The Digitization of Seniors

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The lower digitization among seniors must be understood in the context of the coming together of multiple digital divides. In addition to the obvious generation divide (age is one of the factors most determining digital uses), others also have an influence, such as a lower education or income level, which is characteristic of this group and also strongly correlated with lower use of new technologies.

ICTs digitization digital divides seniors gender socio-spatial inequalities

1. Introduction

Seniors is a euphemism employed to stress the digital/technological limitations of the elderly. The digital limitations of the elderly are primarily due to their lack of participation in preferences regarding design development, ergonomic, and usability adaptations, among other characteristics where the elderly are considered [1][2]. It is well known that seniors are a group with a very low level of digitization, and that age is one of the most discriminating variables in access to the Internet and information and communication technologies.

The concept of the digital divide was created to refer to the difference between people who access or do not access the Internet [3] that is, to refer to the differences between different social groups according to the percentage with Internet access. Although the first studies of the digital divide focused on access, it began to be evident that access did not imply use [4], so priority attention stemmed from access to use. Some authors who claimed to focus on use preferred the concept of digital inequalities [5] to differentiate their approach from the previous one. This was applied to analyze the differences between different Internet users due to different uses.

Other authors preferred to continue using the term digital divide, but differentiating between a first access gap versus a second uses gap [6][7] and also digital skills and competencies [4][8]. The thesis of this line of studies is that inequalities have not been reduced with the increase in digitization, but have diversified as digital uses are increasingly present in daily life, benefiting more people with a better socioeconomic position [9].

The analysis is framed within the concept of the second digital divide or digital inequalities and argues the special digital vulnerability of seniors in two dimensions of digitization: uses and skills. A vulnerability that, according to this theoretical framework, would not only be digital but would also lead to social disadvantages and a more general social vulnerability. Following Spark's thesis [9][10], digital exclusion-a very frequent phenomenon among seniors-could lead to social exclusion since more and more access to social resources occurs through Information and Communication Technologies (ICTs).

In accordance with this theoretical framework, below presents a summary aimed at seeing the variables and factors that influence the levels of digitization (in uses and skills) or the digital exclusion of Spanish seniors in particular and also in other countries.

2. The Digitization of Seniors

There is extensive empirical evidence of the limited digitization of older people. The following are just a few examples: Friemel finds that while Internet use stands at 80–90% of the population in Western societies, those over 65 years of age achieve much lower levels of use [6]. Other authors also find striking differences between the older persons' digitization and the rest of the population [11][12]. In addition, older persons make up the greatest proportion of the information-weak classes [13].

In Spanish society, Internet access among older people is growing and at a faster rate than in society as a whole, albeit still at a very low level and far behind all other age groups [9][14].

Despite this overwhelming evidence, there are few studies that explore the position of this group and the causes and factors behind it [15]. Studies on older persons by Spanish authors are also considered very limited [16]. Moreover, there are practically no studies that address the role of socio-spatial variables in the low digitization of the senior population.

Most studies are restricted to describing the situation, presenting the group as disconnected or poorly connected, but do not look further at the causes, with the dominant shared stereotype being that older persons are not involved in technology [17][18].

Specifically in Spain, the scarcity and limitations of studies on the causes of the older people's great digital inequality provide strong justification for further work. Previous studies conducted in Spain are small in number, partial, and limited, although they have pointed to the following causes, factors, and explanations [19].

In 2012, a study tried to identify the technological resources, their use, and types of uses among seniors, although with an excessively small sample (n = 215) that did not allow the authors to find significant differences by gender or even by age, although it did find a difference by education level [20]. It is the main reference of rural seniors and the main contribution from the geospatial perspective.

In 2015, Pino Juste and Rodríguez López [16] conducted a survey on a small sample of fifty-two people who had taken courses for seniors, the results of which are not considered in this study due to the precariousness of the sample.

In 2016, there was a mixed methodology, qualitative and quantitative, study on rural seniors in the autonomous community of Castile and Leon, one of the most rural parts of Spain [20]. This study showed the multi-exclusion of seniors, finding that it is not due to a single cause and highlighting that the highest exclusion rates are found in the smallest municipalities and among the oldest seniors, although there are other variables that also have an influence, such as the distance to provincial capitals or larger municipalities. It also found that the role played by the 'support generation' (the children of the seniors, who are more digitized) is key in the digitization level of seniors.

The main Spanish reference for understanding the causes of exclusion or lower digitization of seniors is from 2017 [17]. The use of the Internet and its applications was studied on the basis of socio-demographic variables. This study found noticeable differences between seniors aged from 65 to 74 and those aged 75 and over, finding that younger seniors use the Internet much more and confirming the existence of seniors who are fully integrated into the use of the Internet. In this respect, the authors criticize the shared stereotype that seniors are cut off from technology and conclude that there is a need for a more detailed segmentation of the group in order to overcome the single uniform vision that studies have offered up to now. They also concluded that age is not sufficient to understand the group and point to other factors, such as psychological variables, that really explain the differences in the use of online banking and social networks.

Outside of Spain, other studies have contributed to the background on the digitization of seniors. One of the pioneering works is that of Wicks [21], which established the differences between old and young seniors that other subsequent studies have also highlighted and that will also be examined here. The study suggested that access barriers are not the only problem and pointed to reluctance as another significant barrier observed among seniors.

Another study from 2016 conducted in Switzerland on a sample of 1105 seniors [6] highlighted the influence of education, income, interest in technology, having worked with computers before retiring, and marital status. It also confirmed that gender-based differences disappear when controlling for the aforementioned variables.

Another noteworthy study is that conducted in the United Kingdom in 2018 [15], which studied the ownership and use of smartphones. This study highlighted the importance of variables such as social influence, facilitation conditions, service expectations, effort, and enjoyment.

The argument that the lower use and acceptance of ICT among seniors is caused by a lack of interest and the absence of social pressure has also been highlighted as a reason why seniors have lower digitization [11][18][22][23]. The importance of a self-perception of low skills has also been highlighted [23]. There are also less innovative [24] and have less need to search for information. [13][25].

Other studies on digitization that are not specific to this age group are also useful for determining the relevant variables, at least in the digitization levels of the general population. In Spain, it is worth highlighting a study from 2011 [26] that verified, through a logistic regression model, the high explanatory capacity of education, age, and employment status. In contrast, gender and the characteristics of the geographical environment made minimal explanatory contributions. The study emphasized the explanatory capacity of social variables over geographic ones. The rural-urban dichotomy was also emphasized as an important variable in explaining the digital divide in another Spanish study [27]. Outside of Spain, Warf [28] found that Internet providers tend to provide less coverage in rural areas and highlighted the variable as one component of digital inequality, among others (age, education, income, gender, etc.). The contribution of this variable also appears in other studies [6]. However, the studies by Hindman [29] at the start of this century concluded that the differences between metropolitan and non-metropolitan areas were small and more limited than those for variables such as income, age, and education, which these authors demonstrated in Spain [26].

The first studies on digitization at the end of the 20th century and the beginning of the 21st put the emphasis on the great geographical inequalities that were fundamentally appreciated between countries [30]. The economistic interpretation prevailed in the explanation of the differences in infrastructure and access devices, so that digitization was largely explained by the level of territorial development [9][26][31]. In the early days, what was mediated was access to the Internet and these differences in access were reduced as the use of the Internet expanded, but big inequalities linked to the quality and modes of access available to users continued to be evident [9].

Since the first decade of the 21st century, the perspective of analysis has been changing towards a second level of the digital gap, beyond the access gap, in which it was important to examine the levels of competence and forms of use [9]. This change in perspective was associated with a lesser role in the analysis of geographical aspects and a greater interest in other relevant variables of the social structure, such as age, sex, studies, or family income. Underlying the theoretical approach is that inequalities in the social structure determine digital inequalities. Digital inequality is considered to reproduce the old classical inequalities in the digital society [32].

Among the various authors who highlight this new overview, Dimaggio stands out [4][26]. He criticized the perspective of geographic politics and the “connected/non-connected” dichotomization that prevailed until then. Dimaggio argued that the expansion of the Internet among the population, as well as its services and infrastructures, did not guarantee the reduction of the digital gap, demonstrating that in those territories in which there was universal access to the Internet, important inequalities persisted. This causes academic interest to shift from having or not having access to the differences in digital uses and skills. From the new perspective, the explanatory interest of social variables increases compared to geographic ones, evidencing the great influence of variables such as race, gender, education, age, etc.

However, although in terms of Internet access, the geographical and spatial differences have decreased a lot with the expansion of the Internet, this has also decreased a lot in other social variables. And yet, although great differences are also appreciated in the uses and competencies in social variables, important geographical differences continue to be appreciated (in competencies and uses) also in the geographical variables. On the one hand, this is due to the theoretical interest having shifted from the geographical to the social. On the other hand, causal analyzes in surveys of digital uses are giving a more secondary role to geographical variables than to social ones.

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