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Digital Inclusion and the Elderly of the Pechiche Commune of the Santa Elena Canton

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Abstract

Digital inclusion emerges as a mechanism to incorporate adults into the digital era , this term refers to the process of integration of population groups that are affected by digital divides to older adults. The objective of the research is to understand the use of digital platforms for digital inclusion in older adults of the Pechiche commune of the Santa Elena canton. The methodology used was quantitative with a descriptive approach. A Likert scale survey format was used for the data collection, directed to older adults of the selected community. The results indicated that there are factors that condition digital inclusion, among them, the presence of economic, generational and geographic factors, which cause limitations and repercussions in the digital literacy of older adults. Finally, actions to promote the digital inclusion of older adults are recommended.

Keywords: *Digital Inclusion, Technological Tools, Digital Literacy, Gaps and Social Factors.*

Introduction

Nowadays we live in a digital age in which new technological innovations emerge every day and are adapted within society. However, these innovations are often a limitation for older adults and the lack of knowledge of how to use them causes who feel incapable of developing this activity.

Digital inclusion emerges as a mechanism that allows adults to be incorporated into the digital age. The term digital inclusion refers to the process of integrating older adults into population groups that are harmed by digital gaps. In recent years, researchers have been concerned with establishing the relationship between older adults and ICTs, therefore, they have carried out studies, approaches, theories and even objectives aimed at understanding this link. Digital inclusion in older adults allows them to have greater control to make decisions, greater social interaction, reduced marginalization, loneliness or isolation among other factors that in the long run would prolong their life expectancy, Hernández (2023).

In this context, the study determines how older adults who face a number of barriers have limitations in accessing ICTs, although they may have multiple platforms, without adequate knowledge of how to use them, it remains a barrier.

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Over time, Latin America has been experiencing a new adaptation to the aging process and with it the emergence of the Internet has caused significant changes in the way in which the inhabitants of the region interact with each other, and in turn has facilitated great opportunities for social growth in this globalized world; and it is here where new obstacles arise for older adults and their lack of digital knowledge.

The speed of the aging process over time has not been considered, however, its trend is still present, so in the future it could affect several Latin American countries. Aging by nature can cause a proportional increase in social, economic, cultural and even political needs.

Based on the above, it is determined that older adults face several barriers at a social level, so that governments should act and manage policies in favor of this population group. Public policies focused on caring for older adults must respond to the protection and promotion of their rights and their social integration.

However, at the international level, organizations such as UNESCO and the United Nations Development Programme (UNDP) have recognized that the hierarchy of digital inclusion could achieve the Sustainable Development Goals (SDGs).

On the other hand, the Government Agencies of the United Kingdom, were implemented by the Minister of Technology in February 2009, where they will use open source technology, likewise governments of Vietnam, Brazil, Netherlands and Denmark and among other countries, including South Africa, have recognized it as a potential of open standards, in which they developed various technological solutions to benefit people, who get involved to reduce costs and obstacles, in this similar way different perspectives, theories and objectives have been used to investigate the relationship between older adults and ICT.

In this regard, it is emphasized that, in previous decades, it can be observed how technologies began to develop rapidly, but access for older adults was totally limited, since many were not familiar with the use of computers or mobile phones, which exacerbated their digital exclusion. As the Internet and mobile devices became ubiquitous, it began to be recognized that older adults were one of the groups most affected by the digital divide; thus, studies showed that they were less likely to use the Internet and digital technologies compared to younger generations.

In context, at the governmental and international level, efforts have been made to address this problem. In a recent session of the UN Working Group on Aging, the need for policies that promote digital inclusion as an integral part of the well-being of older adults was highlighted. Likewise, organizations such as the OEI and OISS have launched specific protocols to improve the access of this population group to the digital society in Latin America.

Meanwhile, in Ecuador, the Quito Action Plan (2005), approved by the Economic Commission for Latin America and the Caribbean (ECLAC), is being implemented. It developed goals and objectives for digital inclusion in the region, promoting specialized systems of care, education and digital inclusion and policies, participation and the support of policies for older adults.

In the Ecuadorian State, the management of the technical secretary of the National Council for Intergenerational Equality has been fundamental and has been present at various conventions where issues related to the social and comprehensive well-being of older adults are addressed, one of them being the so-called Eleventh Session of the Open-ended Working Group on Aging.

At the national level in Ecuador, the Information and Communication Technologies Module - ICT of the national survey on Employment, Unemployment and Underemployment in 2022,

indicates that approximately one in ten people, between the ages of 15 and 60, lack digital literacy, and it is also mentioned that digital illiteracy represents 8.2% for the same year. These data were published with the help of the National Institute of Statistics and Censuses (INEC).

However, since the creation and implementation of the project at a national level, the way in which Ecuadorians access telecommunications information has changed. Thus, from 2010 to 2014, around 490 Infocentros have been implemented, benefiting 3,030,604 people.

In the province of Santa Elena, several programs have been carried out with the aim of establishing digital inclusion in older adults; one of them has been promoted by the Ministry of Economic and Social Inclusion for priority attention to approximately 3,000 older adults.

The latent problem is affecting several communes in Ecuador, including the Pechiche commune in the Chanduy parish belonging to the Santa Elena Canton, which has a population of approximately 4,031 social subjects; however, this figure is divided at the limit of its different communes.

To the north is the Río Verde, to the south is the Manantial de Chanduy commune, to the east is the San Rafael commune and to the west is the El Real commune; and it is made up of ten neighborhoods and four citadels that are organized into dominant family groups that maintain kinship relations.

The Pechiche commune is characterized by its economic activities, traditions and cultures, however, this commune has a considerable population of older adults who have lived their entire lives carrying out activities within their commune and have not had the need to use technological tools, based on this premise, it is evident why currently this population has little knowledge about new information technologies, their use and application in daily life.

Older adults are the least literate population in digital aspects, they are unfamiliar with the use of electronic devices such as (computers, tablets, cell phones) which creates barriers in communication processes and limitations to integrate into society, digital inclusion is a topic of social interest, since it aims to generate changes within society based on the accessibility and technical use of digital media.

Methodology

Within the research process, it was decided to use the positivist paradigm, since it focuses on identifying the most relevant aspects based on the problem studied. In this case, the paradigm allows us to discover which are the most effective tools or methods to integrate older adults into the world of technology and also opens the way to identifying factors that may facilitate the participation of this population group.

This research scope was descriptive in nature, which allowed older adults to be segmented according to their various demographics, age range, educational level, and socioeconomic background. This allows us to understand how these variables influence digital inclusion and access to technology. This includes their interest in learning new digital skills, their level of confidence in using devices, and their perception of the benefits of being connected. The social and family context of older adults can be examined, assessing how family dynamics influence their digital inclusion.

This study makes use of non-experimental research, because it is not intended to manipulate the variable, that is, it is intended to know the reality of the phenomenon in its natural state in order

to subsequently be able to interpret it. Non-experimental research is based on identifying those categories or variables that occur without the intervention of the researcher, that is, without presenting any alteration of the object of study.

Non-experimental research in the field of digital inclusion of adults focuses on characterizing and understanding phenomena of variables that allow us to identify and describe how older adults engage with technology, including the type of devices.

The research had a quantitative approach, since it allowed obtaining generalized and measurable data. In this case, it was necessary to obtain information related to the digital inclusion of older adults that can be objective. Therefore, the research process collected proportional data that facilitated the analysis and comparison of aspects such as the use and access to technology, their skills and the participation of the population group in online activities.

For Bernal (2015), the population "is the set of all the elements to which the research refers". For Perez (2021), the population refers to the actors in the analysis problem who share a specific characteristic and who are the object of analysis in a particular investigation.

Taking the definitions described above as a reference, a population is considered to be the set of objects, elements, units or individuals that are studied to obtain precise and reliable data.

Regarding the technique for obtaining information, a survey is conducted among the elderly in the town where the research is being conducted. According to the author Hernandez (2019), information is collected from a selected sample. These questions seek to understand the attitudes, opinions, beliefs, behaviors or other relevant characteristics of the target population.

In the present research work, a Google form of 25 questions was developed, with multiple choice answers using the Likert scale, which correspond to the study variables.

For this reason, the research called Digital inclusion in the elderly of the August 10 neighborhood of the Pechiche commune of the Santa Elena-2024 canton. According to the last INEC census of 2022, it is considered that 4,031 people live in the Pechiche commune ; it was obtained that 130 older adults live in this town where surveys were carried out of 62 older adults, including the council that directs the citizens who are part of the community, who were surveyed in order to collect information and draw conclusions about the phenomenon studied.

In relation to the problem presented, the type of sampling that was proposed was non-probabilistic, this does not require statistical operations and gives the researcher the opportunity to select the sample randomly. Considering the type of study, it was decided to use convenience sampling with the aim of selecting a suitable sample for the study, obtaining information and data in an efficient, truthful and timely manner regarding the phenomenon that was investigated, allowing to feed the development of the definitive study.

In the study instrument, the 25 questions were made and validated by means of the Statistical Package For the Social Sciences (SPSS) program. For this purpose, version 30.0.0.0 was used.(172), in which the pilot test previously carried out on a percentage of the sample was validated. The results gave a percentage of 8.56 in Cronbach's Alpha. This data denotes that the questions are at a good consistency level since it is in a range of 0.8 to 0.9, which indicates that the measurement instrument is valid and can be applied to the study sample.

Results

It is interesting from the bibliometric point of view how technology as one of the elements of

local development can have importance in scientific publications, which we state below based on the information downloaded from the Scopus database and processed from the Vosviewer and Bilbliometrix applications, a summary of the main data obtained from the bibliometric analysis of the terms " digital inclusion AND older adults" which resulted in 544 publications.

In Figure 1 we have the annual production (from 2001 to 2025) of publications on digital inclusion and older adults. As we can see, in 2024 the maximum number of publications per year was reached (137 publications), since 2015 there has been a significant increase in publications until 2024, while for the first month of 2025, 12 articles have already been published.

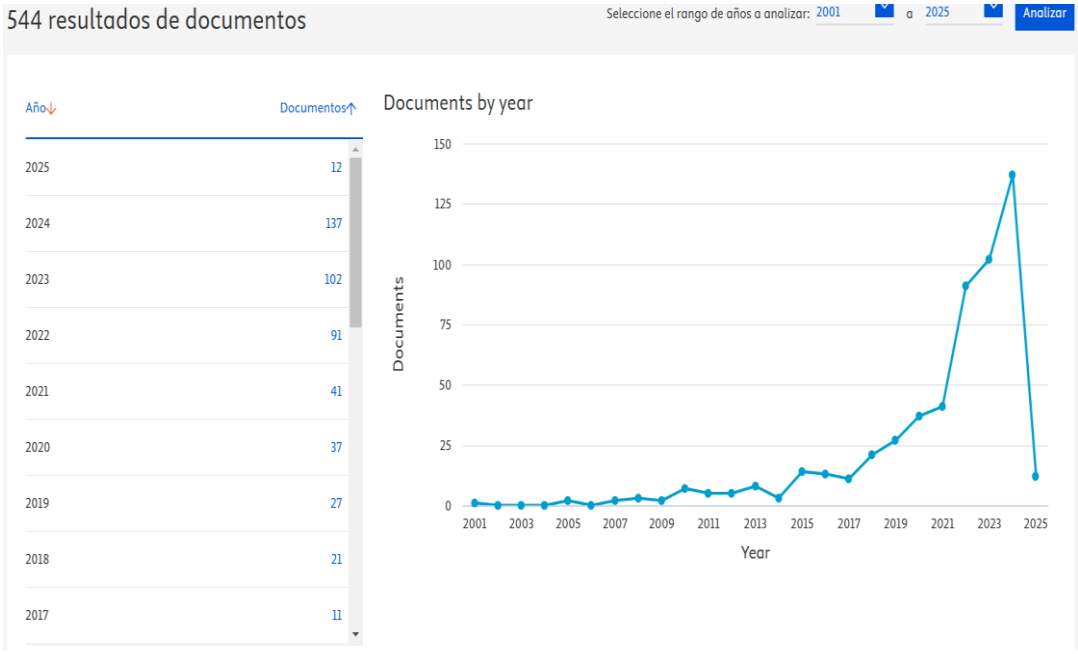


Figure 1. Annual Production (Scopus)

Note . Source Scopus, 2025

As we can see in illustration 2, we have the summary of the analysis of a database of 544 publications in the Scopus database that incorporate the aforementioned terms, as we can see the time series is shown from the year 2000 to 2025, found in 311 sources, with 2496 authors of said number of publications, with a total of 1518 keywords and 24222 references, among the main data that we have summarized.

Figure 2. Summary of Bibliometric Analysis (Prepared With Bibliometrix)

Note . Source Scopus, 2025. Prepared with Bibliometrix

In Illustration 3, a co-occurrence analysis is carried out with the keywords from the Scopus publication database, resulting in the strongest cluster containing the keywords “older adults”, “digital inclusion”, “social inclusion”, “quality of life”, “mental health”, “intervention”, “usability”, among others.

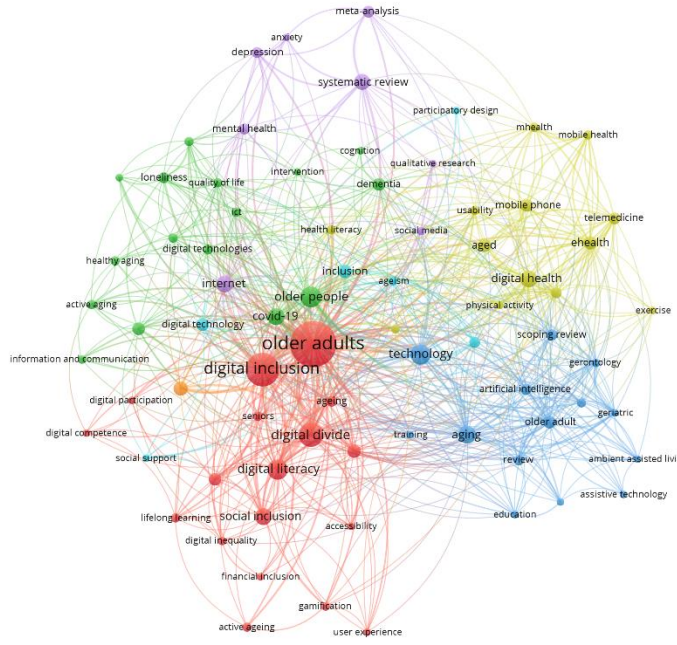


Figure 3. Co-Occurrence Analysis (Created with Vosviewer)

Note . Source Scopus, 2025. Prepared with Vosviewer

In Illustration 4, an analysis of co-citations between authors of the database of 544 Scopus publications is made, using the complete counting method to obtain clusters of main associations between key authors, resulting in the illustration.

At the time of the analysis, authors such as van harguitai; anderson; trioco; rosales, among others, were identified.

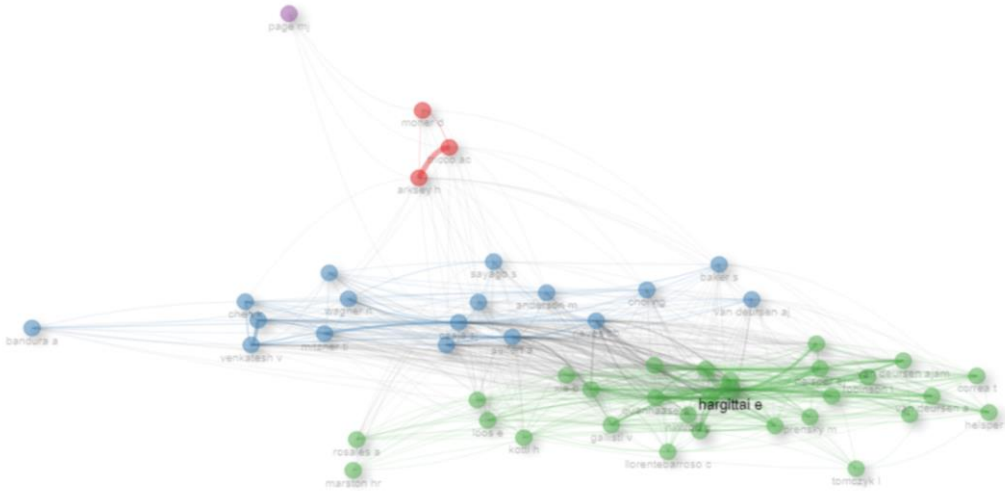
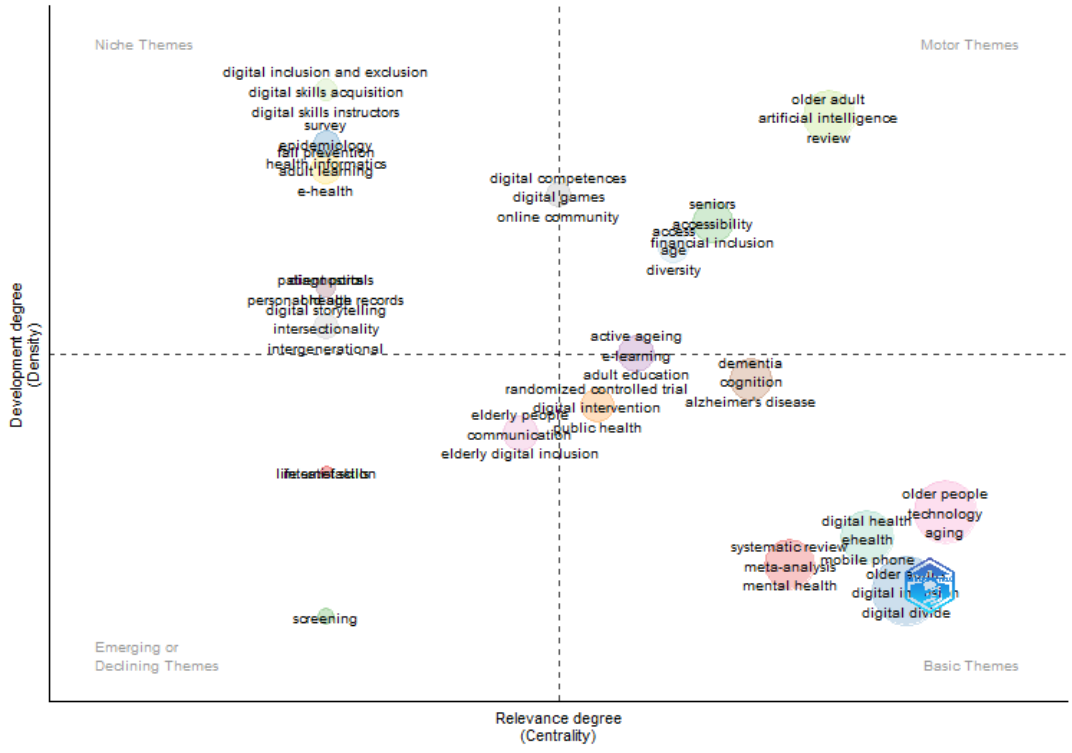


Figure 4. Co-Citation Analysis (Developed with Bibliometrix)

Illustration 5 summarizes those topics that the Bibliometrix application (related to keywords), grouped by "niche topics" such as digital inclusion and exclusion, adult learning, health, digital instructor skills and others, in "driving" topics such as older adults, accessibility, artificial intelligence, diversity, on the other hand there are basic topics such as mental health, cognition, adult education, intervention, public health, finally Bibliometrix identifies emerging topics such as aging, communication, digital inclusion of older adults, among others.

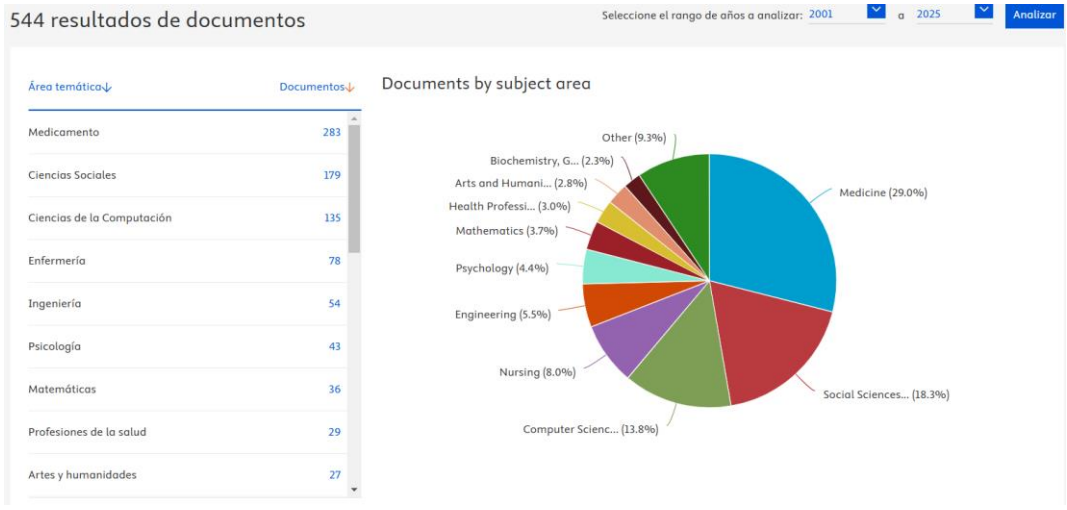
Illustration 5. Analysis By Grouping of Relevant Topics



Note . Source Scopus, 2025. Prepared with Bibliometrix

Illustration 6 indicates the thematic areas where the documents subject to this bibliometric analysis are published, with medicine accounting for 29.0%, social sciences occupying 18.3%, computer sciences 13.8%, and areas such as psychology, professional health, arts and humanities, among others, also appearing.

Illustration 6. Distribution by Area



Note . Source Scopus, 2025

On the other hand, we have the results of the study's interviews:

Have you had difficulty accessing digital devices due to cost, insufficient knowledge or support?

Frequency	**Percentage valid**	
Yes, due to the cost of the device	18	29.0
Yes, due to insufficient knowledge of the use of devices	23	37.1
Yes, due to insufficient support to be able to use the devices	5	8.1
I have not had any difficulties	12	19.4
No but I'm not sure how to start	4	6.5
Total	62	100.0

Prepared by: authors.

Based on the research process, it was determined that 37.1% of older adults have difficulties using technology due to insufficient knowledge, while 29.9% indicate that they have difficulty accessing these devices due to cost, 19.4% indicate that they have not experienced difficulties.

What kind of support would you need to improve your technological skills?

Frequency	**Valid percentage**	
Face-to-face classes or workshops	26	41.9
Online tutorials or videos	19	30.6
Support from family or friends	15	24.2
Step-by-step written guides	1	1.6
Technical support	1	1.6
Total	62	100.0

Prepared by: authors.

A considerable number are also interested in online resources, showing that they are open to

different learning methods. “Support from family or friends”, “Written step-by-step guides” and “Technical support”: These options are less requested, suggesting that although social support is important, they prefer more formal methods of learning.Inwhat areas would you like to use technology more?

Frequency	**Valid percentage**	
Health	31	50.0
Social communication	5	8.1
Entertainment	17	27.4
Social communication	8	12.9
Finance and Purchasing	1	1.6
Total	62	100.0

Prepared by: authors.

According to the data obtained, it is evident that the majority of respondents would like to use technological tools to learn about topics related to the health field. While 27.4% of respondents are interested in using these tools for entertainment, a minimal percentage would like to use them for greater communication.

Discussion

Regarding the research process based on the digital inclusion of older adults, the following perceptions were obtained:

Regarding the most determining areas that can be used through technology, older adults indicated that they would like to use those tools or applications that are related to the area of health and entertainment, because, sometimes as older adults they spend most of their time without doing any activity that requires great effort. Technology in general is a tool that allows access to information quickly and also serves as a means of communication, in contrast to the results, a small part of the older adult population would like to use apps to be able to communicate with their relatives. This idea is related to what was proposed by Gómez (2018) who indicates that digital inclusion is a process that allows people to acquire skills and access to technology, making them participants in the current digital age.

Regarding the perception of participation in online activities, the results indicate that a large part of the older adult population is interested in entering the world of technology; while it is true that online activities could induce adults into a process of constant interaction, however, the activities must be clearly directed at this population, since technology is a double-edged sword and it is about creating new opportunities for them and not trapping them in a vicious circle. Based on this premise, Moreno (2022) states that digital inclusion in older adults guarantees access to various platforms, and they can also improve their skills in using ICTs. The author indicates that currently, the use of the Internet has caused significant impacts on people's daily lives, including facilitating communication and access to information.

By virtue of the learning facilities and the acquisition of knowledge and skills through technological tools, it is determined that older adults agree that these tools are essential and necessary, however, other adults do not agree, which alludes to the fact that they do not feel

comfortable or capable of learning through them. This idea is related to what Baglione (2023) establishes, who indicates that since the Covid-19 pandemic, older adults want to be independent in communicating with their families, therefore, they aspire to integrate into modern life.

Veliz (2018) indicates that learning to handle digital devices can prevent older adults from feeling isolated, so equipping them with this knowledge will allow them to have a second advantage, where adults can develop their cognitive abilities that naturally slow down their aging.

Regarding the local institutions that promote activities, it is identified that the Ministry of Economic and Social Inclusion (MIES) carries out prior inductions to the adults who are within its program; in addition, the Chanduy Parish Gad promotes certain activities; however, most of the adults who do not belong to a program and are unaware of the Gad's activities have not been part of this digital inclusion. This perception is related to what Serrano (2021) mentions, who indicates that the identification of areas such as free time, care, and recreational entertainment have currently allowed the development of activities that seek to empower the public from the most relevant points in the identity formation processes.

Conclusions

In the development of this thesis, relevant data were obtained that address the digital inclusion of older adults; this phenomenon referred to the lack of technological literacy processes suffered by adults in the "Pechiche" commune and the massive interest they have in acquiring knowledge based on the use of digital tools. Among the most relevant conclusions are the following:

The elderly population is considered a vulnerable population group due to the presence of several factors related to aging and the resulting difficulties that affect the inclusion process. Based on this premise, the importance of using technological resources that can facilitate cognitive learning in older adults is highlighted, in addition to promoting connectivity and digital inclusion, since although it is true, a large part of this population does not know how to use a cell phone and tends to live in an environment of risk of marginalization.

This paper addresses the determination of the use of digital platforms necessary to promote the digital inclusion of older adults, since during the research, it was possible to identify the importance of intuiting knowledge based on the use and management of technological devices such as cell phones, tablets or computers. The use of these tools allows older adults to insert themselves into society, taking into account that this process is important for the growth of one or more communities.

Subsequently, factors that condition digital inclusion were identified, including the presence of economic, generational and geographic factors, which tend to cause limitations and repercussions on the digital literacy of older adults. To this end, the idea of instilling digital inclusion in adults is highlighted, since it allows them to maintain their dignity and lead an autonomous and healthy life.

Another important aspect that was discovered during the research process was the willingness of older adults to receive training workshops on the friendly use of technology and digital devices and to take part in related programs such as gardening, crafts, among others.

Finally, it is concluded that, in order to generate digital inclusion of older adults, collaborative actions are needed that allow for greater social integration and concern for the socio-emotional well-being of older adults. In this order, actions are proposed that allow highlighting the

importance of providing and equipping older adults with digital tools; these actions will contribute to promoting the active participation and involvement of older adults.

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