 2020; Pillai & Mathew, 2019). This is particularly striking given the institutionalized and identity-salient nature of medical work (Chreim et al., 2007; Reay et al., 2017).

3 Methodology

The methodology of our study was motivated by the novelty of our setting. Our objective was to answer two questions. First, what factors specific to immersive technology usage impact healthcare professionals' perceptions, leading to immersive technology adoption? Moreover, how does this adoption impact the professional identity of healthcare professionals? A deeper understanding of the events occurring was required, and due to the unstructured nature of the phenomena, a grounded theory approach was best suited (Chandwani & Kulkarni, 2016). The grounded theory approach allowed us to investigate novel fields of inquiry (Möhlmann et al., 2021) and allowed elucidating and gaining a deeper understanding of significant processes (Orlikowski, 1993). By focusing on the lived experiences of healthcare professionals and the socio-technical dynamics at play, grounded theory offered us a methodological foundation to uncover the complex, multi-layered processes driving the adoption and utilization of immersive technologies in high-pressure healthcare settings (Bryant & Charmaz, 2010). Grounded theory's flexibility allowed us to remain open to unexpected insights, making it ideal for studying how healthcare professionals perceived, adopted, and transformed while integrating such novel technologies into practice. Grounded theory is also competent for investigating such emergent phenomena. It is instrumental in underexplored contexts where pre-existing theories may not adequately capture the complexities or nuances of the phenomenon (Charmaz & Thornberg, 2021; Glaser & Strauss, 1967). Due to its inductive and iterative approach, a grounded theory approach facilitates theory generation directly from empirical data (Glaser & Strauss, 1967). The constant comparison method and the iterative data collection and analysis process perfectly ensured that emerging patterns were rigorously analyzed (Charmaz & Thornberg, 2021). This helped us develop robust, contextually grounded theoretical frameworks.

Our data collection and analysis followed a qualitative methodology rooted in grounded theory (Locke, 2000). The study combined focus group discussions and semi-structured interviews to comprehensively capture 84 participants' experiences, perspectives, and contextual factors (Chandwani & Kulkarni, 2016; Kitzinger, 1994; Krueger, 2014). We conducted eight focus group discussions (FGDs) with 65 doctors for data collection. Each group comprised seven to ten participants, consistent with recommended group sizes for effective engagement and interaction (Locke, 2000). These discussions were conducted between December 2022 and July 2023 and were instrumental in understanding the state of immersive technology use by doctors. Focus groups are utilized to gain insights into how participants create meaning (Chandwani & Kulkarni, 2016; Kitzinger, 1994; Krueger, 2014). These discussions leveraged group dynamics and interactions and were particularly valuable for developing grounded theory. Accordingly, focus groups were utilized in this study to understand the state of doctors' use of immersive technologies. Focus groups typically have six to ten participants (Locke, 2000). Our study included eight groups, each with seven to ten participants. One of the co-authors, a medical professional with over ten years of experience, was conducting a residential training program for doctors. This facilitated the recruitment of participants. We included doctors from diverse specialties and geographies across India, ensuring a rich diversity of insights. We used insights from these FGDs to develop guiding questions for subsequent semi-structured interviews. Following the focus groups, we conducted 19 in-depth, semi-structured interviews with doctors holding decision-making positions. The interviews were conducted between July 2023 and March 2024 and lasted approximately 60 minutes each. The participants varied in their years of medical practice and exposure to technology. Interviews took place in doctors' clinics or at the Indian Institute of Management, Ahmedabad, depending on participant convenience. All interviews were audio-recorded with consent, and detailed notes were taken during the discussions.

For analysis, we adhered to a grounded theory approach (Locke, 2000). This involved systematic coding and constant comparison. This iterative process allowed us to develop theoretical constructs grounded in the data while refining categories and concepts. We segmented the data from transcribed interviews and focus group discussions into initial open codes. This involved line-by-line analysis to identify recurring themes, concepts, and patterns relevant to perceiving, adopting, and using immersive technologies (Miles, 1994). Open codes such as "immersive technology usage in healthcare," "concerns over patient outcomes," “role confusion”, "fear of losing traditional skills," and "Peer influence on adoption" emerged during this stage. The open codes were systematically grouped into broader categories and subcategories by axial coding. Using constant comparison, we examined relationships between categories, iterating between theoretical ideas and empirical data to ensure consistency and accuracy (Chandwani & Kulkarni, 2016; Charmaz & Thornberg, 2021). This phase led to the identification of core categories, such as “ICT factors impacting adoption,” “Collaboration design from the organization,” and “rise of new roles.” In this final stage, we refined the categories and concepts to develop theoretical constructs that explain the phenomenon under study. For example, the category " ICT Factors impacting perception about technology" was linked to codes such as "surgical planning and simulation" and "training." The category “Identity Transformation” was linked to codes such as “rise of new roles” and “subgroup formation”. We constantly compared throughout this phase, with constructs validated against the data to ensure theoretical saturation. We assessed theoretical saturation not merely as a matter of coding redundancy, but as the point at which additional data failed to generate new properties, dimensions, or relationships for our emergent theoretical categories (Wiesche et al., 2017). To ensure that premature closure did not occur, we used progressive focusing. We refined the sample to include theoretically interesting or borderline cases (e.g., professionals in hybrid roles or those transitioning across identity types). This aligns with the notion of purposeful heterogeneity, which enhances the depth and diversity of theoretical insights (Birks et al., 2013). Through this strategy, we validated that our typology was not an artifact of early saturation but reflected the broader variation in identity negotiation among participants across settings. Furthermore, we documented our analytical process through memo-writing, visual mapping of category relationships, and ongoing category comparison, ensuring that saturation was reached at a conceptual level, not just a descriptive one. (Urquhart et al., 2010). Saturation was declared only after two consecutive interview cycles yielded no novel first- or second-order codes, and all core categories had robust explanatory properties.

The coding was conducted independently by the two authors. After completing the initial coding, the researchers compared their results to identify discrepancies. Approximately 23% of the codes initially differed between the two researchers. Discrepancies were resolved through discussions, and where consensus could not be reached, a third researcher was consulted. This collaborative process ensured the final themes were comprehensive and reflected the data. The constant comparison technique was pivotal in refining these constructs, as it involved revisiting and reanalyzing the data to validate and expand upon emerging ideas. The qualitative approach helped us capture the processes and nuances of the phenomena under investigation. (Kreiner et al., 2009). It helped us understand the "hows" and "whys" of the research agenda. This also gave us access to rich, empirical descriptions of specific occurrences of the phenomenon, which were characteristically grounded on the assortment of evidence sources we had (Yin, 2018). With the data collection and analysis procedures established, we present the findings from our study.

4 Results

We present the key themes from our data, illustrating how AI-powered immersive technologies influence adoption decisions and professional identity among healthcare practitioners. To address our first research question, we identified a set of ICT-specific, individual-level, and organizational factors that collectively influence how healthcare professionals perceive and adopt immersive technologies.

4.1 RQ1: What factors specific to immersive technology usage impact healthcare professionals' perceptions, leading to immersive technology adoption?

Our interviews highlighted the distinctive capabilities of AI-powered immersive technologies, and the transformative shifts they introduce to clinical processes significantly influenced doctors' perceptions. These technologies are impacted dually by revolutionizing sensory dimensions and reshaping decision-making frameworks. Combining ICT, individual, and organizational factors shapes doctors' adoption of AI-powered immersive technologies. Each dimension plays a crucial role in shaping doctors' perceptions, acceptance, and integration of immersive solutions into clinical practice.

4.1.1 ICT Factors

4.1.1.1 Surgical Planning:

Immersive technologies in fusion with AI, studied in our investigation, stand out from other technological advancements. This can be attributed to how immersive technologies impact the sensory and experiential dimensions of healthcare professionals delivering their service. Immersive technologies engage all senses of sight, sound, and touch. A doctor can virtually navigate through tissues and organs. Such visual representations provide a better understanding of spatial relationships. They allow doctors to practice procedures in highly realistic virtual settings by providing a multi-sensory experience. AR technologies can enable the overlaying of digital information in the real world. For instance, when preparing for intricate surgical procedures, a neurosurgeon may utilize scanned images processed by an MR machine, translating them into a detailed three-dimensional holographic model. This advanced visualization allows the surgeon to examine the affected area layer by layer, facilitating comprehensive preoperative planning and enhancing procedural readiness. In our interactions, doctors highlighted how they use these features for clinical procedures. Traditional static technologies like imaging systems or electronic health records could not process such shifts. A neonatologist responded,

> *"Immersive technologies like mixed reality stand out significantly from other technological advancements… they impact the sensory and experiential dimensions of medical practice... for example, being able to feel spatial orientation of organs through haptic feedback in VR simulations helps in rehearsing, understanding better and also helps in anticipating surgical challenges…..these technologies have the capability to convert a 2D image into a 3D digital twin...you have tools like EchoPixel[2] For that..Even medical students and residents can virtually step into complex surgical scenarios and experience them like they are physically there. This promotes a deeper cognitive and emotional connection to the material. I feel that this kind of learning will improve retention and practical application."* Neonatologist

In the same context, a Chief of Surgery said,

[2] https://www.medivis.com/surgical-ar

"There have been some new technologies like the Mission Rehearsal VR platform from ImmersiveTouch[3] that have been adopted... even before entering the operation theatre, we can virtually plan and simulate each patient's unique anatomy in 3D. There is also this ImmersiveSim platform. It uses both AR and VR for training purposes. Doctors can literally get transported into the middle of an operating room... they can rehearse procedure...This does help in improving surgical planning and training… when you can rehearse a case beforehand, you anticipate potential challenges, and it gives you time to refine your techniques... In the future, we will realize that this could help significantly reduce intraoperative surprises…For India, this could also help tackle the lack of experts by helping train upcoming medical professionals… "

"One of the most novel techniques that you can see being introduced by immersive tech is in visualisation… we now have VR Simulators, using which surgeries can be practiced in a fully virtual environment on a computer screen.. we have dedicated simulators for laparoscopic and arthroscopic surgeries….in the coming future some hybrid models such as the arthroscopic knee simulator are going to be quite common.. So there is a physical knee, but everything inside is virtual. The internal structures can be seen virtually using a telescope…..stuff like Microsoft HoloLens[4], VR with Haptix..they overlay additional information onto the real world and provide data during procedures…immersive tech can transport you to a virtual operating room…currently they might not be common but I sense them emerging fast…" Surgeon

Proposition 1a: Task-enhancing capabilities of AI-powered immersive technologies in enhancing surgical planning are positively associated with healthcare professionals' perception of the technology.

4.1.1.2 Data Integration and Decision Support

Immersive technologies have brought massive changes in carrying out clinical processes. Moving beyond the capabilities of existing technologies, such platforms can pull data from electronic health records, diagnostic imaging systems, laboratory results, and real-time monitoring devices. They can further present it in an integrated manner. Doctors can use these analyses to assess the patient's condition and make well-informed decisions holistically. During complex surgeries, the medical team can momentarily monitor the patient's response to interventions and adjust treatments accordingly.

"…To a certain extent, it (Immersive technology) will revolutionize the way we integrate real-time data into our practices…currently there might be some issues with the accuracy but with time and more data-based systems, it will become accurate...we attended a conference recently… a fellow doctor talked about how advanced AR systems can overlay real-time imaging data directly onto the patient during procedures… it is fascinating how while surgery is going on.. for example during a liver transplant, the surgeon can see live updates from MRI and CT scans. These are superimposed onto the patient's body. It could be looked at both ways. It does guide the doctor precisely instant access to crucial information. However, at the same time, more experienced doctors will have to get used to handling these artifacts while at the same time performing surgery…. These might be more useful in emergency situations…such as trauma cases. AR will provide immediate visual guidance on internal injuries based on real-time ultrasound scans. These could enable faster and more accurate interventions." Chief Radiologist

They can enhance precision in clinical insights, support robust decision-making, minimize risks of errors such as misdiagnoses or unnecessary interventions, guide appropriate test ordering and interpretation, and refine treatment recommendations. "Precision medicine" powered by machine learning is an emerging approach to disease treatment and prevention, incorporating individual differences in genetics, environment, and lifestyle. Precision medicine allows doctors to tailor treatments based on a patient's genetic background, environmental influences, lifestyle, and habits rather than applying a one-size-fits-all model.

"Oncologists have been using immersive tools in cancer treatment in the US (United States). They use the reports to decide on the specifics of chemotherapy or immunotherapy options

[3] https://www.indianpharmapost.com/digitisation/aiims-now-uses-immersivetouch-for-surgeries-11055
[4] https://www.microsoft.com/en-IN/hololens/industry-healthcare

> *based on the molecular profile of each patient's tumor. I read a recent study about AI-enabled precision medicine, it is a company known as Tempus. They use machine learning to analyze clinical and molecular data….what insights are generated are used for precision oncology. It sequences tumor DNA and RNA, combines it with patient data and their past records. It is used by doctors to understand the unique genetic composition of the tumor…. they suggest treatment options that are personalized… lifestyle interventions, medication plans, all adjusted to their specific risk profiles."* Oncologist

By leveraging real-time data visualizations, clinical processes can be dynamic, allowing for more detailed and actionable insights, improved search capabilities in visualization dashboards, and enhanced predictive modeling. Doctors are able to access critical data and visuals while the actual procedure continues. They can integrate data from various sources to streamline medical workflows. Data regarding patient vital signs, anatomical images, and surgical guidelines can be directly overlapped into a cohesive interactive interface presented in the surgeon's field of view. Doctors highlight how AR headsets can project a patient's CT or MRI scans onto the surgical site. This allows them to navigate intricate anatomical structures. It also helps them to anticipate any potential challenges that might come up and allows them to decide promptly. The doctor's role transforms from reactive treatment to more preventive care and enables proactive interventions. AI-powered predictive analytics enable doctors to foresee potential health issues and intervene proactively.

> *"Predictive analytics have truly transformed patient care…. Doctors can use it to foresee potential health issues even before they manifest…this has caused a shift from reactive treatment to proactive intervention. We use predictive analytics tools in our hospital to monitor patients with chronic conditions such as diabetes. Historical data and real-time health metrics help identify patterns that indicate high risks. For example, we use it to predict the probability of diabetic patients developing foot ulcers. We integrate data from regular check-ups and data from continuous glucose monitoring devices. Identifying these earlier signs helps us take preventive measures…"* Endocrinologist

> *"…you will see multiple tools in the market gradually… Medivis[5], AccuVein[6], and many more. I have seen many startups in this area. All these tools use AR to overlay CT and MRI scans directly onto the patient's body. We can visualize the anatomical details of the patient without looking away from the surgical field. AccuVein and all are used for procedures needing vascular access, especially in paediatric and geriatric care, where finding veins can be challenging. GE also has this Omnify[7] that uses AR to integrate patient vitals onto a single display. They are designed to reduce interruptions during surgeries…all critical information is available directly in the surgeon's field of view."* Surgeon

Proposition 1b: Task-enhancing capabilities of AI-powered immersive technologies to support decision making with real-time clinical data integration are positively associated with healthcare professionals' perception of the technology.

4.1.1.3 Training Capabilities

Immersive technologies offer opportunities for training medical students and professionals. VR simulations have helped improve the depth and quality of learning. This enables trainees to develop their skills and confidence. They can gain hands-on experience in a controlled, risk-free setting without physical resources or geographical location constraints. Through these simulations, intricate details of a surgical environment can be recreated.

> *"...so medical students in good medical schools are taught human anatomy by dissecting cadavers…most medical schools will only use books or videos to teach this. That's how you get insights into the body structure... However, there have been issues in the number of cadavers that medical schools can arrange. Also, since these bodies have been preserved, the anatomical details are significantly different from those of living patients…I found it much easier to learn when there were visual cues. Remembering everything by looking at a diagram in a book is impossible…especially when, in reality, they exist in 3D; you can't visualize it in 2D illustrations…Immersive technologies can solve this issue by providing highly detailed and*

[5] https://www.medivis.com/surgical-ar
[6] https://www.accuvein.com/
[7] https://www.gehealthcare.com/products/image-guiding-solutions/omnifyxr-interventional-suite

> *accurate 3D models of human anatomy. These models are based on real patient data… they offer a true-to-life representation of anatomical structure…Students can view from any angle and also practice repetitively without the imitations and ethical concerns associated with cadaver use…"* Resident in General Surgery

They are also often used to simulate medical scenarios so students can practice techniques multiple times until they have achieved proficiency. It also allows them to engage with the environment in real-life situations. Such engagement fosters a deeper cognitive and emotional connection to the study material. Doctors feel that if the cost barriers go down, they can be used to provide training in remote or under-resourced areas.

> *"...you must have heard in the news…in a hospital in Chennai, I think...they are already using Apple Vision Pro headsets in trials… these devices have a 360-degree spatial computing capability.. this way, there is no need for multiple monitors in the OT…doctors can see all the details, scans, vital statistics, and other history, all in real time while the surgery is going on…They can also mirror these images onto external monitors or screens during the operation… so that could benefit the trainee doctors…they will be able to witness and learn closely."* Surgical Gastroenterologist

Traditional training methods practiced in most medical schools are designed in a one-size-fits-all approach. All the doctors, irrespective of their learning curves, existing skills, or areas of improvement, go through the same training program. Such an approach often fails to address the unique learning requirements of doctors. Immersive technologies can create customized training modules that are specifically designed to cater to the individual requirements of doctors. Personalized training programs are based on the doctor's performance and focus more on the areas that need improvement. Since they are flexible, they also get updated according to the progress made and the latest medical advancements and practices. This ensures a more updated approach with the most current techniques and protocols. In a field like healthcare, which keeps evolving, doctors need to be updated with the latest advancements to provide the best quality of care.

> *"…actually, some medical schools have implemented VR training modules for the residents. It is not that common in India yet. The West has a better status…but these simulations help the residents practice complex surgeries in a virtual environment that mimics real-life scenarios. Recently, we also had a session with our cardiologists.. they used an AR module to visualize and interact with 3D models of the heart... they learnt about the latest procedures for treating congenital heart defects. It was a new learning experience for a lot of us too... we received good feedback…such technologies will obviously make the learning more interactive and effective…"* Head of Medical Education

> *"...these interactive applications can tackle critical tasks like Virtual Training Simulation modules for new doctors, especially in complex surgeries. But the adoption needs significant commitment from hospital management. There is a requirement for necessary hardware and software... and those are expensive. No one can deny that technology plays a crucial role in training medical students. Of course it does. But it can never completely replace the human element in medical education. There is a high cost attached to it, and it remains a significant barrier for many medical colleges."* Director in Medical Startups, Founder

> **Proposition 1c: Task-enhancing capabilities of AI-powered immersive technologies in enhancing medical training and skill development are positively associated with healthcare professionals' perception of the technology.**

4.1.1.4 Ethical and Privacy Concerns

Integrating AI-powered immersive technology into healthcare introduces significant ethical and privacy concerns that influence doctors' willingness to adopt these innovations. Unlike traditional healthcare technologies, immersive tools often require extensive data collection and integration, including sensitive patient information such as medical histories, imaging data, and real-time physiological metrics. This extensive data usage necessitates robust safeguards to protect patient privacy and prevent unauthorized access or misuse. An oncologist remarked,

> *"…however, on the other side, you will also see new, unique ethical issues coming up, especially related to patient privacy and data security... sensitive patient data might be at risk... organizations designing AI, AR, and VR technologies work closely with doctors, and they have*

access to their patient records... there is a need to develop robust protocols and stringent safeguards. Patient information needs to be protected or at least protected from any misuse…there should be governance of the collaboration between technology developers and doctors… if we want to see more positive and less negative outcomes, they need to maintain confidentiality and integrity of patient data…" Oncologist

Furthermore, the psychological effects of virtual environments on patients need consideration. Immersive technologies can create highly realistic simulations that may have unintended psychological impacts, such as anxiety or stress, especially if patients are exposed to distressing scenarios. The potential psychological risks associated with immersive technology necessitate heightened vigilance and require doctors to implement measures to mitigate any adverse effects. This concern contributes to resistance in adopting these technologies, particularly when empirical evidence remains insufficient, and the technology is in its nascent stages.

"There is an additional responsibility for ensuring the security and confidentiality of patient data…all these technologies are integrated…this needs clear delineation... regulatory bodies will have to establish robust protocols and legal frameworks…we'll have to define the responsibilities of all the parties involved…not just the hospitals or doctors but also the developers and vendors of these technologies…" Senior Consultant

"AI,AR,VR,MR...all these technologies…have extensive data integration, including detailed medical histories, imaging, health metrics…, and everything.. any breach could seriously harm our patients and damage the trust they have in us… even patients will have to be explained how these technologies will be used in their care...how their data is being managed…as of now many doctors don't understand these complex technologies...it's even more challenging to explain to the patients..." MD Internal Medicine

Proposition 1d: Healthcare professionals' perception of data privacy risks associated with AI-powered immersive technologies is negatively associated with their perception of the technology.

Proposition 1e: Healthcare professionals' concerns regarding ethical ambiguities and accountability in AI-powered immersive environments negatively influence their perception of the technology.

4.1.2 Individual Factors

4.1.2.1 Perception of Self-Presence

Doctors' identification with their digital avatars within immersive AI environments influenced their level of engagement, comfort, and eventual adoption. They felt greater psychological immersion when they recognized their avatars as authentic representations of themselves. This identification was contingent on the avatar's fidelity to the doctor's real-world persona, encompassing physical resemblance, behavioral responsiveness, and contextual appropriateness. A disconnect between the doctor and their avatar led to negative perceptions of "mechanical" or "depersonalized,". The sense of self-presence was not merely perceptual but also had profound cognitive and emotional implications. It allowed doctors to project themselves into virtual space, enabling them to engage with simulated patients, instruments, and environments in ways that closely mirror real-life clinical experiences. When individuals felt a strong sense of self-presence, they enhanced their perceived realism and positively impacted their perception.

"If the system gets that part right, it earns my trust. It feels like a safe and valuable extension of my professional practice. If it doesn't, then no matter how advanced the features are, it's hard to fully engage… becomes a little disorienting.. There's a kind of psychological immersion that sets in...like rehearsing for reality." Neurosurgeon

Proposition 2a: Healthcare professionals' perceived self-presence (identification with their digital avatars) is positively associated with their perception of AI-powered immersive technologies.

4.1.2.2 Perception of Social Presence

The extent to which doctors felt a sense of interpersonal connection, co-presence, and interactivity also shaped their perceptions of AI-powered immersive technology. A doctor's ability to perceive and engage with AI entities, virtual avatars, and colleagues in a collaborative digital space is designed by their perception. Their perception of virtual interactions compared to real-world interactions impacted how they perceived and engaged with the systems. They preferred immersive environments that could replicate the social dynamics of traditional clinical settings and evoke emotions such as trust, empathy, and social bonding. This immersive closeness increased trust, wherein doctors felt more confident assessing the reliability of virtual agents and AI-generated insights through embodied experience rather than relying solely on system outputs. Moreover, the ability to observe and interpret their own and others' gestures, reactions, and nonverbal cues in a virtual clinical setting instilled positive perceptions. It legitimized the immersive platform as a safe and effective tool for professional use. However, if doctors experienced a lack of social presence or dissonance between themselves and the virtual role, the immersive technology was perceived as inauthentic and led to a reluctance to adopt it. They also highlighted that they would prefer the technology interface that allowed them to tailor the environment according to their needs and provided higher levels of user control and interactivity. The ability to customize the environment helped them with patient engagement and interactions. It also made the interpretation of the technological outputs easier, and they could process complex information.

> *"If you are using these technologies, they must deliver that extra value. If they lack interpersonal engagement, they are just mechanical, more or less similar to older technologies. Why go through all the processes and then deal with a generic depersonalized system of robots and avatars...If you are going to design me as an avatar to deal with patients, that avatar should represent me in all aspects...patients need to feel the same or at least similar when interacting…"* Senior Consultant

Proposition 2b: Healthcare professionals' perception of social presence within AI-powered immersive environments is positively associated with their perception of the technology.

4.1.3 Organizational Factors

4.1.3.1 Designing Collaboration

Immersive technologies redesign collaboration within the organization through shared or collaborative virtual environments (SVEs or CVEs). Such arrangements facilitated real-time knowledge sharing as multiple users could interact with the same virtual patient or medical scenario. They provide the capability to enhance collaborative efforts among doctors through shared immersive environments across geographically dispersed teams. VR platforms can now support or be adapted for multi-user interaction. This holds significant potential to enable collaborative 3D environments to integrate data with natural human pattern recognition. This could reveal complex, multidimensional data relationships and facilitate the extraction of actionable insights that may elude traditional analytical methods. Such collaboration led to real-time data sharing and accessing the most current information. It allowed them to work in a team regardless of physical location by having a virtual presence with clear and effective communication. It provided them with opportunities to collaborate with doctors worldwide and learn the latest techniques from them. Collaboration environments that promoted a team of surgeons to practice complex surgery in a virtual operating room while discussing and refining their techniques in real time led to adoption of these technologies. Such collaboration would allow them to deliver holistic patient care through a multi-disciplinary team with diverse expertise and perspectives.

> *"… another interesting thing is that they can connect with others over headsets, just like a group Facetime… everyone can see the stats in their own headsets.. coordinate with each other and provide guidance... it would be a fantastic way to improve the efficiency in the operating room if implemented properly…* we are in conversation with *Virtualitics*[8]*... it's a VR platform… It supports multi-user functionality. So the doctors can manipulate data in real-time, visualize outcomes, and collectively decide on subsequent actions. So, using it we would be able to create an interactive and shared problem-solving space."* Endocrinologist

> *"In our hospital, we have integrated the VR simulators to surgical procedures… these simulators allow us to perform mock surgeries… in a monitored environment… we also use AR tools like Microsoft HoloLens…especially in the Indian context, we can benefit a lot from such technologies in tier 2 and tier 3 cities. They can enable clinicians to provide remote assistance*

[8] https://virtualitics.com/

> *to their colleagues during consultations and surgeries…they'll help bridge the geographical gap…"* Chief Surgeon

The organizational decision to collaborate facilitated greater trust, engagement, and eventual adoption of immersive technologies among doctors. Collaborating with other healthcare professionals was already an important part of existing practice. When organizations increased engagement via interactive multi-user environments and institutionalized AI-assisted teamwork, collaboration with AI-powered technologies was perceived as collaborating with their "colleagues." Some anticipated doctors would work alongside AI-powered technologies within five to ten years. AI has already started assisting in clinical decision-making. Professionals highlighted that the ability to process vast amounts of data and learn autonomously will make them a powerful partner in patient care. While many senior doctors still see them as tools to be controlled and directed by human expertise, some doctors highlighted that self-learning technologies possess capabilities far beyond the scope of human cognition. They saw them as potential knowledge collaborators. These collaborators can assist in analyzing comprehensive datasets, identifying patterns, and even providing insights that human practitioners might overlook.

> *"Technology will have its own brain...It will be an independent system capable of contributing to clinical decisions in a few years". The collaboration between human expertise and AI will redefine the roles and responsibilities of future doctors. Hospitals that promote this collaboration culture will see them as partners and not disrupters. They will be exposed to these technologies and will develop trust."* Surgical Gastroenterologist

Another critical aspect of organizational strategy in structuring AI-doctor collaboration within immersive technology frameworks is refining accountability mechanisms. Organizations' role in defining clear responsibility structures and establishing transparent governance policies also impacts the perception of doctors regarding adoption. Traditionally, accountability in medical practice has been straightforward. Doctors are held responsible for their clinical decisions and outcomes. However, when AI systems contribute to decision-making, the locus of accountability becomes ambiguous. In cases of AI-assisted mistakes, there is ambiguity in accountability between the physician, the technology developer, and the institution that deployed the tool. The opacity of many AI systems compounds this ambiguity. These "black boxes" use deep learning algorithms, often producing results without transparent explanations. Our respondents highlighted that regulatory frameworks for addressing such issues are still in development, with gaps in liability coverage and legal precedents.

> *"Yeah, they offer advancement, but they also raise complex legal questions. So if an error occurs during a procedure aided by VR or AI, how to determine whether the responsibility lies with the medical professional, the technology provider, or the institution that implemented it?... This ambiguity extends to how consent, data security, and patient privacy are interpreted in these new contexts. Patients will have to be informed about the use of immersive technologies in their treatment… along with it, what are the potential risks and benefits… healthcare systems will have to develop policies that would balance the benefits of technology while also safeguarding for accountability."* Endocrinologist

Proposition 3a: Organisational support in creating shared collaborative virtual environments (SVEs/CVEs) positively influences healthcare professionals' perception of AI-powered immersive technologies.

4.1.3.2 Widening Skill Scope

The capability of immersive technologies to stimulate novel scenarios and encourage innovative solutions also drives their perception. Doctors highlighted that organizations could leverage AI-powered immersive technologies to provide them with a platform to experiment in a virtual environment without the associated risks. This encouraged creativity and the exploration of innovative approaches to develop novel solutions. By immersing doctors in interactive simulations, organizations could enable a "learning by doing" approach, supporting visual learning and enhancing comprehension of complex, often abstract medical concepts. Virtual simulations enable practitioners to explore intricate anatomical structures or engage in complex procedures repetitively without the risk associated with live patients. In such environments, doctors can experiment with innovative solutions, refine their techniques, and gain new perspectives on clinical scenarios. This approach would help recognize their value in widening their skills and lead to positive perceptions.

> *"It (immersive technology) will give us this whole creative space where we can independently solve and explore things on our own terms. It's like, you're not just sitting and memorizing…you're actively figuring things out. And in my experience, this kind of self-directed learning? Super helpful, especially in our field where you're always coming across new things…. Doctors will be able to practice diagnosing, even try out some unconventional treatments to see how they might work… like a rehearsal for real-life situations. It'll be prepared in a much more hands-on way."* Resident in General Surgery

On the other hand, doctors also highlighted that their overly rigid or prescriptive use may unintentionally hinder adaptive problem-solving. If organizations overemphasize rote procedural repetition in virtual simulations, doctors may develop a dependency on predefined protocols. This would limit the creative spontaneity required in unpredictable real-life situations. They may also stifle doctors' problem-solving abilities by imposing fixed protocols rather than fostering exploration and critical thinking.

> *"I agree it is an excellent tool for training...but if you see, the integration of immersive technologies for surgical simulations.. they may inadvertently... I am not saying this will happen, but it might reduce the emphasis on hands-on experience. We had training in high-stakes environments. Even today, I would suggest my son to first practice without technology and then shift to technology for help…You need to get your hands dirty."* Anesthesiologist and Critical Care Physician

Proposition 3b: Organisation support in enhancing skillsets positively influences doctors' perception of AI-powered immersive technologies.

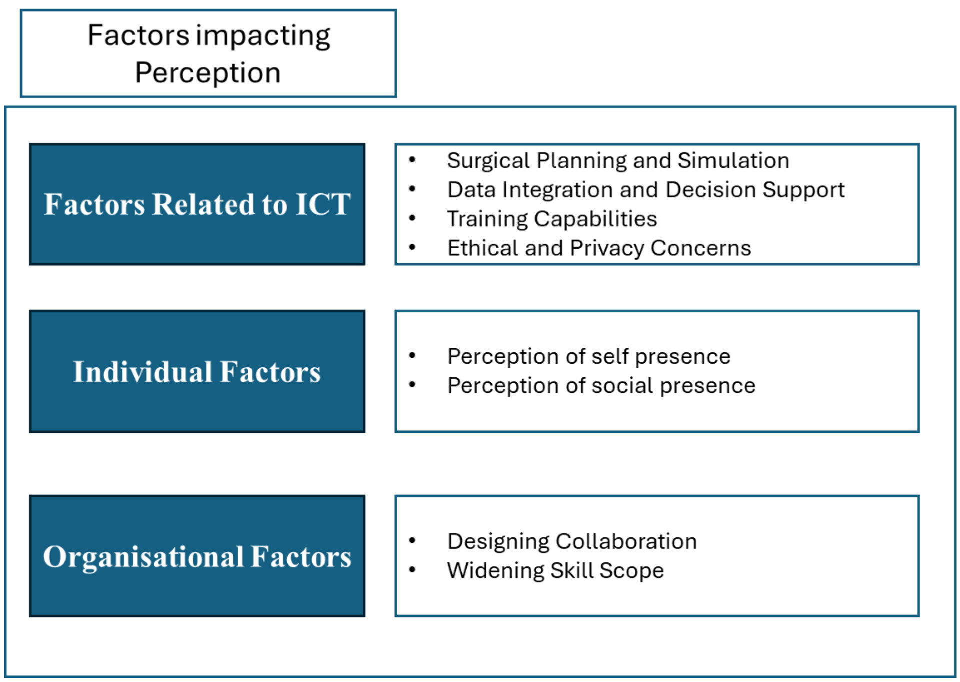

Figure 1. What factors specific to immersive technology usage impact healthcare professionals' perceptions, leading to immersive technology adoption?

While RQ1 focused on the factors influencing immersive technology adoption, RQ2 turns attention to the deeper implications of this adoption, specifically, how these technologies reshape the professional identity of healthcare practitioners.

4.2 RQ2: How does the adoption of AI-powered immersive technology impact the professional identity of healthcare professionals?

We identified a nuanced spectrum of adoption behaviors while interacting with healthcare professionals. Discussions about their engagement with current and future AI-powered immersive technologies led to revelations about their mindset, attitude, and behavior. Notably, we found no evidence of outright resistance to technology among the participants. Rather, all doctors demonstrated an openness to adoption, albeit to different degrees and influenced by diverse contextual factors. Based on these degrees of adoption, we recognized four distinct identity groups. These groups were distinguished based on their key characteristics, including the extent to which doctors integrated AI-powered immersive technology into clinical practice, their approach to training and skill acquisition in this domain, their propensity to take risks in utilizing these technologies, and their decision-making processes when engaging with immersive tools.

We labeled these identity groups as **Risk-Averse Adopters**, **Pragmatic Adopters**, **Informed Enthusiasts**, and **Technology Champions** (Figure 2). These identities represent touchpoints along a continuum rather than rigid classifications. We delineated adoption behaviors and accounted for overlapping characteristics and transitional attitudes as doctors demonstrated different acceptance levels. Technological, individual, and organizational factors shaped the perceptions, motivations, and apprehensions that led to varying degrees of adoption of AI-powered immersive tools (Figure 3).

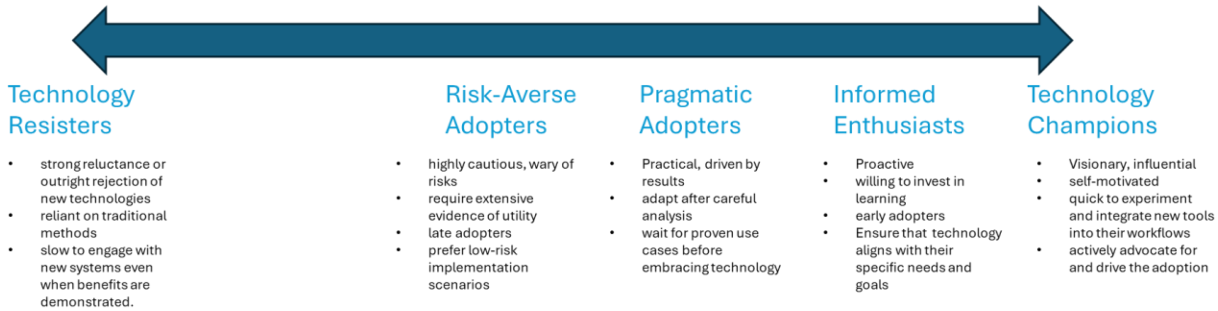

Figure 2. How does the adoption of AI-powered immersive technology impact the professional identity of healthcare professionals?

	Risk-Averse Adopters	Pragmatic Adopters	Informed Enthusiasts	Technology Champions
Integration into clinical practice	• view useful only after they have been proven to enhance clinical outcomes • demand robust clinical evidence or peer-reviewed research validating the applicability of the technology	• assess the technology through a cost-benefit lens • open to adoption if clearly demonstrates improved efficiency or patient outcomes	• see it as highly relevant to clinical practice and believe they can revolutionize patient care • actively explore ways to integrate these tools into their workflows	• believe that it is indispensable for modern healthcare • view systems as transformative, capable of addressing systemic inefficiencies and improving outcomes
Approach to training and skill acquisition	• require extensive training or demonstrations to feel confident using the system in a clinical setting	• comfortable using systems with minimal learning curves	• often self-learn or attend specialized training to stay updated	• often serve as trainers or mentors for colleagues adopting AI-driven tools
Propensity to take risks	• reluctant to experiment with untested or emerging features • fear of errors or liability issues associated with AI technologies	• open to calculated risks if the benefits are evident • pilot the technology in non-critical scenarios before integrating it into routine clinical practice	• Willing to take risks within controlled environments. • Experiment with new features or tools as long as patient safety is not compromised	• high willingness to take risk • ddvocate for early adoption and beta testing, even in complex clinical scenarios, to push boundaries and uncover new potentials
Decision-making processes when engaging	• strong desire to retain clinical autonomy • wary that AI systems could interfere with their clinical judgment or limit their ability to make personalized decisions for patients.	• prefer technologies that enhance their decision-making rather than replace it • appreciate tools that offer recommendations or data insights while leaving final decisions in their hands	• comfortable sharing decision-making as they see tools as collaborators rather than replacements • value tools that augment their expertise	• embrace shared decision-making and are open to relinquishing some degree of autonomy if it results in better patient outcomes • trust the system's ability to enhance clinical care

Figure 3. Characteristics of Different Professional Identities

4.2.1 Risk-Averse Adopters

The Risk-averse identity group demonstrated a prevalent sense of skepticism and caution toward AI-powered immersive technologies. These doctors strongly emphasized the need for robust clinical evidence and peer-reviewed research before considering such systems clinically applicable. A common feature amongst them was their previous limited familiarity with immersive technologies. While they were clear about what AI is, immersive technology needed some explanation. They expressed a need for extensive demonstrations and hands-on training to develop confidence in utilizing these tools. The reluctance to take risks was another defining characteristic. They were driven by fears of potential errors and legal liabilities associated with using untested features.

> *"I will always rely on my clinical instincts more...Ya, of course. I can definitely see these tools being used in the future. Mostly to simulate different scenarios before applying them in new settings. As of now, I'm cautious. It will take some time for technology to reach this stage. Even 95% accuracy is not good enough… it is very critical… The margin for error is too thin in neonatal care. We will need enough proof before replicating..."* Neonatologist

A strong desire to retain clinical autonomy was also repeatedly mentioned. They seemed particularly wary of AI interfering with their judgment or decision-making. For these doctors, any tool that appeared to limit their ability to make patient-specific decisions was viewed with significant apprehension.

> *"I still find it hard to fully trust AI-powered imaging systems for diagnosing arrhythmias. It's not that I don't see the potential. It's just that I feel more comfortable sticking to ECGs, and interpretations that I have made myself... Patient safety is paramount. We can't take chances. It might provide a second opinion or suggest options, but it can't take away my judgment….I will always follow my instincts… What if it overrides a nuanced decision in a rare case and we have undesired outcomes? Who will be held responsible? We will have loads of medicolegal cases."* Cardiologist

These doctors, who have built their careers on conventional methods, sometimes feel challenged or threatened by the rapid technological advancements and the new skills required to stay relevant. They tend to view the emphasis on technology as overshadowing the importance of clinical experience and hands-on patient care. They prioritized reliability, clinical experience, and the ethical dimensions of care. They were more likely to be skeptical of the efficacy of immersive technologies and preferred to rely on tried-and-tested methods that have proven successful over the years. This group of doctors challenged the growing focus on technology and argued that it detracts from personal connection and experiential wisdom, which are more critical to patient care.

> *"They attend all these fancy conferences and talk about virtual simulations and predictive analytics and so many jargons and buzz words….but sometimes I wonder if we are forgetting the basics. Medicine is about the human connection…Our seniors had the ability to listen and observe and would diagnose based on experience. There was no machine to tell you. It feels like the spotlight is shifting towards tech, with less emphasis on hands-on skillset development…"* Cardiologist

They perceived that such technology usage tended to develop different networks within the broader medical community. Individuals who proactively approach technology-driven solutions keep attending conferences, workshops, and seminars on the subject. They collaborate closely and share knowledge, techniques, and insights on the latest technological advancements. However, creating these subgroups could inadvertently lead to an asymmetric perception of elitism in the community.

Proposition 4a: Risk-averse adopters are less likely to integrate AI-powered immersive technologies into clinical practice due to their reliance on traditional methods and skepticism toward unvalidated technologies.

Proposition 4b: Risk-averse adopters prefer extensive, structured, and hands-on training before considering the use of immersive technologies

Proposition 4c: Risk-averse adopters exhibit low-risk tolerance when using AI-powered immersive technologies in high-stakes or novel scenarios.

Proposition 4d: Risk-averse Adopters prioritize personal clinical judgment over AI-generated insights. They do not delegate or share decision-making authority with AI-powered immersive systems.

4.2.2 Pragmatic Adopters

The second identity demonstrated a more balanced and practical approach to AI-powered immersive technology adoption. One commonality among them was their approach to consistently evaluating new systems through a cost-benefit lens. This emphasized that their priority was that technology must clearly improve efficiency or patient outcomes and justify its integration.

> *"We have already used 3D modeling software. And I am excited about the future of AI and immersive tools. We will be able to pre-plan surgeries with holographic overlays that show real-time kinematics of the knee joint. It could be a game-changer for surgical precision… also reduce OR time."* Orthopaedic Surgeon

> *"It can be used to identify COPD exacerbations using predictive analytics. I'd adopt it…if immersive tech can show me real-time lung functionality or overlay imaging findings directly during a bronchoscopy, I'd adopt it. But still, for the high-risk cases, companies developing such technology need to justify the additional cost and training time before we can use them on a day-to-day basis."* Pulmonologist

They were moderately more familiar with AI. This allowed them to engage with systems with minimal learning curves. However, they tended to avoid overly complex solutions. If new technology brought complex changes and required more time to adopt, they were apprehensive about adjusting to it. They were open to calculated risks. They also mentioned piloting AI-powered tools in controlled scenarios, such as high-risk patient management. Once deemed successful, they only incorporate them into their routine practice. They only looked at them as tools that could be used to remove repetitive tasks and did not require their attention. These doctors valued their clinical autonomy but appreciated tools that enhanced their decision-making without replacing it. They preferred systems that provided data-driven insights while leaving final decisions in their hands, reflecting their focus on collaboration between human expertise and technology.

> *"I'd gladly use a tool that maps out treatment options for a multi-drug-resistant TB case, but the choice of antibiotics has to be mine. Each patient has different requirements and AI can't yet customize to that extent… Often for the same symptoms, different patients need different medicines based on their history…I know their history, I know the other details..I can customize better…maybe AI can give me suggestions, but yeah, I will see what fits best for that particular patient."* Senior Consultant

These doctors had a cautious perception of the ease of use of technology. The new and complex environment led them to feelings of frustration and, hence, higher overload. They are overwhelmed with handling the technicalities and fear losing concentration on the essential tasks. This hinders their performance and reduces their confidence in effectively using technology. They prefer to use immersive technologies only for educational purposes, such as training and simulations. This would allow them to get accustomed to technology and learn in a controlled environment rather than in situations where patients' health is at stake. They suggest that some clues, such as on-screen prompts, help them stay on track and reduce the effort needed to remember everything. Another way in which they can have better control in managing their cognitive load is by customizing the difficulty levels of simulations, pausing, pacing, and playing according to their proficiency.

> *"We do use AI tools like ChatGPT for tasks like drafting medical articles, generating patient reports, and even assisting with diagnostics. We've figured out how to complete more tasks in less time, especially the less important ones we can do using all this tools na..It frees up space for the more important tasks, such as patient interaction and the thinking part of the job."* Dermatologist

Proposition 5a: Pragmatic Adopters integrate AI-powered immersive technologies into clinical practice when there is clear evidence of improved efficiency or patient outcomes.

Proposition 5b: Pragmatic Adopters prefer training environments that are intuitive, minimally disruptive, and tailored to their learning pace.

Proposition 5c: Pragmatic Adopters demonstrate moderate risk tolerance and engage with AI-powered immersive technologies in controlled or pilot scenarios before scaling up to routine or high-stakes clinical applications.

Proposition 5d: Pragmatic Adopters adopt AI-powered immersive systems that provide data-driven insights while preserving the final decision-making authority with themselves.

4.2.3 Informed Enthusiasts

The third was the identity of adopters who expressed a forward-looking and highly optimistic view of AI-powered immersive technologies. They viewed such systems as applicable and transformative and deemed them capable of revolutionizing patient care and improving outcomes. This group of doctors exhibited high levels of familiarity with emerging technologies. They also cited instances of self-learning or participating in specialized training to stay updated. They were willing to take measured risks, experimenting with new features in controlled environments to ensure patient safety. Their approach to clinical autonomy was collaborative; they welcomed AI as a partner in their clinical decision-making process, seeing it as an augmentation of their expertise rather than a replacement.

> *"I believe these tools are redefining how we approach healthcare delivery.. For example…oncological imaging. They have the capability to combine precision and teaching opportunities for trainees. I can navigate a 3D-rendered liver, zoom into subtle lesions ..understand their vascular supply in real-time… AI can be a collaborator, not a competitor. I'd welcome optimal suggestions, but the clinical strategy has to come from me."* Chief Radiologist

This category of doctors actively explored and planned to adopt ways to integrate these tools into their workflows. They positioned themselves as early adopters and advocates for innovation within their practice.

> *"AI tools, with dermoscopy, can already flag melanoma cases much faster than our manual workflow and with more precision… they can simulate the progression of skin diseases over time. It can be used in explaining complex conditions like psoriasis to patients in a visually intuitive way…"* Dermatologist

An intriguing question emerging from these doctors was the precise composition of a doctor's role. It was concerning the delineation of its boundaries. Historically, a doctor's role was defined by clinical judgment, manual dexterity, and empathetic communication. All these roles were framed within the context of hierarchical expertise. The doctor was the unequivocal authority, wielding knowledge and skills honed through years of education and practice. However, AI-powered technologies have reshaped this paradigm. As patients become more engaged with technology, the doctor's role shifts from being the primary source of information to a guide who helps interpret and contextualize technological outputs. This shift can create opportunities and challenges in maintaining effective communication and trust. For example, patients who use VR applications to understand their medical conditions may come to consultations with preformed opinions based on their virtual experiences. Doctors must navigate these situations delicately, ensuring patients' interpretations are accurate and providing reassurance where necessary. This dynamic requires doctors to develop new skills in managing patient expectations and fostering a collaborative approach to care. A collaborative dimension to clinical decision-making challenges the centrality of a doctor's sole clinical judgment and positions technology as a co-decision-maker.

> *"A particularly innovative development will be the creation of an alternative workforce of medical professionals who work in these (immersive technology) markets…they'll be connected to a medical doctor through technology…virtual reality can improve patient understanding by visualizing treatment pathways…but they also risk creating a layer of detachment if we over-rely on them…. it will alter the social dynamics…Earlier, the doctor was viewed as the ultimate authority. Now, Nurses, technicians, and even patients are engaging with AI-powered tools. This will create a democratization of expertise within the hierarchy…Patients themselves are diagnosing using ChatGPT..and to some extent, they often receive a good amount of information...So now, besides diagnosing them as a doctor, my job also includes clarifying the details and justifying why ChatGPT is correct or wrong… maintaining trust and effective communication has become crucial. It's a delicate balance…"* Endocrinologist

Proposition 6a: Informed Enthusiasts actively explore and integrate AI-powered immersive technologies into clinical workflows, viewing them as transformative tools for enhancing patient care and engagement.

Proposition 6b: Informed Enthusiasts engage in self-directed learning and specialized training to stay updated with emerging AI-powered immersive technologies.

Proposition 6c: Informed Enthusiasts take measured risks by experimenting with new immersive features in controlled environments, balancing innovation with patient safety.

Proposition 6d: Informed Enthusiasts view AI-powered immersive technologies as collaborative partners and incorporate system-generated insights into clinical decision-making while retaining final authority.

4.2.4 Technology Champions

Finally, the fourth identity was that doctors stood out as proactive advocates for adopting AI-powered immersive technologies. They already viewed them as indispensable for the future of healthcare. These doctors strongly believed in the transformative potential of such systems to address systemic inefficiencies and improve clinical outcomes.

> *"AI-powered AR VR systems are revolutionizing neurosurgery…we've already started collaborating with startups to bring this to reality. We are ensuring that our hospital pioneers and leads in adopting these advancements for both patient care and resident training…"* Neurosurgeon

They viewed these as tools to facilitate the visualization of predictions that made it easier for doctors to understand and preemptively address potential health issues. This proactive approach contrasts with traditional medical practices, where interventions typically occur after symptoms have manifested. Clinical practitioners must evolve into hybrid professionals who integrate advanced technology with their medical expertise. This evolution augments their clinical decision-making and redefines their role from mere diagnosticians to anticipatory strategists with a data-driven approach. The shift is challenging existing roles and establishing a new paradigm of technology-enhanced healthcare providers. For example, a neurosurgeon who traditionally relied solely on medical skills and basic imaging when introduced to virtual reality (VR) and augmented reality (AR) has to plan and execute surgeries with new tools. Doctors are increasingly taking on roles such as technology mentors, innovation leaders, and data analysts. These roles require a deep understanding of both medical practice and technological applications.

> *"The shift is not just about adopting new tools…It also comes with fundamental changes in the way healthcare is delivered…. So we are seeing specialties like cardiology and oncology are leveraging all this…They use simulations to detect subtle anomalies... They also use it to design patient-specific interventions before clinical symptoms become apparent…"* Surgical Gastroenterologist

They demonstrated extensive familiarity with cutting-edge technologies and often served as trainers and mentors for their peers. Their familiarity with digital tools fuels this enthusiasm towards technology. They look at these novel technologies as their "colleagues" and trust their capabilities to do work at par with them or, in certain aspects, even better than them. Their high willingness to take risks was evident. They advocated for and participated in beta testing of new tools. Even if it were complex clinical scenarios. When discussing clinical autonomy, they were open to relinquishing some control, trusting the AI to enhance care delivery. For technology champions, adopting AI was not merely about improving workflows but pushing the boundaries of what is possible in modern medicine, both in their own practice and for the broader medical community.

> *"We are pushing for AI-powered AR tools that can display a trauma patient's vitals, injuries, and likely internal bleeds as holograms at the bedside. I've seen prototypes that could integrate these features.. It's not just about adopting technology…It's about saving golden minutes and changing how emergencies are managed nationwide… Autonomy isn't only about control. It is also about better outcomes. If I can analyze hundreds of variables and make smarter and faster decisions, why not embrace it? In a trauma case, if the system flags internal bleeding in real-time, it's saving lives, not questioning my expertise."* Physician

These doctors who had exposure to immersive technologies perceived themselves as being at the forefront of medical innovation. They perceived themselves as leaders in the field. They saw themselves as more capable and valuable due to the skill enhancement that the adoption of AI-powered immersive technology brought in. They were well known amongst the group for their initiatives at the forefront of technology. They were viewed as innovators. Technology mentors are responsible for guiding their peers in effectively using immersive tools. They conduct training sessions, share best practices, and help integrate new technologies into clinical workflows. Innovation leaders spearhead the adoption of new technologies, driving research and development initiatives that explore the potential of immersive tools to enhance patient care.

> *"With the introduction of AI and immersive technologies, we might see the rise of new positions like technology mentors and innovation leaders. We might see transformations in traditional hierarchical structures… so one of our senior orthopaedic surgeons regularly conducts workshops. He sometimes himself or sometimes invites guests to demonstrate how AR can enhance surgical precision. We all learn a lot from these workshops.. Even younger residents seek his mentorship as they know that they will have to learn to utilize these technologies confidently…"* Endocrinologist

> *"There are some doctors who feel more innovative and competent through the use of these technologies...it makes you be a part of a wider collaborative environment where we can share knowledge and techniques... even patients nowadays see doctors who are more tech-savvy at a pedestal...you will see these pioneers being called for seminars and conferences. It's a thing now…the industry has started positioning them as leaders in innovative surgical techniques…even hospitals when they implement such systems will prefer doctors with the ability to leverage them…the use of these technologies might set standards in the future…it actually is right now also."* Neurosurgeon

These doctors also mentioned that the rise of immersive technologies has introduced new roles and responsibilities within the healthcare setting. Data analysts specialize in interpreting the vast amounts of data generated by immersive technologies, providing actionable insights that inform clinical decisions and improve outcomes. Roles such as Clinical Technology Specialists, Simulation and Training Specialists, Digital Workflow Coordinator, Virtual Patient Experience Managers, and Digital Twin Modelers are rising. They act as a liaison between healthcare providers and technology developers. They ensure immersive tools are correctly installed, integrated into workflows, and customized to meet clinical requirements.

> *"There are these new roles that are arising, which are obviously essential for effective integration of immersive technologies in healthcare. They will be the people who will ensure that technology is implemented correctly…for example, we see the rise of Digital Coordinators who integrate immersive technology into telemedicine practices.. the role of coordinators is to ensure that virtual consultations are enriched with AR overlays. This allows doctors to better visualize patient conditions remotely.. Data Analysts specializing in immersive technology have also become crucial."* MD Internal Medicine

These technology champions received faster recognition and accolades due to a strong focus on technology in every field. Institutional policies and incentives also heavily influenced these dynamics. For example, hospitals prioritizing technological innovation tried to motivate doctors by creating disparities in opportunities and recognition.

> *"You will notice that doctors will now have to transform from traditional clinical practitioners to hybrid professionals who can seamlessly integrate technology with medical expertise. This has created a new paradigm of technology-enhanced healthcare providers. As more doctors adapt to these changes, the meaning of a doctor will be redefined."* Resident in General Surgery

Proposition 7a: Technology Champions integrate AI-powered immersive technologies into routine and high-stakes clinical practice, driven by their belief in its transformative potential to improve efficiency, precision, and patient outcomes.

Proposition 7b: Technology Champions engage in advanced skill development and serve as mentors for peers. They use immersive technologies to expand their clinical capabilities and institutional leadership roles.

Proposition 7c: Technology Champions exhibit a high tolerance for clinical and technological risk and adopt AI-powered immersive technologies in untested or emergent clinical scenarios.

Proposition 7d: Technology Champions share or delegate decision-making responsibilities to AI-powered immersive systems when such delegation improves accuracy, speed, or outcomes in clinical care.

We developed a theoretical framework based on our findings above (Figure 4). Through constant comparison and iterative reflection between literature, empirical observations, and emerging categories, three core categories emerged that significantly shaped doctors' perceptions. A critical insight from the data was that these three categories influenced perception, which emerged as a mediating variable, a necessary lens through which immersive technologies were evaluated before adoption. A binary classification could not capture technology adoption (adopter vs. non-adopter). Instead, the findings supported a spectrum of adoption, reflecting varying motivations, comfort levels, and identity positions doctors assumed in response to the integration of immersive technologies. This led to the development of four identity-based adopter profiles. Risk-averse adopters emerged as those exhibiting heightened caution, firmly adhering to traditional clinical autonomy, limited technological familiarity, and pronounced concerns regarding legal and ethical ramifications. Pragmatic adopters demonstrated a utilitarian orientation, prioritizing demonstrable efficiency gains and empirical evidence while maintaining a measured approach to risk-taking. Informed Enthusiasts were marked by their proactive engagement with self-directed learning, a generally optimistic outlook toward technological integration, and a willingness to experiment within controlled clinical environments, positioning AI as a collaborative asset rather than a disruptive force. Finally, Technology Champions embodied a visionary and agentic disposition, actively driving institutional change, mentoring peers, and embracing evolving professional boundaries, including partially delegating clinical control to intelligent systems. These categories, though discretely named, were understood as touchpoints on a continuum and not rigid silos. The framework explains how perception acts as a pivotal interpretive filter between ICT, individual and organizational factors, and adoption behaviour. More importantly, it links adoption to reconstructing professional identity in high-stakes domains like healthcare.

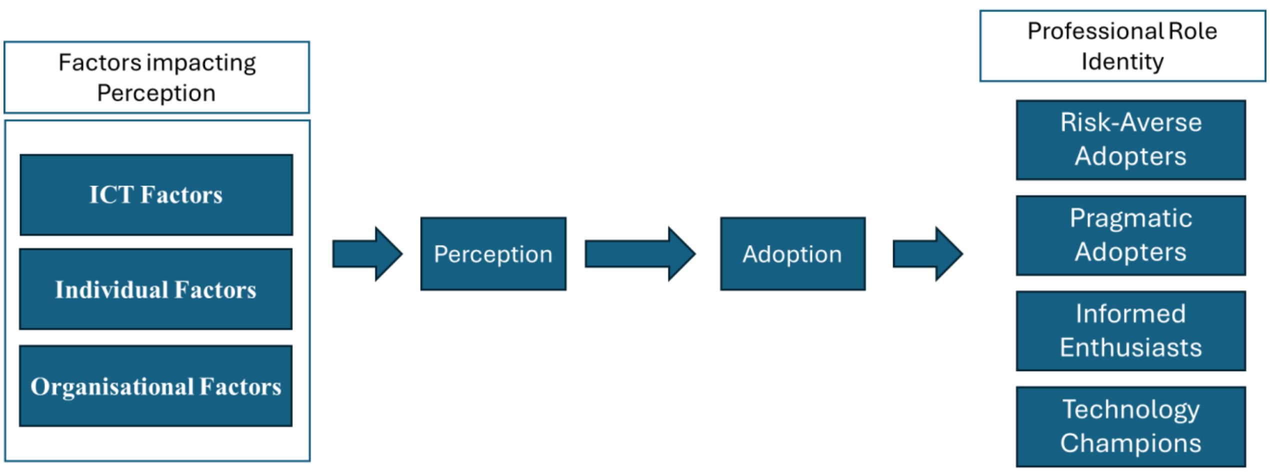

Figure 4. Theoretical Framework

5 Discussion

5.1 Theoretical Contribution

Our study provides novel insights into the adoption and impact of AI-powered immersive technologies in healthcare. Our framework emerges from the identity-intensive character of clinical work, a domain where adoption is not merely about utility or innovation perception but about negotiating one's role, values, and legitimacy in light of disruptive socio-technical systems (Barrett et al., 2012; Chreim et al., 2007; Reay et al., 2017). As immersive technologies blur boundaries between virtual and physical care environments, identity becomes a primary axis of tension and transformation. Our classification is best understood as a symbolic stratification of identity orientations, not replicating or adapting behaviourally oriented adopter categories. Each identity type we identified, Risk-Averse Adopters, Pragmatic Adopters, Informed Enthusiasts, and Technology Champions, reflects a distinct trajectory of identity engagement, resistance, or hybridization in relation to the evolving materiality of clinical work. In this way, we move beyond explaining “who adopts when” and instead examine how professionals reconstitute who they are in technologically reconfigured professional ecologies (Orlikowski & Scott, 2023; Sarker et al., 2019). We contribute to two major areas of IS literature: factors specific to immersive technology that impact their adoption by knowledge workers and the impact of the adoption of immersive technologies on doctors’ identity.

Our first contribution is to the technology adoption literature. With appropriate support and training, adopting technology, particularly among knowledge workers, is not a significant challenge (von Richthofen et al., 2022). The extensive literature on technology adoption thoroughly explores the factors influencing this process. However, adopting AI-powered immersive technologies represents a novel context that challenges existing adoption frameworks in IS literature. Established models such as the TAM (Davis, 1989), the UTAUT (Venkatesh et al., 2003), and DoI (Rogers et al., 2008) have successfully examined technological adoption, use, and interaction. However, the unique characteristics that immersive technologies bring require new investigation (Dubey et al., 2023; Haj-Bolouri, 2023; Suh & Prophet, 2018). Unlike traditional IT systems, AI-powered immersive technologies involve reconfiguring sensory and cognitive workflows (Rubio-Tamayo et al., 2017). The profound transformations these systems bring to the day-to-day workflows of knowledge workers demand a more intricate and nuanced adoption process. They introduce complexities that require fresh theoretical and empirical exploration (Nussipova et al., 2020; Radianti et al., 2020). Current research on adopting AI-powered immersive technologies is predominantly available in medical journals, which focus heavily on clinical outcomes, efficacy, and patient safety (Qu et al., 2022; Yang, 2023). They pay less attention to systemic, organizational, and behavioral dimensions critical for long-term adoption and scalability (Aiello et al., 2023; Suh & Prophet, 2018). IS literature is uniquely equipped to examine the socio-technical dynamics of technology adoption, including organizational readiness, user behavior, and systemic integration (Alsheibani et al., 2018; Beaudry & Pinsonneault, 2005; Mumford, 2006). These dimensions are particularly pertinent as immersive technologies disrupt traditional workflows, redefine professional roles, and introduce new paradigms for collaboration (Haj-Bolouri, 2023; Handa et al., 2012). While earlier IS theories have treated technology primarily as an artifact, immersive technologies extend beyond mere tools to act as intelligent co-decision makers and collaborators (Bjørn et al., 2021; Cummings & Bailenson, 2016). This shift alters users' perceptions, especially in high-stakes environments like healthcare. Interestingly, our study revealed participants' openness to embracing new technologies. However, what stood out was the varying degrees to which individuals were willing to engage with and integrate these technologies. Doctors' adoption of immersive technologies is influenced by factors far more complex than perceived usefulness or ease of use, which are central to traditional theories. Instead, immersive systems' sensory, emotional, and experiential changes fundamentally reshape user engagement and acceptance. Our study highlights context-specific factors of ICTs, individual factors such as perception of social presence and relatability with avatars, and organizational factors like collaboration and skill development opportunities that impact adoption. Traditional adoption theories also simplify the process as a binary state of acceptance or resistance (M. Kumar et al., 2022; Shirish & Batuekueno, 2021). Our findings challenge this dichotomy and highlight that adoption exists in a continuum. Users demonstrate varying degrees of adoption, which are influenced by different factors. While some users may fully integrate these technologies into their workflows, others may adopt them selectively for specific functionalities, such as training or simulation, while resisting their use in live scenarios. We highlight partial adoption to capture these nuanced behaviors. Our study highlights the nuances of selective engagement with certain technological affordances while resisting others. This conceptualization extends the theoretical scope of technology adoption models by emphasizing the iterative, multi-faceted nature of adoption behaviors, driven by diverse motivators and contextual constraints. Existing theories are psychographic and time-sequenced, classifying adopters by the speed of innovation uptake (Rogers et al., 2008). Our typology is identity-centric, grounded in how healthcare professionals negotiate their roles, autonomy, and epistemic authority in response to immersive AI technologies. For instance, Risk-Averse Adopters are not simply late adopters. Their resistance stems from perceived threats to clinical judgment and ethical integrity factors. Adoption decisions are entwined with emotional, cognitive, and symbolic negotiations of professional self-conception. Technology Champions do not just adopt early. They actively reconstruct their role boundaries by embracing hybrid identities such as innovation mentors and clinical technologists. This goes beyond the notion of “Innovators” as risk-takers and venturesome individuals. Their adoption is not just an act of embracing novelty, but a symbolic act of professional reinvention. By capturing this adoption, our research contributes to extending IS adoption frameworks to better address the complexities of immersive technology integration.

Our second contribution is to Professional identity literature. AI-powered immersive technologies require an in-depth examination of their impact on professionals and workflows, particularly in knowledge-intensive fields such as healthcare. (Azhar, 2015; Mir et al., 2022; Strich et al., 2021). Such technologies compel professionals to redefine roles and navigate hybrid identities that integrate traditional expertise with advanced technical fluency (Alahmad & Robert, 2020; Awad & Feinstein, 2020; Cain et al., 2019; Mirbabaie et al., 2021). We highlight the systemic and behavioral shifts these technologies introduce and contribute to a nuanced understanding of professional identity evolution. Our study advances discourse on professional identity transformation by exploring how doctors react to changes in roles due to the adoption of AI-powered immersive technologies in healthcare (Ansari et al., 2023; Y. Chen & Reay, 2021; Goto, 2021). We show how AI-powered immersive technologies initiate deep-seated transformations beyond utility-based adoption models. Instead, identity work is defined as the discursive and cognitive effort to preserve, repair, or redefine one's professional self-concept (Ibarra & Barbulescu, 2010; Kreiner et al., 2009). Building on existing literature on role transformation and reconstruction, we reveal how immersive technologies do more than augment professional practice (Aroles et al., 2021; Chreim et al., 2007).

We also draw on foundational IS frameworks to contextualize the relationship between professional identity and digital engagement. Sociotechnical Systems Theory (STS) provides a well-established lens to understand how technology implementation reshapes material routines and symbolic structures within institutionalized settings (Asatiani et al., 2021; Kronlid et al., 2024). In healthcare, AI-powered immersive technologies function as tools and socio-technical interventions that alter boundaries of accountability, expertise, and presence (Sarker et al., 2019). Our identity-based adopter typology reflects how clinicians respond to these restructurings, not just behaviorally but symbolically, by repositioning their professional self within evolving human-machine configurations. Second, Affordance Theory explains the heterogeneous ways in which immersive systems enable or constrain identity enactment (Faraj & Azad, 2012; Volkoff & Strong, 2017). The perceived affordances of such systems, such as clinical augmentation versus epistemic erosion, are not uniformly realized but filtered through users' identity orientations and risk sensitivities (Leonardi, 2011; Majchrzak & Markus, 2012). Finally, the IT Identity construct (Carter & Grover, 2015) is applied to a high-stakes, professional domain where technology integration implicates efficiency, personalization, and core role legitimacy. Our findings suggest that immersive AI technologies simultaneously serve as identity enablers and threats, depending on whether professionals can align the system's function with their evolving self-definition (Carter et al., 2020). Thus, while Identity Theory serves as our primary analytical lens by foregrounding the interpretive and emotional dimensions of professional transformation, our study also contributes to IS scholarship by showing how identity work is shaped by sociotechnical infrastructures, affordance enactments, and psychological identification with technology, extending the relevance and boundary conditions of these IS frameworks. Adoption is not merely a behavioral decision but also a reflexive process tied to professional self-concept. This is particularly critical in healthcare, where professional identity is both cognitively salient and emotionally and morally embedded. Years of clinical training, experiential wisdom, and ethical commitment create a deeply institutionalized sense of self (Chreim et al., 2007; Reay et al., 2017). The incursion of immersive AI technologies thus represents not just a functional change but an ontological disruption to the profession and who gets to perform it. Professionals must therefore reconstitute their presence, authority, and epistemic legitimacy in settings where digital agents increasingly perform identity-relevant work (Orlikowski & Scott, 2023).

Our study highlights four different identities that emerge based on engagement with technologies differently. Doctors balance their traditional medical expertise by relying on experiential knowledge and training with technical fluency. This shift is particularly pronounced among Technology Champions, who position themselves as pioneers and innovators. Subgroup dynamics emerge as professionals adopt these technologies to varying degrees. These dynamics create informal in-groups and out-groups, reflecting different adoption behaviors. For example, early adopters often collaborate within networks of like-minded peers, driving innovation and actively promoting the integration of immersive technologies into workflows. In contrast, traditionalists resist full-scale adoption and emphasize experiential knowledge and hands-on practice. This demonstrates the creation and recreation of professional identities as they integrate technology in their work. Subgroup dynamics, which allow individuals to engage with technology based on their readiness and preferences, play a critical role in mediating this shift. Doctors continuously indulge in reframing their understanding of work identity and balancing personal relationships with patients while positioning their expertise beyond the reach of technology. Immersive technologies catalyze the emergence of hybrid professional identities. They blend traditional clinical expertise with advanced technological fluency. This transformation enables doctors to view themselves beyond caregivers. They see themselves as innovative leaders and technology mentors who actively contribute to the evolution of the medical and technological ecosystem. By foregrounding identity transformation, our study contributes to IS literature that seeks to complement or even supplant instrumental models with frameworks attentive to symbolic, emotional, and socio-cognitive mechanisms of change (Orlikowski & Scott, 2016; Sarker et al., 2019). We offer a more granular theorization of user heterogeneity, identity salience, and resistance or assimilation behaviors. This, in turn, can inform more contextually sensitive and identity-aware implementation strategies for AI-powered immersive systems in knowledge-intensive domains.

5.2 Practical Contribution

While AI-powered immersive technology holds significant promises for enhancing capabilities, it concurrently introduces novel and unanticipated challenges to the future of knowledge work. To assist organizations in maximizing the benefits of these technologies while mitigating their potential adverse impacts, we articulate actionable insights and practical recommendations derived from our study.

First, our research shows that certain factors are important for accommodating healthcare professionals during the adoption journey. We highlighted that doctors adopted AI-powered immersive technologies to varying degrees based on factors related to ICT, individuals, and organizations.

We highlight ICT factors that positively impact the perception of healthcare professionals. These factors, ranging from advanced surgical planning and data-integrated decision support to personalized training capabilities, highlight the transformative potential of immersive technologies within clinical settings. Notably, the evidence drawn from the Indian healthcare context illustrates that such technologies are not merely theoretical constructs or pilot-stage innovations. Instead, they are actively being deployed in various domains of practice, including surgical rehearsal, diagnostic augmentation, and virtual medical education. This context-specific insight challenges prevailing assumptions about technological maturity and readiness in emerging economies, revealing that India is witnessing early-stage, yet meaningful, integration of immersive technologies into mainstream healthcare workflows. These findings hold important implications for both healthcare organizations and professionals. For organizations, they offer a strategic lens to identify operational domains such as resource-constrained rural hospitals, surgical units, and training academies where immersive technologies can generate measurable improvements in precision, efficiency, and reach. For individual professionals, particularly clinicians, educators, and decision-makers, the findings offer clarity on where these technologies are currently being utilized and where they hold the most significant promise for enhancing practice. Moreover, by mapping real-world use cases, this study provides a foundation for informed decision-making about future investments in infrastructure, training, and policy frameworks needed to scale immersive solutions effectively and ethically.

Doctors’ perceptions of immersive technology are significantly shaped by their experience of social presence, engagement with virtual peers or AI agents, and self-presence identification with their avatars. Design teams should invest in developing authentic, relatable, and customizable avatars and foster environments that emulate real-world clinical interaction to enhance these tools' psychological comfort, trust, and perceived efficacy. Immersive platforms must support nuanced communication features such as eye contact, facial expressions, gesture tracking, and spatial audio to enhance social presence. These cues reduce the perceived distance between users and make collaboration feel authentic and fluid. AI-powered virtual agents should be designed with emotionally intelligent and context-aware interaction capabilities. Agents that mimic human empathy, recall prior interactions, and adapt to the doctor’s level of expertise can impact trust and engagement.

Transitioning from immersive AI as a tool to immersive AI as a knowledge collaborator requires organizations to reframe the doctor-technology relationship. Organizational narratives and policies must evolve to communicate that AI is not a replacement but a cognitive partner capable of augmenting clinical insight. We highlight the need for clarity regarding ambiguous situations of errors or adverse outcomes. Organizations need to define whether responsibility lies with the knowledge worker, the technology developer, or the deploying institution. They will have to delineate roles and responsibilities through contractual agreements. Regulatory bodies might have to intervene and enforce explainability standards in AI systems. This will ensure that decisions made by technology can be traced and understood by human operators. Moreover, organizations will have to invest in compliance with emerging legal standards regarding accountability, data privacy, and system transparency. They will likely have to develop legal frameworks, ethical guidelines, and oversight mechanisms to ensure routine audits of decision-making systems.

Second, our study provides implications for organizations to design tailored programs to address their diverse identities and professional needs for a smoother, seamless adoption into their practice. Risk-averse adopters, for instance, benefit from structured demonstrations and extended practice sessions to build confidence in technology use gradually. We provide insights on how knowledge workers can be provided with flexible learning paths. After understanding their unique identity characteristics, needs, and barriers, organizations can provide support to ensure inclusivity across varying levels of technological familiarity. These programs could illustrate how immersive tools complement their expertise rather than replace it. Training can also be designed to cater to the unique skill sets of knowledge workers. They could incorporate flexibility to adjust difficulty levels, pacing, and content based on individual progress and feedback. Employers can benefit from adaptive technologies that assess a knowledge worker’s motivations and proficiency and dynamically offer tailored scenarios.

The adoption of immersive technologies can present challenges, particularly for novice users. Even when the underlying activities facilitated by the technology remain consistent, the value derived varies across users. Their unique experiences and personality traits influence this. We highlight the need for organizations to design frameworks that recognize and leverage diverse adoption behaviors. Customized organizational response and strategic alignment might facilitate a smoother transition during organizational change initiated by technological integration. They should consider integrating immersive technologies into their operations and prioritizing the end-user experience tailored to the target audience. This could involve creating opportunities for technology champion employees to lead pilot projects, mentoring programs, and cross-disciplinary initiatives. This could also include providing structured pathways for other professionals to upskill and integrate technology at their own pace. It would prepare the workforce to collectively adapt to technological advancements and enhance organizational resilience and effectiveness. Organizations may need to assess the technology-enabled interactions and the mental responses stimulated by these activities. Organizations must address these nuances and deploy user-centred strategies before full-scale implementation. Below, we suggest how doctors from different identity groups can be motivated to adopt AI-powered immersive technologies.

Table 1. Customized Planning for Different Identities

Identity	Customized Approach for better adoption
Risk-Averse Adopters	Confidence Building: foundational training Hands-On Demonstrations: live demonstrations and guided practice sessions Legal and Ethical Training: clarity on accountability and legal safeguards Gradual Exposure: simpler applications first Peer Support: Involve trusted senior colleagues or mentors
Pragmatic Adopters	Efficiency-Focused Training: Emphasize workflow efficiency and patient outcomes Scenario-Based Learning: tailored to specific clinical scenarios Pilot Programs: test technologies in controlled settings before integrating Streamlined Content: Intuitive systems with minimal learning curves
Informed Enthusiasts	Advanced Skill Development: specialized modules on advanced applications Innovative Applications: cutting-edge use cases Collaborative Training: cross-disciplinary collaboration Leadership Roles: mentoring and championing technology adoption
Technology Champions	Pioneering Opportunities: Involve in pilot programs, R&D projects, and beta testing Expert-Level Training: deep dives into technical aspects of customization and optimization Thought Leadership Development: platforms to share their expertise Collaboration and Networking: Facilitate connections with industry leaders, startups, and research institutions

5.3 Limitations and Directions for Future Research

While this study offers novel insights into adopting AI-powered immersive technologies and their impact on professional identity within healthcare, several limitations must be acknowledged. First, our research is situated within the context of Indian doctors, which, while offering rich cultural and systemic insights, may limit the generalizability of findings to other healthcare systems with differing technological infrastructures, regulatory frameworks, and cultural expectations. Future research could expand this investigation to cross-national comparative studies to examine how immersive technology adoption and identity transformation differ globally across healthcare systems. Second, the study's qualitative design and reliance on self-reported data inherently carry the risk of response bias and subjective interpretation. Although we employed grounded theory's rigorous coding techniques and constant comparison to ensure analytic depth and credibility, the emergent theory remains grounded in a specific empirical context. Future studies may benefit from triangulating qualitative data with quantitative methods, such as survey-based assessments or experimental designs, to test the generalizability and robustness of the proposed framework. Third, although we identified identity-based adopter profiles (e.g., Risk-Averse Adopters, Pragmatic Adopters, Informed Enthusiasts, and Technology Champions), these identities are not static. Our study did not track changes in identity over time. A promising avenue for future research is a longitudinal exploration of how professional identities evolve as immersive technologies become more embedded in routine clinical practice. Finally, this study primarily focused on the perspectives of doctors. However, immersive technologies affect a broader network of healthcare professionals, including nurses, medical technologists, and administrators. Future studies could adopt a multi-stakeholder perspective, analysing how identities, collaboration, and adoption patterns vary across professional hierarchies and domains within the healthcare ecosystem. By addressing these limitations, future research can build upon our findings to further develop a robust and context-sensitive understanding of immersive technology adoption and its implications for professional identity in healthcare.

6 Conclusion

The widespread use of mobile phones and computers has rendered traditional technology adoption relatively unchallenging for organizations. However, the advent of AI-powered immersive technologies in the workplace has instigated transformative changes, particularly in knowledge-intensive work. Unlike conventional tools, these technologies are intelligent, capable of learning, improving over time, and fundamentally altering work delivery's sensory and cognitive dimensions. We identify factors specific to immersive technology that impact the perception of these technologies, influencing the adoption of AI-powered immersive technologies. These factors encompass the dimensions of ICT, individual users, and organizational contexts. ICT-related factors comprise advanced capabilities in surgical planning, seamless integration of real-time clinical data, and immersive training interventions. On the individual level, the perceived sense of social presence within virtual environments emerges as a pivotal element shaping user engagement and acceptance. At the organizational level, designing collaborative frameworks, establishing precise accountability mechanisms, and facilitating skill enhancement initiatives collectively contribute to fostering adoption within healthcare settings. Our study identifies that while knowledge workers generally exhibit openness to adopting such technologies, their engagement occurs at varying degrees. This adoption impacts their professional identities, with differentiations demonstrated through key characteristics, including the extent to which doctors integrated AI-powered immersive technology into clinical practice, their approach to training and skill acquisition in this domain, their propensity to take risks in utilizing these technologies, and their decision-making processes when engaging with immersive tools. We conceptualize these identities as: Risk-Averse Adopters, Pragmatic Adopters, Informed Enthusiasts, and Technology Champions. Knowledge workers dynamically shape their deployment of AI-powered immersive technologies across different facets of their professional practice. Unlike earlier paradigms, where professionals reconstructed their professional identity through iterative interaction and integration with emerging technologies, the limited interactive scope of AI-powered immersive systems introduces distinctive challenges. These systems complicate knowledge of workers' efforts to negotiate and maintain their professional identity by assuming autonomous roles in decision-making. Our findings underscore how substitutive AI-powered immersive technologies significantly reshape employees' professional identities, influencing their workplace roles and perceptions of value. This study contributes theoretically and practically by illustrating the varying degrees of technological adoption and their implications for professional identity. It provides a foundational framework for future research exploring how intelligent immersive technologies impact the evolving identities of knowledge workers.

Declaration of AI

During the preparation of this work, the author(s) used ChatGPT4.0 to edit and translate certain sections of the manuscript to enhance the language..

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Appendix A: Interview Guide

Table A1. Interview Guide

1	Perceptions Toward Technology	• What comes to your mind when you hear the term 'immersive technology' in a clinical context • Have you seen or used AI and immersive tools supporting diagnosis, surgery planning, or patient education? What was your impression of their usefulness? • What features or aspects make you feel confident or hesitant about using such tools? • How well do these technologies fit into your work processes? • What motivates or discourages you personally from adopting new technologies? • Does your hospital or clinic encourage innovation or experimentation with new technologies? What kind of support or resistance do you see around you?
2	Impact on Professional Identity	• What was your initial impression of these technologies? Has it changed over time? • Do you think using AI and immersive technology changes what it means to be a doctor? • How comfortable are you making clinical decisions based on technology-generated insights? • Have you ever disagreed with an AI recommendation? If yes, how did you handle it? • Do you see yourself differently compared to colleagues who are more/less engaged with technology

Appendix B: Interview Participant List

Table B1. List of Participants of In-depth Interview

Number	Name	Expertise
1	Dr. S Prakash	Chief Surgeon
2	Dr. S Anand	Surgeon
3	Dr T Desai	Chief Radiologist
4	Dr. V Rao	Oncologist
5	Dr. O Lakhani	Endocrinologist
6	Dr. A Naik	Cardiologist
7	Dr. S Kirti	Resident in General Surgery
8	Dr D Govil	Surgical Gastroenterologist
9	Dr. B Menon	Head of Medical Education
10	M Sirdesai	Director in medical startups, Founder
11	Dr R Shah	Senior Consultant
12	Dr. M Selvaraj	Anesthesiologist and Critical care physician
13	Dr.A Khemka	Orthopaedic Surgeon
14	Dr. S Bajaj	MD Internal Medicine
15	Dr. S Saha	Neonatologist
16	Dr A Bansal	Pulmonologist
17	Dr. S Gupta	Dermatologist
18	Dr. A Dash	Neurosurgeon
19	Dr H.S. Malhotra	Physician