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Original Article

Beyond Access: Digital Skills and Benefits in Later Life

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Abstract
The article investigates the relationship between functional autonomy, socio-economic conditions, and the use of digital technologies for health monitoring among individuals aged 65 and over. Framed within a bio-psycho-social perspective and informed by the multi-level theory of the digital divide, the study moves beyond a purely infrastructural understanding of digital inclusion. It explores how access, digital competences, and socially differentiated benefits interact in shaping technological adoption in later life. Empirical data were collected through a survey conducted within the VISAD project (VivereMeglio: Soluzioni Innovative per l'Assistenza Sanitaria a Domicilio) in Bari, Italy, in 2025, involving 168 older adults recruited in a clinical setting. However, the sample is drawn from a clinical setting and includes only individuals who already own a smartphone, which may limit the generalisability of the findings. The hypotheses are tested using only bivariate correlations and should therefore be interpreted with caution.The findings indicate that while internet access and ownership of mobile devices are nearly universal among respondents, digital competences remain uneven and largely confined to basic communicative and informational uses. Most notably, the adoption of digital tools for health monitoring is limited and tends to be concentrated among individuals with higher levels of functional autonomy and better self-perceived health. These results suggest that digital health technologies do not automatically compensate for frailty or vulnerability; rather, they are more readily adopted by those already endowed with personal, cultural, and relational resources. The study highlights the risk of "apparent inclusion", whereby infrastructural access coexists with persistent inequalities in competences and outcomes, reinforcing rather than reducing stratification in ageing populations.

Keywords: *older adults; autonomy; accessibility; digital divide; digital literacy; ICT.*

1. National and International Context and Debate

In Italy, as in the rest of Europe, the proportion of individuals aged 65 and over in the total population has been steadily increasing. This trend entails higher levels of dependency,

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which will, in the medium term, require increased public expenditure – already substantial – and structural interventions to support older adults in need of care.

The growth in the older population is driven by improved living conditions and the consequent rise in life expectancy. In the early 2000s, individuals aged 65 and over accounted for approximately 16% of the total population; just twenty years later, this figure had increased by five percentage points. Despite some variation among European countries, no nation is exempt from this demographic shift. On average, 21.3% of EU citizens are aged 65 or older (Openpolis, 2024).

The old-age index – that is, the ratio between the population aged 65 and over and the younger population (0–14 years) – currently stands at approximately 173% and is projected to reach a record level of 280% by 2065. Similarly, the old-age dependency ratio, which measures the proportion of individuals aged 65+ relative to the working-age population (15–64 years), is currently 37.5% and is expected to rise to 61% by 2065 (Cappellato et al., 2021).

Given the extension of life expectancy, it is evident that the definition of "older adult" encompasses a broad age range, particularly when considering the heterogeneity of needs shaped by biological, psychological, socio-economic, relational, and participatory conditions.

Over the past thirty years, the social role of older adults has undergone significant transformation and continues to evolve. While Peter Laslett (1996) classified individuals over 65 under the label of the "third age", the current social and demographic context – marked by profound structural changes – requires a more differentiated categorization: young-old (65–74 years), middle-old (75–84 years), and oldest-old (85 years and over).

Against this backdrop, the present article examines the relationship between functional autonomy, socio-economic conditions, and the use of digital technologies for health monitoring among individuals aged 65 and over. The study is situated within the debate on the multi-level digital divide, moving beyond a purely infrastructural conception of access to explore digital competences, actual uses, and socially differentiated benefits. Data were collected through a survey conducted within the project "VivereMeglio: Soluzioni Innovative per l'Assistenza Sanitaria a Domicilio" (VISAD), carried out in Bari (Italy) in 2025.

It thus becomes crucial to understand whether and to what extent digital technologies function as tools of empowerment and facilitators of autonomy, or whether their use is socially selective and stratified. Accordingly, the first research question investigates which socio-demographic, socio-economic, and health-related factors influence the adoption of digital tools for health monitoring. The second explores the relationship between perceived functional autonomy and the use of digital health technologies, assessing whether such devices act as autonomy-enhancing facilitators or are predominantly adopted by individuals who are already highly self-sufficient.

In line with these questions, the following hypotheses were formulated and tested: (a) higher levels of functional autonomy are associated with a greater likelihood of using digital technologies for health monitoring; (b) higher socio-economic status and educational attainment are correlated with more structured digital competences and, consequently, with a greater propensity to adopt such tools.

2. Theoretical Framework. The Multi-Level Digital Divide in Ageing: Access, Skills, and Benefits

The concept of the digital divide emerged in the 1990s to describe inequalities in access to information and communication technologies (ICTs). Early research primarily focused on the binary distinction between those who had access to digital technologies and those who did not, framing the issue as a matter of infrastructural availability. However, this perspective soon proved insufficient to capture the complexity of digital inequalities in increasingly mediated societies.

A significant theoretical advancement was introduced by Van Dijk (2005), who conceptualized the digital divide as a multi-layered phenomenon involving not only access but also skills, usage, and outcomes. According to this approach, inequalities in digital engagement reflect broader social stratification processes, as individuals' positions in terms of education, income, and social capital shape their ability to benefit from digital technologies. In this sense, the digital divide is not merely a technological issue but a deeply social one.

Building on this perspective, Hargittai (2002) introduced the concept of the *second-level digital divide*, emphasizing differences in digital skills and competences among users with similar levels of access. This shift marked a transition from a focus on access to a more nuanced understanding of how individuals use digital technologies and what they are able to achieve through them. Subsequent studies have further refined this framework by examining the quality and diversity of online activities, highlighting how digital engagement varies significantly across social groups.

Van Deursen and Van Dijk (2011, 2014) expanded this line of inquiry by distinguishing between different types of digital skills—operational, formal, informational, and strategic—and demonstrating how these are unevenly distributed across populations. Their work underscores the existence of a *usage gap*, whereby individuals differ not only in their access to technologies but also in their capacity to use them effectively and to translate digital engagement into tangible benefits. This perspective is particularly relevant for understanding inequalities in contexts such as e-health, where the ability to navigate information, evaluate sources, and make informed decisions is crucial.

In parallel, Selwyn (2004) proposed a critical approach to digital exclusion, arguing that inclusion should not be equated with mere access or connectivity. Rather, it is necessary to consider the broader socio-cultural and institutional conditions that shape individuals' engagement with digital technologies. From this viewpoint, digital participation is always situated and contingent, and it may reproduce or even reinforce existing inequalities.

These theoretical developments have been particularly influential in research on ageing and digital media. Older adults have often been identified as a group at risk of digital exclusion, not only because of lower levels of access but also due to differences in skills, motivations, and patterns of use. Friemel (2016), for example, shows that internet adoption in later life is strongly influenced by socio-demographic variables such as education, income, and prior occupational experiences. Similarly, Quan-Haase et al. (2018) highlight that older users tend to engage with digital technologies in more selective ways, often focusing on communication and information-seeking while avoiding more complex or interactive practices.

Research on technology acceptance among older adults (Mitzner et al., 2010) further demonstrates that adoption is shaped by perceived usefulness, ease of use, and compatibility

with everyday routines. These factors are closely linked to broader issues of digital literacy and confidence, which in turn affect the extent to which individuals are able to benefit from digital services. Institutional data (e.g., Eurostat; ISTAT ICT reports) consistently show that, despite increasing levels of connectivity, older populations remain disadvantaged in terms of advanced digital skills and diversified uses, confirming the persistence of structural inequalities.

Within this framework, the diffusion of digital health technologies represents a particularly significant field of analysis. E-health tools—such as online medical information, telemedicine platforms, and health apps—are often presented as instruments capable of enhancing access to care, improving patient empowerment, and promoting more efficient healthcare systems. However, their effective use requires a combination of digital and health literacy, as well as the ability to critically evaluate information and navigate complex digital environments.

From a sociological perspective, this raises important questions about the relationship between technological innovation and social inequality. Rather than automatically reducing disparities, digital health technologies may contribute to their reconfiguration, privileging those who possess the necessary resources to use them effectively. This aligns with broader theories of cumulative advantage, according to which existing inequalities tend to be reinforced over time through differential access to opportunities and resources.

In this study, we build on these theoretical contributions to propose the concept of *apparent inclusion*. This notion refers to a condition in which individuals are formally included in the digital environment—having access to devices and connectivity—yet remain limited in their ability to use technologies in meaningful and autonomous ways. Apparent inclusion thus highlights the gap between access and effective participation, particularly in contexts where digital engagement is assumed to be widespread.

While this concept is consistent with existing frameworks on digital exclusion (Selwyn, 2004), second-level digital divide (Hargittai, 2002), and usage gap (Van Deursen & Van Dijk, 2011, 2014), it aims to provide a more specific analytical lens for capturing the ambivalent forms of inclusion observed among older adults. In particular, it emphasizes the coexistence of presence and limitation, familiarity and dependency, access and vulnerability.

By focusing on these dynamics, the present study contributes to a more nuanced understanding of digital inequality in later life, moving beyond dichotomous distinctions between inclusion and exclusion. Instead, it highlights the need to consider the quality, depth, and outcomes of digital engagement, as well as the social and institutional contexts in which it takes place.

3. Methodological Framework

3.1 The VISAD Project

The VISAD project (*VivereMeglio: Soluzioni Innovative per l'Assistenza Sanitaria a Domicilio*), proposed and implemented by the University of Bari Aldo Moro (UNIBA) and funded by the Sant'Anna School of Advanced Studies in Pisa, represents a strategic and multidisciplinary initiative designed to address the complex needs of the ageing population. The project integrates clinical, technological, psychological, and sociological expertise.

The primary objective of VISAD is to improve health management among older adults and individuals with chronic conditions through the integrated use of wearable technologies, smartphone and smartwatch applications, and artificial intelligence algorithms. The project

adopts a bio-psycho-social model, acknowledging the interaction between biological factors (monitored through wearable sensors), psychological well-being (proactively supported by AI algorithms tracking cognitive and behavioural patterns), and the individual's social context (examined through the analysis of socio-economic barriers to technological adoption).

The overall research project, approved by the Ethics Committee of the University of Bari, involved four distinct research teams.

The medical team was responsible for participant recruitment and for administering a questionnaire on personal habits and the consumption of medications, over-the-counter drugs, and natural products for the management of chronic conditions.

The computer science team designed, developed, and tested a smartphone application, subsequently installing it on participants' devices and collecting the planned data: step counts, physical activity levels (stationary, walking, running, cycling, in a vehicle), calories burned, and air quality assessment based on geolocation data.

The psychology team administered three standardized tests: the Mini-Mental State Examination (MMSE), to assess cognitive functioning; the Trail Making Test A–B, to evaluate processing capacity; and the Frontal Assessment Battery (FAB), to measure executive functions.

Finally, the sociology team designed and administered a specific survey questionnaire, conducted concurrently with the activities of the other research units.

Between April and August 2025, a total of 168 participants were recruited from hospital wards and outpatient services at the Baccelli Clinic (Department of Precision and Regenerative Medicine and Ionian Area – DiMePRe-J) of the Policlinico of Bari.

Recruitment criteria included residence in the Apulia region, age over 65, ownership of a smartphone, and – according to psychological assessment—cognitive reserve, executive functioning, and attention levels within the normal range.

Although the sample size may be considered a methodological limitation, it should be noted that participants were recruited within a hospital setting. As such, the sample offers a heterogeneous profile in terms of socio-demographic characteristics (age, education, income), lifestyles, health perception, and social and community engagement.

The type of survey and sample size cannot be generalized to the entire population. However, the data represent a cross-section of the population residing in the Puglia Region, consisting of people over 65 years of age and with chronic conditions requiring hospitalization or periodic medical checkups.

4.2 The Survey

The sociology research team developed a dedicated questionnaire aimed at demonstrating that successful ageing can only be achieved through a bio-psycho-social approach. The broader conclusion emerging from the project is that community resilience and well-being depend on the valorization and care of local social contexts, while ICTs play a crucial role in supporting data collection, monitoring processes, and the dissemination of information necessary to enhance individual empowerment and implement effective policies. Population health, therefore, cannot be separated from its natural and social environment, and modern technologies represent an essential tool for promoting well-being and improving the quality of socio-health services. The use of the internet and greater awareness

of one's health conditions may foster new policy measures aimed at increasing the usability and accessibility of local services, both offline and online.

The primary aim of the survey was to identify the factors that contribute to active ageing. These included socio-economic status (SES), social capital and relational networks, cultural consumption, and lifestyle patterns. Particular attention was devoted to personal autonomy and loneliness, considering digital technologies as potential facilitators for improving health conditions (starting from health parameter monitoring), counteracting social isolation, and ensuring individual independence within one's living environment.

Assessing the use of digital technologies among individuals aged 65 and over thus became an opportunity to reflect on the impact of internet-connected electronic devices on the ageing process and their potential contribution to active and successful ageing.

The research instrument consisted of a structured multiple-choice questionnaire (with only one open-ended question), organized into the following sections:

- Section A. Socio-demographic data (9 questions)
- Section B. Socio-economic status (7 questions)
- Section C. Status, social capital, and relational networks (1 question)
- Section D. Status, cultural consumption, and lifestyles (10 questions)
- Section E. Digital technologies and everyday life (10 questions)
- Section F. Autonomy, independent living, and loneliness (6 questions)

The questionnaire, approved by the Ethics Committee of the University of Bari, was administered to participants after informed consent had been obtained and formally recorded by the project's Principal Investigator.

4.3 Sample Description

The sample is almost evenly distributed by gender (51.8% men and 48.2% women). The mean age is 72.6 years (range 65–89; standard deviation = 5.9). When divided into age groups, 36.9% are under 70 years old, 33.3% are between 70 and 75, and 29.8% are over 75.

Regarding marital status, 79.8% are married, 6.5% are single (never married), 4.8% are separated or divorced, and approximately 9% are widowed.

On average, respondents have two children (58.3%). About 26.8% report having more than two children, while 10% have no children or only one child (4.8%).

Sixty-six percent of the sample live with a spouse, while 14.3% live alone. Nineteen percent report living with at least one child.

Educational attainment shows a relatively upward distribution: 42% have a low level of education, 36.9% hold a high school diploma, and approximately 20% have obtained a university degree or postgraduate qualification.

The most frequent previous occupations include skilled workers (22.6%), specialized technical professions (20.2%), public school teachers at various levels (11.9%), and law enforcement officers (8.9%). Among female respondents, 9.5% report having been homemakers, while unemployed or inactive individuals account for only 1.2%.

In terms of income, approximately 50% report a monthly income below €2,000, 29% between €2,000 and €3,000, and 20% above €3,000.

From the initial frequency distributions, it emerges that respondents display two protective factors: relatively stable socio-economic conditions and satisfactory social networks. Indeed, 77.4% report not perceiving feelings of loneliness (with 13.7% experiencing loneliness only partially).

Table 1. Socio-Economic Status (SES) Index and Social Network Index

		Global Network Size Index	Upper Global Network Size Index	Lower Network Size Index	Upper Network Size Index	Upper Weighted Network Size Index	Lower Weighted Network Size Index
Socio-Economic Status (SES) Index	Pearson Correlation	,209(**)	,343(**)	,011	,219(**)	,432(**)	0,0111
	Sig. (2-tailed)	*0,005*	*0,000*	*0,889*	*0,004*	*0,000*	*0,886*
	N	*168*	*168*	*168*	*168*	*168*	*168*

Indeed, by cross-tabulating the two composite indices presented in Table 1—namely the Socio-Economic Status (SES) Index and the Social Network Index—it emerges that socio-economic well-being and a broad and cohesive social network are significant determinants of individuals' perceived quality of life, as further demonstrated in Table 2. The data demonstrate that there is a substantial correlation (r=0.177) between SES and the perception of one's health quality.

Table 2. Socio-Economic Status (SES) Index and Self-Perceived Health Quality

		How would you rate your overall health status?
Socio-Economic Status (SES) Index	Pearson Correlation	0,177(**)
	Sig. (2-tailed)	*0,022*
	N	*168*

4.4 The Autonomy Index

The most frequently reported chronic conditions among respondents primarily concern cardiovascular diseases (59.1%), immunological disorders (21.9%), and metabolic diseases (20.4%). Since each participant could report one or more conditions, these pathologies often occur in comorbidity with respiratory diseases (10.9%), digestive disorders (8%), and neurological conditions (5.8%).

From a strictly phenomenological perspective, it is possible to examine the relationship between the self and pathological conditions. As shown in Table 3, self-perceived health quality emerges as a complex indicator, profoundly and differentially influenced by the type of pathology—or the combination of multiple conditions. Not all chronic illnesses carry the

same weight in shaping perceived well-being, and understanding these differences requires consideration of three main insights.

The first concerns pathologies with visible external manifestations (such as skin diseases) and more pervasive conditions (such as digestive and immunological disorders), which appear to exert a stronger influence on perceived health quality.

The second insight highlights the predominance of the response category "fair" (discreta), which may indicate a process of adaptation and acceptance of chronic conditions. Despite the significance of the illness, living with disease becomes part of a "new normality," leading individuals to redefine their needs compared to the onset of the condition. In this context, the focus shifts away from cure—often unrealistic in the case of chronic illness—toward maintaining functionality, managing symptoms, and preserving the best possible quality of life within the limits imposed by the condition. This pattern is particularly evident in cases involving respiratory, digestive, and metabolic diseases.

Finally, the most emblematic case concerns individuals with cardiovascular conditions. Although such conditions are potentially life-threatening – due, for example, to the high risk of ischemic events—they may coexist with a relatively good (or even optimal) perception of health. This phenomenon suggests that the perceived effectiveness of therapies, symptom control, and trust in the healthcare system can positively shape the subjective experience of illness, even in the presence of a clinically severe diagnosis.

Table 3. Self-Perceived Health Quality by Type of Chronic Disease (System or Organ Involved)

	D10. How would you rate your overall health status?					
	Excellent	Good	Fair	Poor	Very poor	Subtotal
	Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
A9.1 Chronic conditions: neurological system	0,0%	37,5%	37,5%	25,0%	0,0%	100,0%
A9.2 Chronic conditions: sensory system and voice	0,0%	40,0%	60,0%	0,0%	0,0%	100,0%
A9.3 Chronic conditions: cardiovascular system	9,9%	35,8%	38,3%	12,3%	3,7%	100,0%
A9.4 Chronic conditions: hematological system	0,0%	26,7%	46,7%	20,0%	6,7%	100,0%
A9.5 Chronic conditions: immunological system	3,3%	33,3%	33,3%	23,3%	6,7%	100,0%
A9.6 Chronic conditions: respiratory system	6,7%	33,3%	53,3%	6,7%	0,0%	100,0%

A9.7 Chronic conditions: digestive system	0,0%	0,0%	63,6%	27,3%	9,1%	100,0%
A9.8 Chronic conditions: metabolic system	3,6%	25,0%	60,7%	10,7%	0,0%	100,0%
A9.9 Chronic conditions: skin disorders	0,0%	0,0%	0,0%	100,0%	0,0%	100,0%

4. Results Analysis

Building on the previous considerations, the study incorporated a battery of questions inspired by the OECD autonomy assessment scale (McWhinnie, 1981). This scale focuses on the development and validation of instruments for assessing long-term disability. The adopted methodology measures an individual's ability to perform essential activities of daily living. The conceptual framework and definitions are outlined alongside the final recommendations for survey questions and indicator construction provided to OECD member countries. In addition to specific testing programs conducted by participating countries, the recommended instruments were included in other large-scale surveys, such as the OECD Comprehensive Survey carried out across multiple nations.

Based on this framework, it was possible to construct a set of indicators combined into a single composite index, distinguishing between upper and lower levels of autonomy.

"Upper" refers to higher autonomy ("Yes, easily" / "Yes, with some difficulty"), whereas "lower" refers to limited autonomy ("Yes, with great effort" / "No, only with the help of others"). In the first case, a value of 1 was assigned; in the second, a value of 0 was assigned.

The index summarizes six recoded variables and increases proportionally with higher levels of autonomy. Theoretically, it ranges from 0 (complete absence of autonomy) to 6 (full autonomy across all activities considered).

Regarding gender differences (Table 4), men report lower autonomy in meal preparation (4.6% report a low level of autonomy compared to 1.2% of women) and light household tasks (4.6% of men versus 3.7% of women). Conversely, women report lower perceived autonomy in heavy household tasks (7.4%), dressing and personal hygiene (4.9%), grocery shopping (7.4%), and using transportation (7.4%).

The same table shows that increasing age is associated with a growing perception of reduced autonomy across all sub-areas considered.

Table 4. Distribution of perceived level of autonomy by gender and age group

		Gender		Age group		
		Males	Females	<70 years	70-75 years	>75 years
		Col %	Col %	Col %	Col %	Col %
F1.1 Independently performs: preparing breakfast/meals	Low level of autonomy	4,6%	1,2%	0,0%	3,6%	6,0%
	High level of autonomy	95,4%	98,8%	100,0%	96,4%	94,0%

Total		100,0%	100,0%	100,0%	100,0 %	100,0%
F1.2 Independently performs: light household chores	Low level of autonomy	4,6%	3,7%	1,6%	5,4%	6,0%
	High level of autonomy	95,4%	96,3%	98,4%	94,6%	94,0%
Total		100,0%	100,0%	100,0%	100,0 %	100,0%
F1.3 Independently performs: heavy household chores	Low level of autonomy	4,6%	7,4%	1,6%	7,1%	10,0%
	High level of autonomy	95,4%	92,6%	98,4%	92,9%	90,0%
Total		100,0%	100,0%	100,0%	100,0 %	100,0%
F1.4 Independently performs: dressing/bathing	Low level of autonomy	4,6%	4,9%	1,6%	5,4%	8,0%
	High level of autonomy	95,4%	95,1%	98,4%	94,6%	92,0%
Total		100,0%	100,0%	100,0%	100,0 %	100,0%
F1.5 Independently performs: shopping	Low level of autonomy	4,6%	7,4%	1,6%	7,1%	10,0%
	High level of autonomy	95,4%	92,6%	98,4%	92,9%	90,0%
Total		100,0%	100,0%	100,0%	100,0 %	100,0%
F1.6 Performs independently: using means of transport	Low level of autonomy	4,6%	7,4%	1,6%	7,1%	10,0%
	High level of autonomy	95,4%	92,6%	98,4%	92,9%	90,0%
Total		100,0%	100,0%	100,0%	100,0 %	100,0%

The level of autonomy is, on average, lower among those who report at least one chronic condition (Mean = -0.0169; SD = 0.96) compared to those who report only acute conditions (Mean = 0.07; SD = 0.84).

Overall, perceived autonomy and self-perceived health status are closely correlated. In fact, in table 5 it is clear how health monitoring is related to the levels of autonomy of the person

who uses technologies designed for this purpose (for example smartphones or other wearable technologies) (r=0.152)

Table 5. Correlation between perceived health quality and perceived autonomy items

		F1.1 Independently carries out: preparing breakfast/meals	1.2 Carries out light household tasks independently	F1.3 Carries out heavy household chores independently	F1.4 Independently carries out: dressing/washing	F1.5 Performing shopping tasks autonomously	F1.6 Performs independently: using means of transport	Standardized Autonomy Level Index
D10 How do you perceive your overall health status?	Pearson Correlation	0,033	0,117	0,184	0,151	0,184	0,184	0,152
	Sig. (2-tailed)	*0,669*	*0,131*	*0,017*	*0,050*	*0,017*	*0,017*	*0,050*
	N	*168*	*168*	*168*	*168*	*168*	*168*	*168*

When addressing disability and non-self-sufficiency among older adults, technological products—whether connected to the internet or not—function as facilitators capable of enhancing and sustaining higher levels of performance in one or more specific abilities (Di Santo, 2013; 2025). Within the ICF framework, technologies play a central role in the "Environmental Factors" component (WHO, 2001), particularly in the case of so-called assistive technologies. These tools, often internet-connected and based on IoT (Internet of Things) systems, include both hardware and software components designed to improve autonomy, safety, and quality of life for persons with disabilities and older adults. Examples include health monitoring devices (such as smartwatches and smartphones equipped with dedicated applications), safety tools (e.g., smart pill dispensers), assistive home automation systems (voice assistants, smoke detection sensors, video intercoms), mobility devices (smart wheelchairs, smart canes), and domestic robots (e.g., GiraffPlus).

Such technologies enable continuous monitoring, remote management of the home environment, and facilitated communication (Stavropoulos et al., 2020).

However, a crucial question arises: do older adults possess the knowledge, competences, and skills necessary to use—and benefit from—these technologies, particularly when they are internet-connected?

Data from the VISAD project show that 96.4% of respondents have internet access at home. They primarily use mobile devices (especially smartphones) to access information (65.8%), use social networks (54.8%), and maintain social relationships (16.1%). Approximately 72% use the internet to watch films, TV series, documentaries, or sporting events, while only about one-third engage in online financial transactions.

Table 6 further indicates that more than half of respondents report limited competence in using computers and other advanced electronic devices. This helps explain why, rather than using a PC (28.4%), most prefer smartphones (87.8%). Their primary purposes are staying informed (76.6%), maintaining relationships through social media (74.5%), and contacting family members and friends (72.3%) via specific applications (e.g., WhatsApp, Telegram, Messenger).

Table 6. Ability to Use Computers and Other internet-Connected Devices

E3 **What is your level of ability in using a computer?**	Excellent	3,6%
	Good	36,9%
	Sufficient	30,4%
	Insufficient	29,2%
Total		100,0%

The use of PCs (or laptops) for internet access is reported by 28.4% of respondents. However, participants show a clear preference for mobile devices, such as tablets (21%) and, above all, smartphones (87.7%), in some cases combined with smartwatches (14.2%).

The most significant finding of the entire study is that 80.4% of respondents do not use digital technologies to monitor their health status, despite the presence of significant chronic conditions (see Table 7).

Table 7. Using health monitoring tools

		Total
		Col %
E10 **Do you use digital technologies to monitor your health status?**	Ever	17,9%
	Sometimes	1,8%
	Never	80,4%
Total		100,0%

As far as internet use is concerned, it primarily serves as a means of contacting a specialist or general practitioner for advice or to obtain prescriptions for pharmaceutical products (59.5% of respondents).

Thus, despite a general perception that technology provides benefits (see Table 8), the concrete use of technological products as facilitators of personal and social autonomy remains at an introductory and still preliminary stage.

Table 8. Use of devices and autonomy items

	E5.1 Does using technological devices bring you advantages?	Mean	N	Std. Deviation
F1.1 Independently carries out: preparing breakfast/meals	Sì	0,9783	138	0,146361781
	No	0,9333	30	0,253708132
F1.2 Carries out light household tasks independently	Sì	0,9638	138	0,187547378
	No	0,9333	30	0,253708132
F1.3 Carries out heavy household chores independently	Sì	0,9420	138	0,234539958
	No	0,9333	30	0,253708132
F1.4 Independently carries out: dressing/washing	Sì	0,9565	138	0,204674041
	No	0,9333	30	0,253708132
F1.5 Performs independently: shopping	Sì	0,9420	138	0,234539958
	No	0,9333	30	0,253708132
F1.6 Performs independently: using means of transport	Sì	0,9420	138	0,234539958
	No	0,9333	30	0,253708132
Standardized Autonomy Level Index	Sì	0,0189	138	0,875919515
	No	-0,0868	30	1,1915877

Technologies for health monitoring tend to be used primarily by individuals who exhibit higher levels of autonomy (see Tables 8 and 9).

Table 9. Items autonomy and frequency of use of health monitoring tools

		E10 Do you use digital technologies to monitor your health?	
		Always	Never
		Col %	Col %
F1.1 Independently performs: preparing breakfast/meals	Low level of autonomy	3,3%	3,0%
	High level of autonomy	96,7%	97,0%
Total		100,0%	100,0%
F1.2 Independently performs: light household chores	Low level of autonomy	3,3%	4,4%
	High level of autonomy	96,7%	95,6%
Total		100,0%	100,0%
F1.3 Independently performs: heavy household chores	Low level of autonomy	6,7%	5,9%
	High level of autonomy	93,3%	94,1%
Total		100,0%	100,0%
F1.4 Independently performs: dressing/bathing	Low level of autonomy	3,3%	5,2%
	High level of autonomy	96,7%	94,8%
Total		100,0%	100,0%
F1.5 Independently performs: shopping	Low level of autonomy	6,7%	5,9%
	High level of autonomy	93,3%	94,1%
Total		100,0%	100,0%
F1.6 Performs independently: using means of transport	Low level of autonomy	6,7%	5,9%
	High level of autonomy	93,3%	94,1%
Total		100,0%	100,0%

Socio-economic status is positively correlated with self-perceived health quality. As previously noted, individuals who perceive their health status as good are also more likely to use technological tools for health monitoring. However, socio-economic and cultural background does not appear to be a decisive factor in the use of health-monitoring technologies, as such practices have not yet become an established habit within the surveyed population.

5. Concluding Remarks

This article has examined the relationship between ageing, autonomy, and digital technologies through a bio-psycho-social perspective and a multi-level interpretation of the digital divide. The findings show that, within the population aged 65 and over considered in this study, the first level of the digital divide—access to infrastructure and devices—has largely been overcome. Most respondents had internet access and used mobile devices, particularly smartphones. However, this widespread access did not translate into full digital inclusion.

Significant critical issues emerged at the second and third levels of the digital divide. Digital competences were generally modest and often limited to basic communicative and informational uses. This gap between technological potential and actual use highlights that the adoption of digital tools in the health domain is neither automatic nor directly proportional to clinical need.

The analysis further demonstrates that the use of health-monitoring technologies tends to be concentrated among individuals with higher levels of functional autonomy and better self-perceived health. This pattern suggests a mechanism of social selectivity: technologies do not automatically compensate for vulnerability but are more readily adopted by those who already possess adequate personal, cultural, and relational resources.

The findings of this study point to a condition that can be defined as *apparent inclusion*, namely a situation in which individuals are formally included in the digital environment (in terms of access and device ownership), yet remain excluded from its more advanced uses and benefits.

This condition is consistent with previous research on digital exclusion (Selwyn, 2004) and the second-level digital divide (Hargittai, 2002), as well as with the notion of a usage gap highlighted by Van Deursen and Van Dijk (2011, 2014). However, the concept of apparent inclusion proposed here aims to further emphasize the coexistence of infrastructural inclusion and functional exclusion within the same individuals.

In this sense, apparent inclusion should be understood as an analytical refinement of existing frameworks, capturing a specific configuration of inequality in ageing populations, where access is widespread but the capacity to translate digital engagement into meaningful benefits remains highly stratified.

Authors' Contributions

LB was involved in the conception and design of the study, coordination of the research activities, data analysis and interpretation, and drafting of the manuscript. RDS was involved in the research design, data collection and interpretation, and critical revision of the manuscript. Both authors were involved in approving the final version of the manuscript.

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