

DIGITAL INCLUSION OF URBAN ELDERLY THROUGH THE LENS OF ALGORITHMIC IMAGINARY

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Digitalization of present-day cities has exacerbated the problem of digital inclusion for elderly populations. Digital health communication practices among elderly urban residents is the most significant aspect of this problem, bearing direct relevance to their health and longevity. Policies supporting the digital well-being of elderly urban dwellers require more than simply developing media use skills. They require understanding how older adults perceive and interact with algorithmic systems shaping their information environments. Within the frameworks of deep mediatization and algorithmic imaginary theories, digital literacy is conceptualized as users' capacity to critically reflect on their embeddedness in socio-technical ecosystems. The Chinese case illustrates how intergenerational relationships, cultural traditions, and local community support networks shape the ways older adults interact with health information in digital environments. Sustainable approaches to bridging the digital divide must account for these complex, culturally embedded mechanisms. Understanding the psychological pathways linking digital literacy to actual communication behavior is essential for comprehending the particulars of digital participation among aging urban populations.

Keywords: digital inclusion; deep mediatization; algorithmic imaginary; digital health communication; urban digitalization; digital literacy; intergenerational relationships.

In an era where digital technology is profoundly reshaping urban landscapes, sustainability pertains not only to the environment and economy but also to social inclusion. A digital city that fails to enable the equal integration of its senior inhabitants cannot achieve genuine sustainable development. One critical aspect of social inclusion concerns the health information risks faced by older adults within algorithmically curated information environments. This is a common digital media literacy challenge that necessitates attention amid the dual transitions of urbanization and digitalization.

While digital skills are of obvious importance for social inclusion in the contemporary world, a fundamental question remains crucial for digital inclusion in urban areas: through what social and psychological processes does digital literacy ultimately influence an individual's digital communication behavior? In other words, what are the psychological mechanisms connecting digital communication skills and actions? Exploring this universal issue requires delving into specific social and cultural contexts.

The social group of urban residents that falls in risk of social exclusion is the elderly. Although the criteria for classifying a population into this category vary across countries, it can be agreed that the common characteristic of this

group is that they are digital migrants. Their childhood and adolescence occurred in the pre-digital era. Furthermore, since urban areas, especially large metropolitan areas, are more intensively digitally transforming than rural areas, the challenge of mastering digital technologies during the later-life socialization period may be more tangible for them. The experience of the pandemic has highlighted one more aspect of this problem – how digital media literacy of older adults is related to their ability to discern and make use of health information.

The theoretical framework of deep mediatization describes a societal condition where digital media and their infrastructures are increasingly driven by algorithms that have permeated all spheres of social life. In this deeply mediatized environment, characterized by differentiation, connectivity, and datafication, the media manifold – the complex, interconnected, algorithm-driven ecosystem of platforms and infrastructures- becomes the primary context for communication and information access [1, p. 16]. Consequently, digital media literacy is no longer confined to operational skills for processing information or using a single set of media. Today's media literacy has already evolved to include the competence to critically reflect one's embeddedness into an entire socio-technical ecosystem. A pivotal component of this advanced literacy is the algorithmic imaginary – the ways individuals perceive, make sense of, and imaginatively engage with the often opaque algorithmic systems that curate their information environments. Algorithmic imaginary refers to «ways of thinking about what algorithms are, what they should be, how they function and what these imaginations in turn make possible» [2, p. 10–11]. Algorithmic imaginary is not just technical competencies. It is perceptions that shape people's expectations and behavior when interacting with algorithmic systems. These perceptions influence how people use platforms, what they trust or avoid, and how they organize their communication practices. The term coined by T. Bucher, is an attempt to conceptualize the influence of shared visions or representations on social practices and behavior. People's beliefs and affects about algorithms are not just passive responses, but active impetus that influence how algorithms are developed. Thus, users' interactions with algorithms are viewed from the perspective of social construction of technological systems. This perspective appears promising for studying vulnerable populations such as older adults, whose algorithmic imagination is largely shaped not only by individual learning but also by their immediate social environment.

For elderly populations, digital health communication presents a critical research focus. Given that older adults often struggle with digital communication, examining how they navigate this vulnerability should take into account whether and how family and community support networks influence the aforementioned psychological pathway. Besides, the digital

landscape significantly shapes older adults' digital health communication practices. This landscape is best examined at the national level, where national media systems harmonize global, regional, and micro-social conditions of mediated communication through state policies and cultural contexts.

Studies on digital literacy issues among older adults confirm that «intergenerational family support is a key factor in older adults' digital media use» [3]. Community-based digital literacy programs and peer support play a crucial role in sustaining digital engagement among older adults as well [4]. Examining the Chinese case may reveal pathways to addressing elderly digital inclusion in urban areas. Such pathways should extend beyond purely technological or policy-driven solutions. They should take into account complex, culturally embedded mechanisms of older adults' digital communication rooted in intergenerational relationships, cultural traditions and community support and users' own sense-making processes. Sustainable approaches to bridging the digital divide for aging urban populations need to recognize these social and cognitive dimensions of their digital well-being.

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