Others

An umbrella review factors determining digital technology acceptance among older people
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Purpose A growing body of review studies have examined the determinants of digital technology acceptance in older adults [1, 2]; however, findings across reviews remain fragmented and sometimes inconsistent due to variations in theory use, methodology, and technological context. To address this gap, this umbrella review synthesizes evidence from existing systematic reviews and meta-analyses to provide an integrated understanding of the key factors shaping technology acceptance among older people. The review further examines the theoretical foundations of prior research and explores whether determinants differ across technology types, particularly between AI-based and conventional digital technologies. **Method** Following the Preferred Reporting Items for Overviews of Reviews (PRIOR) guidelines [3], six major databases (PubMed, Scopus, Web of Science, EBSCOhost, IEEE Xplore, and Epistemonikos) were systematically searched. From 4,399 records, 32 eligible systematic reviews encompassing 995 primary empirical studies were included. A hierarchical framework was developed to organize the extracted determinants, and a meta-analytic synthesis was conducted to estimate effect sizes predictors of acceptance. **Results and discussion** More than half of the included reviews did not explicitly adopt a theoretical framework; among those that did, a limited set of information systems models dominated. Across reviews, 55 distinct factors influencing older adults' technology acceptance were identified and classified into five domains: individual characteristics, technology attributes, environmental conditions, social and cultural influences, and acceptance-related processes (Figure 1). Meta-analytic results revealed significant effects for eight core determinants: facilitating conditions, perceived usefulness, perceived ease of use, social influence, anxiety, attitudes, prior experience, and hedonic value. Importantly, the strength and configuration of these effects differed between AI-enabled technologies and non-AI systems (e.g., anthropomorphic design and environmental factors), indicating technology-specific acceptance mechanisms. This umbrella review highlights substantial conceptual and methodological gaps in the current evidence base, particularly the limited integration of aging-related theory and inconsistent operationalization of acceptance constructs. The findings underscore the need for theory-driven, context-aware, and longitudinal research to better capture the dynamic nature of older adults' technology adoption processes. For gerontechnology design and implementation, the findings support an inclusive, user-centered approach that delivers tailored solutions across domains such as healthcare, education, finance, and entertainment. By moving beyond ageist assumptions and recognizing older adults' diverse capabilities, technology can empower users rather than merely compensate for physical limitations. Adaptable frameworks, equitable access initiatives, and sustained training and technical support are essential to promote long-term adoption.

References

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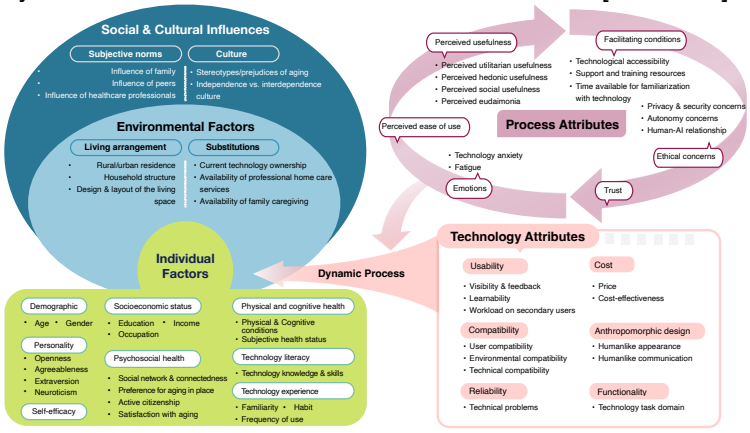

Figure 1 Factors determining digital technology acceptance among older people