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RELATIONSHIP OF OLDER PEOPLE IN THE RURAL AREA OF SOUTHWEST PARANÁ (BRAZIL) WITH INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTS)

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Abstract

There are many challenges hinder the digital inclusion of people over 60. It is understood that the logic of inventions is to contribute to society. However, over the years, as technological evolution becomes necessary and develops rapidly, some generations, among them older people, need help keeping up with or adapting to them. Through exploratory research with a qualitative approach, where bibliographical research and the application of a questionnaire were used, we selected older adults of both sexes, in which we sought to analyze the appropriation and use of ICTs by older adults affiliated with the Cooperative Cresol União dos Pinhais, located in Coronel Vivida, a city in the mesoregion of Southwest Paraná, describing their main challenges facing digital inclusion. In general, the interviewees demonstrated the appropriation of ICTs, even with some difficulty and technical and skill challenges. However, they are aware of the importance of improving the use of the tools for their cognitive development and other potentialities related to decision-making in their rural property.

Keywords: Rural Areas. Cooperatives. Older Adults. ICTs. Region Southwest Paraná.

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1 Introduction

Old age is not a static fact; it is the result and prolongation of a process. Talking about aging implies thinking about our life trajectory from birth until today. In this sense, in her work "Old Age," Simone de Beauvoir (2018) portrays old age from the inside out under the perspective that we are a person inside and outside would be where old age is. This leads us to question where, exactly, we find ourselves. An intense process of demographic aging has been observed in recent decades, and in developing countries such as Brazil, this process is even more significant.

In the same way that the average age of the world's population has increased, society has also become increasingly technological. And many challenges hinder the digital inclusion of people over 60. Fear and resistance to the new, shame of making mistakes and appearing outdated, and falling into Internet scams are some barriers that hinder access, according to the Committee for the Democratization of Information Technology (CPDI). This organization promotes social inclusion for the construction and exercise of citizenship.

Technological innovation seeks to make society increasingly evolved, improving and making life easier. However, it is observed that this evolution has gaps in terms of care for the elderly population, including those in the countryside. The census of the National Household Sample Survey - PNAD (2015) highlights that 15% of Brazil's population lives in rural areas, which reveals that "not everything is urban," as Veiga (2004) reports. Currently, technology is the main ally for the rural producer concerning the improvement and optimization of costs in the production of crops. Still, it is observed that those who are ahead of these technologies are not the farmers themselves but their children, grandchildren, or an outsourced workforce.

The logic of inventions would be to contribute to society. However, as technological evolution becomes necessary and develops rapidly, some generations, including older people, need help following or adapting to them. In this sense, such concern meets the research problem presented. It challenges us as a researcher to answer the following question: What is the relationship of older people in the rural population of cooperatives with new ICTs?

Information and Communication Technologies (ICTs) correspond to the technical means used to treat information and aid communication; that is, ICTs mediate beings' informational and communicative processes.

In this perspective, the rural environment is seen as a distant or backward place compared to the urban environment, and this reality is justified by the lack of infrastructure and quality services, which leads us to believe that this is due to the low education and poverty of this locality.

Given this initial reflection, the need to observe the relationship between older people in the rural space of the Southwest of Paraná, especially the family farming cooperatives, with ICTs arises. It is worth noting that cooperatives play an important role in terms of the insertion of their accredited members in the local, regional, national, or international market - depending on their size and scope, in addition to contributing to the development of society, the generation of jobs, and income distribution in the region.

2 The importance of cooperatives for the rural environment

The cooperative movement began in Brazil at the end of the 19th century. According to Antonialli and Souk (2005), in the city of Ouro Preto (MG) in 1889, the first records of a consumer cooperative occurred, called the Economic Cooperative Society of the Public Employees of Ouro Preto. After that, states like Pernambuco, Rio de Janeiro, São Paulo, and Rio Grande do Sul also started to have cooperatives. As a result, the cooperative movement gained prominence on the national scene, and on December 16, 1971, the Cooperative Law nº 5.764 was promulgated, and the Legal Regime of Cooperative Societies was instituted.

For Santos (2002), the cooperative is an instrument capable of favoring rural areas' economic and social growth so that cooperatives can exercise their work more assertively and disseminate their values of democracy, freedom, equity, solidarity, and social justice. In Brazil, conventional agriculture and family farming are essential for social development. To have an idea as pointed out by the Brazilian Institute of Geography and Statistics (IBGE), in 2017, there were 5.073 million rural establishments in the country, with 76.8% linked to family farming. And because of the social, economic, and sustainable relevance of agriculture for the population, cooperatives, and cooperatives become tools that promote equality and social justice.

Rios and Carvalho (2007) corroborate by emphasizing that the social organization of rural producers can be seen as an instrument of emancipation and empowerment.

That is, associations are an effective instrument of transition between the informality of the first steps and the solidary insertion in the market. Thus, cooperatives have become both a form of social organization for farmers and a way to conduct business transactions. For Altman (2015), agricultural cooperatives play an important role in promoting rural development as mechanisms for employment generation, food security, income distribution, and potentially poverty reduction.

In addition, the relevance of the role of cooperatives in strengthening family farming can be seen because, in addition to representing a way of organizing production, adding value, eliminating intermediaries, and boosting local economies, cooperatives have also started to act as intermediary entities between family farming production and public institutional purchasing policies, such as the Food Acquisition Program (PAA) and the National School Feeding Program (PNAE). According to Altman (2015), it is worth noting that cooperative has been in evidence since 2012. The United Nations considered it the International Year of Cooperativism.

Another aspect is that, in the literature, according to Pires (2004), it has been an essential option in the economic sphere associated with local development policies, assuming, at the same time, a political dimension as a privileged way for social emancipation. Abramovay (1998) defines family farming as the sector of agriculture where the owners are the rural workers. To understand it, it is essential to know that it emerged as a form of production alternative to the monoculture and latifundium of the colonial period, mainly from the perspective of extractive productions such as the sugar, coffee, and rubber cycles.

The Organization of Brazilian Cooperatives (OCB, 2023) emphasizes that rural producer cooperatives are those whose means of production belong to the cooperative member. They are characterized by the services offered to members, such as receiving or marketing the joint production, storage, and industrialization, in addition to technical, educational, and social assistance. For the Ministry of Agriculture, Livestock and Supply (MAPA), the cooperative is a solid instrument of market access. It contributes to keeping farmers in the countryside by promoting the marketing of products and providing services to cooperative members.

And in this conjuncture, cooperatives emerge not only as a figure to leverage the economic growth of their members but also to contribute to facing the inequalities existing in this environment. When it comes to the use of technology, the vision of older people is that of a useless, isolated person in social and mental decline who does not know or cannot learn how to use such technological devices. For Verona et al., (2006):

> Internet knowledge is a link for the new century and, in addition to being a way to combat the social exclusion that older people experience, it is a space for communication, exchange with people from all over the world, and for constant learning. The growing informatization of contemporary society requires that older people take possession of this knowledge. In today's world, whoever holds information holds the power of a citizen (VERONA et al. 2006, p.191-192).

Based on the information described, which highlights the importance of cooperatives for the rural environment and social development, and based on the assumption that Family Farming Cooperatives are indispensable for dealing with social problems and demands, the digital exclusion of older adults in rural areas can be mentioned. In addition to benefits such as cognitive development, the use of technology by this public contributes to bringing them closer to relatives, friends, and other family members, preventing the development of motor and psychological problems, and contributing to their work autonomy.

3 The elderly in rural areas and new technologies

We live in an era of multiple transformations, and information linked to technological tools is in all spaces. Consequently, the Brazilian rural environment is also immersed in this new social panorama, needing to adapt to the recent changes. An example is the ICTs that have become facilitators of the Communication and Information processes. The growth in using and acquiring ICTs can be observed through data from the 2017 Brazilian Institute of Geography and Statistics (IBGE). The National Continuous Household Sample Survey (PNAD) revealed access to the Internet and television in permanent private households and access to the Internet, and ownership of mobile cellular telephony for people aged ten years or older.

In this sense, about the evolution and access to technological apparatuses, Augusto (2014) points out that:

> Although this account of the evolution of the media is short and very summarized, it is paramount to point out that such development does not mean that the new has supplanted the previous one(s). On the contrary, they have not only remained but have also been constantly adapting to new realities and enhancing their differentials (AUGUSTO, 2014, p. 69).

According to the data, internet usage increased from 64.7% in 2016 to 69.9% in 2017, with cell phones being the most used equipment for internet access. Usage in permanent households rose from 69.3% in 2016 to 74.9% in 2017. Also, according to the data, most people use the Internet to send or receive text messages, voice, or images, through other applications besides email.

Blanco and Canoves (2005) consider that Information and Communication Technologies directly impact those societies that have access and those that have not been able to incorporate them into their radius of action.

And amid this modernization that faces humanity that Augusto (2014) emphasizes that we are in a century marked by the new communicational paradigm and, thus, the author deduces that:

> The 19th century, with its inventions, took the first and most crucial step towards the beginning of the global information and communication society. Except for the last decade, the twentieth century was distinguished by centralizing information and communication technologies, transmitting messages from one to many (AUGUSTO, 2014, p. 70).

The constant need to insert older people into technology occurs due to the expectation of survival. The significant increase in longevity and technological expansion generated a relationship about sharing knowledge and information with a generation that was educated at a time when reading and simple calculations were enough to feel informed. From this perspective, Pereira and Neves (2011) report that: "it is necessary to promote a proper learning environment for the individuals in question, which passes through the creation of an interaction with the machine according to their needs and physical conditions".

Although it can be said that different audiences - children, young people, older people, and so on- when connected to the network can be potential producers and distributors of information, wherein Augusto's (2014) speech:

> The network allows everyone to become a journalist, of themselves, and of everything that can be witnessed with a digital camera, tape recorder, or keyboard. Personal sites multiply, expose the most diverse convictions and ideas, detail to the whole world, supported by photos, the most intimate details and the strangest personal extravagances of each other's lives (AUGUSTO, 2014, p. 71 Apud LÉVY, 2002, p. 52).

In this way, ICTs can favor older people who live in rural areas, enabling a position of dominance in directing their gaze to wherever they want and to whatever interests them at that given moment. Monteiro (2007) points out that ICTs will mediate processes, enabling a learning environment through dialogue and interaction. Thus, ICTs play a significant role since they allow network interaction and the shared construction of knowledge at speed never seen before, besides presenting a range of services and information, showing a sociocultural gain for those who use them.

It is in the perspective of change, of adaptation to the new, of allowing to broaden horizons that VIERO and SILVEIRA (2011) emphasize that:

> The profound transformations observed in the rural world in the last 30 years have generated a need for producers to adapt to a new reality in which subsistence production has given way to a complex agro-industrial system, and the boundaries between rural and urban have become increasingly blurred and diffused. Knowledge ceased to be a privilege and became a factor in the development of agriculture (VIERO and SILVEIRA, 2011, p. 258).

Given the advent of technology, the diffusion of ICTs has contributed to the shortening of space-time distances and the inclusion of new audiences and a geographic context, held or subjugated, as distant or backward. Still based on the authors:

> [...] digital inclusion represents a privileged channel for equalization of opportunities for all segments of society, whether urban or rural, becoming ever closer to citizenship and social inclusion. However, due to the late recognition of the importance of the theme in the scope of public policies, coupled with the scarcity of systematic sources of information, there are few diagnoses in the Brazilian context on the digital inclusion/exclusion binomial, especially in the rural setting, (VIERO and SILVEIRA, 2011, p. 258).

Given this reality, it is necessary to understand how the rural population has been appropriating information technologies and identify how cooperatives seek to contribute to reducing inequalities among rural people, especially older people. According to Miranda and Farias (2009, p. 385), "In the United States, regular surveys are conducted by the Internet and American Life Research project, whose main objective is to observe the impact of the Internet in families, communities, education and other contexts of American citizens' daily lives. And as far as older people are concerned, the authors reveal that this public "is synonymous with retirement, whose amount of free time is presumed to be greater than the rest of school-aged or adult citizens" (MIRANDA and FARIAS, 2009, p. 389).

4 Methodological Procedures

The present study is linked to the research line Regionality and Development of the Postgraduate Program in Regional Development (PPGDR) of the Federal Technological University of Paraná (UTFPR), Campus Pato Branco, integrating the works of the curricular component Population and Demographic Aging. Figure 1 shows the location of the cooperative studied, with highlights of the Southwest Region of Paraná, on the boundary of the municipality of Coronel Vivida and the urban perimeter.

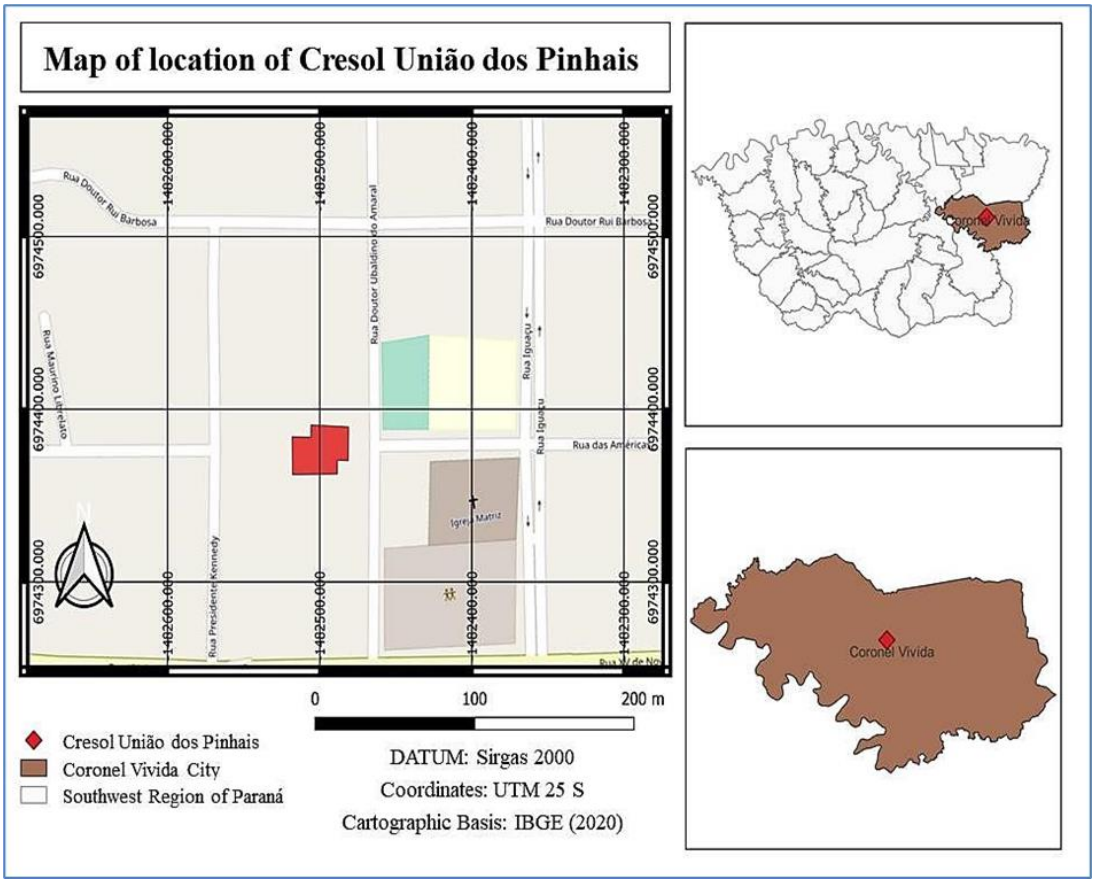

Figure 1. Location map of the Cooperative Cresol União dos Pinhais in Coronel Vivida. Source: Authors, 2023.

The municipality of Coronel Vivida originated from the discovery of the Campos de Palmas, which later "in the foundation of the Freguesia de Palmas, which would give rise to the current municipalities of União da Vitória, Mangueirinha, Chopinzinho and Coronel Vivida" (PLHIS, 2019, p. 19). According to the Social Plan for Housing of Social Interest (PLHIS) of Coronel Vivida (2019, p. 26), "the municipality of Coronel Vivida has a territorial extension of 684.42 km², where this extension is divided into 432.69 km² of the urban area and 251.73 km² corresponds to the rural area.

> In the 1990s, the Southwest region recorded the highest activity rate and the lowest unemployment rate among all the mesoregions of Paraná, as well as a formal employment growth above the state average. These factors certainly condition a significant part of its overall good performance. Most people employed in the region are engaged in agriculture, livestock, or forestry. However, as an indication of the urban transition moment, the new formal jobs are concentrated in retail trade, accommodation, and food services (PLHIS, 2019, p. 30).

Therefore, the Southwest region of Paraná is the one that is most characterized as an important stronghold of family farming, characteristic of Coronel Vivida.

Among the leading social actors from civil society are the Class Entities and Associations composed of the existing cooperatives in the municipality, as shown in Table 1.

Table 1. List of Cooperatives in Coronel Vivida.

COAMO Agroindustrial Cooperativa
COOPAFI Cooperativas de Comercialização da Agricultura Familiar Integrada
COOPERLATE VIDA
CRESOL Sistema de Cooperativas de Crédito Rural com Interação Solidária
SICOOB Coronel Vivida
SICRED Coronel Vivida
COOHAVIDA – Cooperativa de Habitação de Coronel Vivida

Source: Authors, 2023.

Given this universe of cooperatives in the municipality, the Cooperative Cresol União dos Pinhais was selected. It is a credit cooperative created initially to serve family agriculture, and today it operates the most diverse professional branches, as long as they are companies or public companies.

The choice of this cooperative is due to its coverage within the State of Paraná, and 80% of its operations are geared towards family agriculture producers, as well as having in mind that this company has communication and relationship models for its public in rural and urban areas.

On this path, the study was developed with the older people accredited to this cooperative; where to achieve the established objectives, exploratory research was adopted with a qualitative approach. According to Gil (2010, p. 41), experimental research: "[...] aims to provide greater familiarity with the problem to make it more explicit or to build hypotheses".

Thus, regarding the rural population, the city of Coronel Vivida has a diversification of rural properties that exploit grains, milk, and even agribusiness. Therefore, regarding the choice of the target audience, it is believed that the presence of technology in the life of the rural man can help him manage and optimize resources concerning agriculture and livestock, in addition to reconfiguring the traditional ways of living and doing agriculture.

To gather the necessary information, a semi-structured questionnaire was prepared via Google Forms, where it was applied by a phone call to understand better how the appropriation and use of technologies by older people happen since it was believed that there is a contact, even if nascent, of this public with technologies.

The selection of the older people was based on data provided by the Cooperative Cresol União dos Pinhais, observing and respecting the ethical care about the exposure of the interviewees, and the provisions of the General Law of Protection of Personal Data (LGPD), Law Nº. 13,709/2018, since it is a survey conducted by telephone contact provided by the cooperative.

Notably, the cooperative promoted contact with these older people regarding their acceptance and participation in our investigation to reach the objectives. Only after the member's approval did the suitable make their connection available for the interview.

Thus, among the older people who agreed to participate in the research, a sample of ten older people was selected, five men and five women of different ages, with priority being given to people over sixty years old since the study aims to establish the relationship of older people with information technologies, and according to the Brazilian Constitution, Law Nº. 10.741/2003, it is considered an older person, those aged 60 years or more.

Finally, the answers to the questionnaires were analyzed, and inferences were made about the results obtained. It is worth pointing out that the sample size was based on the number of older people who refused to participate in the research due to its application format.

Since this is an active methodology survey, it allows a better qualitative observation of the answers regarding the satisfaction of these older people with the appropriation and use of Information and Communication Technologies, which we consider essential for the study in question.

5 Results and Discussion

To understand the appropriation of each older person about ICTs, a semi-structured questionnaire was applied with closed multiple-choice questions, where the Google Forms platform was used to achieve the expected results. Before answering the questions raised in the form, the participants were instructed to read the Informed Consent Form (ICF) to participate in the research.

Thus, to delimit the profile of the actors in the field of study, questions were elaborated with themes that show the interviewee's approximation to the objectives intended to be reached and thus establish the relationship of these older people with Information and Communication Technologies.

Initially, the research sample would comprise five men and five women. However, due to the availability of older people to answer the questionnaire and the outdated telephone numbers provided by the cooperative, the research was carried out with six men and four women, prevailing the previous criteria, of different ages and sexes.

When asked if they have access to the Internet, it was found that 100% of the interviewees said yes, and based on the reports during the questionnaire application, it was revealed that there are multiple means of access - radio-internet, mobile data, optical fiber, etc. Thus, the vital link between rural people and older people with technology demonstrates this population's appropriation and expansion of the means of access to information.

Although the technological processes are transforming social relationships and cultural issues regarding the quality of access to the Internet, the vast majority of older people classified their use as Good, as shown in Figure 2.

However, it is highlighted that the rural space must be integrated into the shared knowledge of the social collective, the authors Godoy et al. (2020) point out that: "[...] for this, it is necessary to understand that ICTs are not the end, they are only instruments to help build more participatory, inclusive and collaborative societies".

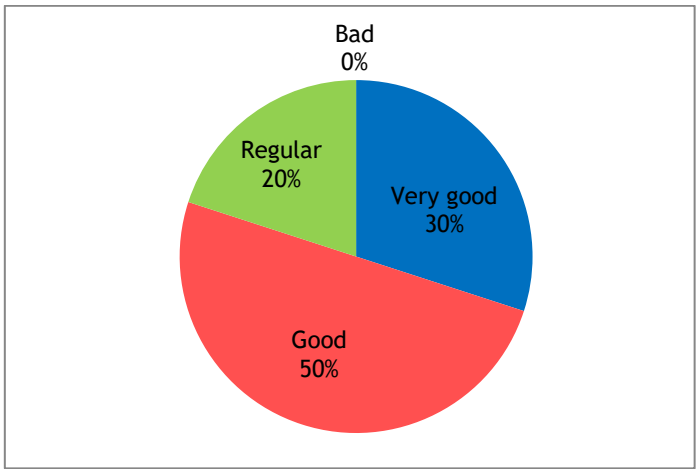

Figure 2. Internet access rating. Source: Survey Data, 2023.

In this sense, access to the Internet contributes to people being everywhere and in real-time. If observed, the percentages are relatively good and, in this sense, Godoy et al. (2020) apud Conceição (2012) will say that access to the network by older people: "[...] can confirm, analyze, expand and even question the messages transmitted daily".

Amidst the different access forms to the networks, most (60%) of the older people stated they had difficulties regarding internet access. In contrast, the others stated that they did not have any. It is worth pointing out that this difficulty is proportional for both genders if taken into account the quantitative sample and may also be related to network speed, content not understood, and even the layout in a reduced size, depending on the device used, as pointed out by the elderly interviewees. Henceforth, the insertion of ICTs in family farming contributes to developing potentialities, especially for women. Thus, Godoy et al. (2020) apud Silva (2016) will say that:

> [...] the appropriation of ICTs by women has expanded their participation in the decision-making processes of the family farm because, armed with information, women have become responsible for managing the resources and investments of the family business, earning the respect of the husband, children, and the community, which has a direct impact on their self-esteem and empowerment, (GODOY et al., 2020, p. 2087).

Given this scenario, the appropriation of technologies by older people in rural spaces allows cognitive development in the virtual field and the development of their potential regarding decision-making in their business, financial life, or even investments in a particular venture.

Godoy et al. (2020, p. 2087) report that: "[...] the lack of ICT supposes an inequality within the new networks, loss of the possibility of development and, therefore, a decline of these territories".

However, if the device most used by the older people questioned is observed, the smartphone stands out as a priority, followed by the notebook (Figure 3).

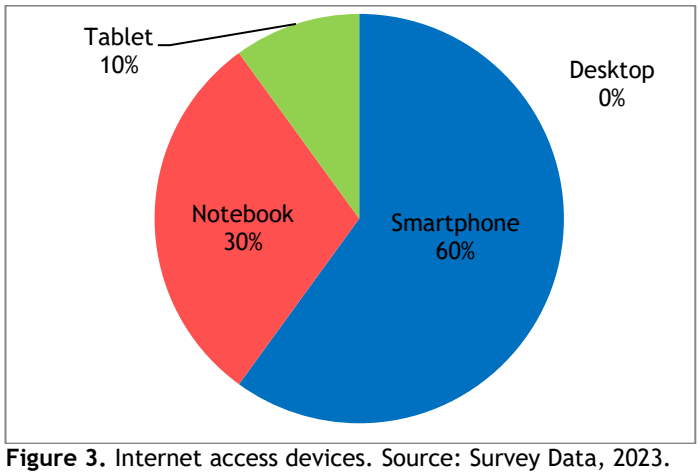

Figure 3. Internet access devices. Source: Survey Data, 2023.

Although the digital inclusion of older people is necessary, especially in rural areas, observing their abilities regarding Internet use is essential. As reported in the bibliography, this public suffers many dangers of various natures.

In this way, Godoy et al. (2020, p. 2089) state, "The understanding of contemporary rurality can offer support to public policies aimed at ICTs, and thus collaborate with rural and regional development".

Given this fact, we asked how older people would rate their skills in using ICTs, and what we see is that 50% said they were good at using digital tools, and 30% said they were regular (Figure 4).

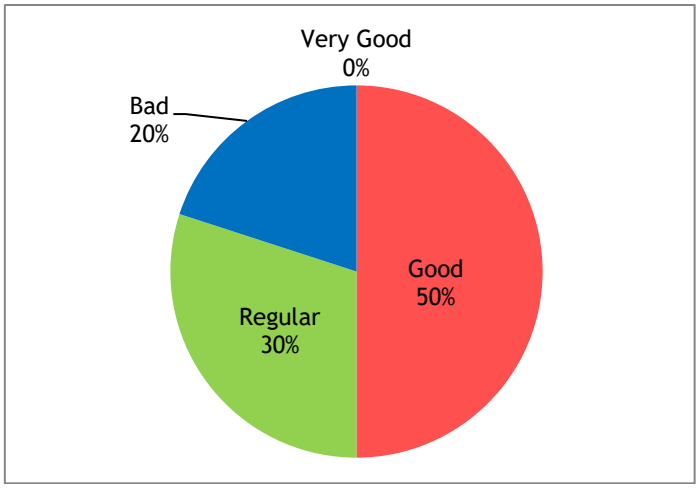

Figure 4. Classification of Technological Tools usage skills. Source: Survey Data, 2023.

Nevertheless, 20% still have doubts and consider the mastery of these technologies as bad, which leads us to think there is a lack of training and qualification for rural older people concerning digital inclusion. Thus, the authors alert for the integration of the rural man with informational issues, abolishing spatial distances and universal access to ICTs, it is understood that "it becomes necessary to overcome issues related to infrastructure costs, qualification of the population for the use and familiarity with the Internet," (GODOY et al., 2020, p. 2090).

For Augusto (2014), the man transforms the Internet, and the Internet transforms the man; in this sense, it can be said, in a particular way, that the virtual environment and the natural world establish connections and provide the condition of belonging to a group in the sense of approximation and interactivity by this public. Furthermore, 80% of the interviewees affirm that living and being in the countryside is not a condition that hinders their access to the Internet or new technologies, but they believe that training could be done because, at a certain age, one has difficulties; dissemination of explanatory videos, more giant letters (for those who have visual difficulty) or even training offered by the cooperatives to which they are accredited.

Regarding the development of rural areas over new technologies, the authors (GODOY et al., 2020, p. 2095) point out that: "the technological projects supported by ICTs for rural areas should aim at solving problems and their own needs, respecting the heterogeneity of the parcel where the urban-rural territories are inserted". In other words, it is necessary to give up the vision of the countryside as a distant or backward place and focus on the potential of new technologies for the social and economic development of rural people, predominantly rural older people, thus avoiding the digital exclusion of this public.

6 Conclusions

Technological innovation is a social reality. The advances are constant, and there is no way to escape. Thus, Information and Communication Technologies - ICTs, including older people, are essential in human beings' informational and communicative process. This public still needs more help with these tools' usability and digital inclusion.

Thus, this research aimed to analyze the appropriation and use of ICTs by older people affiliated with Cresol União dos Pinhais, a cooperative of family farming in the southwest of Paraná. It was observed that older people who participated in the research have access to various communication channels, such as internet radio, mobile data, and fiber optics. However, only half of the interviewees consider they have good skills in using them.

It is noteworthy that in the process of initial contact with the interviewees, most showed insecurity and doubt, not trusting that the research was scientific, questioning why, and even saying that "there are scams by phone and WhatsApp".

On the other hand, one of the other people older people, after understanding the purpose of the survey, commented on how the Internet has improved his life and that of his family since it is easier to do agricultural business, emphasizing that he knows that the investment made in the technology is for the long term. However, one can see the low level of education of some of these older people, which results in the need for a family member to solve problems.

The sample of older people living in the countryside of Southwest Paraná, affiliated with Cresol União dos Pinhais, showed the appropriation of ICTs, even with some difficulty and technical and skill challenges. However, they are aware of the importance of improving the use of tools for their cognitive development and other potentialities related to decision-making on their rural property since the appropriation of ICTs represents empowerment for this public, besides promoting competitiveness in the family farm market.

We conclude by highlighting the success of the data obtained since it is clear that the older people surveyed increasingly appropriate ICTs in their different formats and means of access. Finally, a report about the cooperative's participation in promoting its members' digital inclusion needs to be reported. This way, it would be a differential for the cooperative to offer a training service to its members regarding the use of technologies linked to the services and products provided by this company, thus promoting the digital inclusion of older people in the rural space and the technological context.

In particular, it is also necessary that the municipal government invests more in the training of this public through partnerships with the private sector and in the creation of support and training centers with modern equipment that ensure the effectiveness of the learning of this population because it was in the technological apparatus that society, in general, found ways to communicate and exchange information, keeping up to date amid the coronavirus pandemic that resulted, for a certain period, in social isolation, thus promoting the digital inclusion of older people who live in rural areas.

CREDIT AUTHORSHIP CONTRIBUTION STATEMENT

A.G.S. Cesar contributed with writing-review, editing and translation; D. Benso. Contributing with the literature review and the application of the questionnaires with the interviewed participants; M.L. Bernartt contributed in the corrections of the work before going through the translation, as well as in the direction of the results that corroborate the discussion of the theme. All authors approved the final manuscript.

DECLARATION OF INTEREST

The authors disclose that they have no known competing financial interests or personal relationships that could have appeared to influence the study reported in this manuscript.

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