

## THE USE OF ICT BY OLDER PEOPLE: CRITICAL FACTORS TO IMPROVE IT!

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### Abstract

The world population ages, and older adults become a significant consumer market. This group represents an increasing portion of Internet users and thus an important part of the online consumer market. This study aims to evaluate the factors that explain the greater Internet use by the older population, a group aged 60 years or more. It used secondary data from a Brazilian survey with 1,255 individuals, representing a population of about 8.7 million, and adopted logistic regression models. The results show that older people's frequency of Internet use is significantly influenced by household area (urban or rural), income, region of the country, and searches for information about products and services. The research supports professionals from public and private organizations regarding the influence of sociodemographic and Internet use factors, specifically for people over 60 years of age, since the frequency of Internet use by older people can be a critical success factor for developing strategies and policies.

This research consists of a combined analysis of several sociodemographic and Internet use variables, offering a comprehensive representation of reality. It contributes to the discussion on elderly inclusion in the consumer market, which is increasingly dependent on the digital environment.

Keywords: Digital inclusion; Older people; Frequency of Internet use; Digital marketing; E-commerce.

## 1. Introduction

The world's population ages, and older adults represent an increasing part of Internet users. In this sense, understanding the evolution and the landscape of Internet use among older persons can clarify how to support the use of digital media by this part of the population (Hunsaker & Hargittai, 2018).

The impossibility of using information and communication technologies (ICT) can lead to digital exclusion, defined in the literature as a stratification of those who have access to computers and the Internet and those who do not. The effect of this exclusion makes access to information unequal and, therefore, accentuates the inequality of access of certain groups in society (Becker & Becker, 2018; Joaquim, Oliveira, & Pesce, 2021).

According to the World Health Organization, the number of people over 60 years of age will reach two billion by 2050, representing a fifth of the world population (Joaquim et al., 2021). The Brazilian population ages at this same pace, maintaining the aging trend in recent years, increasing from 4.8 million older people in 2012 and surpassing the 30 million marks in 2018. Projections show that in 2050 – when life expectancy reaches more than 81 years – there will be approximately 52 million Brazilians over 60 years of age (IBGE, 2021). This fact calls for studies and public policies leading to the inclusion of less favoured and vulnerable populations in the digital culture, which is the case of older persons (Joaquim et al., 2021).

Studies show concern about inequalities in access, use, and quality of Internet use by older people. Regarding access to the Internet, the literature has focused on analyses at the national level or comparisons between countries. New technologies have become indispensable in everyday life, especially for the older population, due to

their dissemination. Thus, these new technologies facilitate the inclusion and expansion of the market for this audience (Adamczyk & Betlej, 2021). Thus, there is still room for studies on inequality in Internet access and use (Galperin, 2017; Galperin, Mariscal, & Barrantes, 2014; Senne, Portilho, Storino, & Barbosa, 2020).

In addition to individuals, governments and companies increasingly rely on electronic media to transmit and store information. Internet access brings many benefits, such as social networking, online shopping, online banking, paying utility bills, looking for new and better job opportunities, and more. Thus, not being connected negatively impacts the older population leaving them at a disadvantage (Bunyan & Collins, 2013; Garcia, Gomes, Costa, & Silva, 2021; Warren, 2007).

Considering the increasing older population scenario and the efforts for inclusive Internet use, it will become an important online consumer market for companies. Thus, digital marketing strategies, e-commerce, and tools that facilitate the relationship with older consumers will henceforth be a field of attention for professionals working in the area. A better understanding of the elements that contribute to increasing the frequency of Internet use by the older population will constitute a critical success factor for companies (Kovalenko, 2021; Páscoa & Gil, 2021; Yoo, 2021).

Internet access and use through digital technologies have spread worldwide, but a gap persists for certain age groups, especially the older population (Hunsaker & Hargittai, 2018; Seifert, Hofer, & Rössel, 2019). Although studies identify several factors that explain Internet use among older people, the relationship between such factors and frequency of use has received less attention. Thus, the following research question arises: what factors determine the increase in the frequency of Internet use by elderly people?

Therefore, understanding the factors contributing to the higher frequency of Internet use by older people can support their digital inclusion and the development of their potential for using online tools. In this sense, this study has as objective to evaluate the factors that explain the greater Internet use by the older Brazilian population, a group aged 60 years or more, considering secondary data and logistic regression models.

## 2. Rates of Internet use among older adults

The Internet represents an important shift in the way people connect, obtain information, and conduct their daily lives. For example, in the United States, the Pew Research Center has documented the growth and distribution of the Internet for over 20 years (Pew Research Center: Internet Science and Technology, 2021). In early 2000, when the Pew Research Center began systematically collecting data on American Internet use, about half of all adults were already online. About 53 percent of American adults aged 65 and older used the Internet or e-mail, although they were still less likely to use it than all other age groups. Among users in this group, about 70% used the Internet daily.

However, this use was still restricted and based mainly on e-mail communication (Zickuhr & Madden, 2012). This dynamic continued in 2020, with the over 65-year-olds group using the Internet the least compared to other age groups, but also the group that has grown the most in the last ten years (Pew Research Center: Internet Science and Technology, 2021). In 2020, around 93% were already using the Internet.

In Brazil, the ICT Household survey (*TIC Domicílios*) investigates access to ICT and Internet use and has been conducted since 2005. The survey shows an increase in Internet use by the population aged ten or over from 34% in 2008 to 74% in 2019. In the case of the older population (aged 60 and over), the number of users reached just over a third (34%), a proportion that also increased throughout the historical series, given that in 2012, the percentage was only 8% (Núcleo de Informação e Coordenação do Ponto BR - NIC.br, 2020).

Most older people in Brazil use the Internet every day or almost every day in their own home, on desktop or laptop computers, with the main purpose of sending and receiving messages, seeking information to learn or investigate a subject, finding information about goods and services and use news, social media, and health information sites. Some factors related to maintaining this use are associated with income, education, and not having a caregiver (Krug et al., 2018).

Thus, although older people are less likely to adopt the Internet than other age groups, use is increasing (Barbosa Neves, Fonseca, Amaro, & Pasqualott, 2018). Most of them value the Internet as a useful tool to keep in touch with their family and friends, believing that the network has improved their connections, in addition to other benefits,

such as improved health conditions, which can influence active and successful aging (Castro, Vitali, Bousfield, & Camargo, 2020; Thayer & Ray, 2006).

### **3. Sociodemographic and Internet use determinants by older people**

Digital technology is an essential component of full participation in society. It allows older people to increase their independence as it provides easy access to information and increased contact with friends and family. Using mobile devices can be especially important for those who have limited mobility or live alone (Román-García, Almansa-Martínez, & Cruz-Díaz, 2016). Such devices gain prominence among the elderly in times of crisis, such as the one promoted by COVID-19 (Yoo, 2021).

An increase in the use of services through the Internet among the elderly is expected, since, in general, the population is more interconnected by information and communication technologies and mobile devices. However, the changes resulting from advancing age bring unique challenges to the elderly, as several studies point out. (Páscoa & Gil, 2021; Yoo, 2021).

The following sources of digital inequality can be cited: a) specific user skills; b) time spent on the network and its quality; c) place of residence; d) unequal access to the Internet and information and communication technologies; e) level of education; f) income; g) differences in the quality of the technologies used; h) age; i) speed of adaptation to new technologies; j) user adaptability to change; k) willingness of users to assume risks (Adamczyk & Betlej, 2021; Kryszczuk & Green, 2015).

Some studies have analysed the relationship between the frequency of Internet use and digital exclusion with sociodemographic factors (Afshar Ali, Alam, & Taylor, 2019; Whitacre, 2010). Park (2017), for example, found that high population density and remoteness are related to lower levels of Internet use. The digital disadvantage is increased for people living in rural areas with lower levels of education.

Therefore, the geographic factor is important as rural and remote areas are at a disadvantage due to the lack of physical infrastructure and less accessible telecommunications services (Afshar Ali et al., 2019; Salemink, Strijker, & Bosworth, 2017). In Australia, for example, remote communities and rural areas use ICT less compared to urban areas (Afshar Ali et al., 2019; Alam & Imran, 2015; Park, 2017).

The digital divide and its sociodemographic determinants were also studied among countries and their citizens, finding that the richest, the youngest, and the most educated use the Internet more often (Campos, Arrazola, & Hevia, 2017; Lindblom & Räsänen., 2017; Pratama, 2017; Rice & Pearce, 2015; Yu, Lin, & Liao, 2017). These sociodemographic determinants are important for the public policy debate, being a significant concern in many countries to reduce the digital divide (ITU, 2016; Ragnedda & Muschert, 2013; Warren, 2007).

The learning of ICT by older populations is influenced by higher education, higher income, and the persons' performance in professions that require greater intellectual effort. This demonstrates that specific population characteristics predispose an interest in learning about ICT and, consequently, in acquiring knowledge of the benefits that this learning can bring to individuals (Páscoa & Gil, 2021).

Older consumers have intensified their online purchases more rapidly due to the COVID-19 pandemic. Increased risks of infection have forced older people to adopt new technologies and become more Internet literate. The considerable growth in purchases, the frequency of purchases, and the amounts spent on e-commerce are discussed worldwide. Some research suggests that older people will drive the growth of e-commerce in the coming years. Older persons who have invested effort, time, and money in understanding the fundamentals of online shopping and the devices and communication technology behind them will continue to consume online (Kovalenko, 2021).

Brito et al. (2018) analysed twenty-five institutions providing internet services, including non-profits and local, state, and federal government agencies in Brazil. For the authors, these institutions present challenges inherent to the process of technological innovation related to the physical, human, digital, and social resources involved. Developing countries, such as Brazil, have cultural, demographic, geographic, and socioeconomic disparities that generate gaps between planning and the beneficiaries of innovations.

The study by Brito et al. (2018) identified scenarios with low Internet use due to poor infrastructure and low education and income levels. Also, the authors observed that the increase in the use of ICT by citizens requires public policies to expand skills and access to ICT and depends on reducing inequalities in the country.

The challenges older people face in managing their finances by digital means are substantial. This group has significant fears about the rapid evolution of e-banking

technologies (Okonji & Ogwezzy, 2018). Older people use the Internet for communication purposes via e-mail, the most frequent ICT tool for this group. However, Klímová, Poullová, Šimonová, Pražák, and Cierniak-Emerych (2018) state that the second most common reason for using the Internet is Internet Banking (e-banking), followed by communication via Skype and photo sharing. Their study also suggests that older people should be better trained, as training can help them overcome the psychological and social barriers that pose restrictions on Internet use. Trabelsi-Zoghalmi, Berraies, and Ben Yahia (2020) complement these authors stating that age is a moderating variable in the use of e-banking services. The trust perceived about the banking institutions seems to determine the customers' electronic satisfaction.

#### **4. Development of the research hypothesis**

Although Internet access through digital technologies has spread worldwide, a gap persists among age groups (Hunsaker & Hargittai, 2018; Seifert et al., 2019).

Research on why older people use the Internet has highlighted the relevance of psychological factors (Cattaneo, Malighetti, & Spinelli, 2016), health-related barriers to accessing digital technologies (Lelkes, 2013), and multiple sociodemographic factors, especially education and income, as predictors of Internet use (Barbosa Neves & Amaro, 2012; Lelkes, 2013). When considering the sociodemographic, demographic, and geographic determinants, the complexity of the digital divide becomes evident (Park et al., 2015; Park & Kim, 2015).

Although research has identified several factors that explain why older people use the Internet, the relationship between the factors and frequency of use has received less attention. Thus, understanding the frequency of use by the older population can support the digital inclusion of these individuals (Afshar Ali et al., 2019; Alam & Imran, 2015; Brito et al., 2018; Campos et al., 2017; ITU, 2016; Kovalenko, 2021; Lindblom & Räsänen., 2017; Okonji & Ogwezzy, 2018; Park, 2017; Páscoa & Gil, 2021; Salemink et al., 2017; Trabelsi-Zoghalmi et al., 2020; Whitacre, 2010; Yoo, 2021).

Thus, based on the literature, the following hypothesis is raised:

H1: Sociodemographic and Internet use determinants influence a higher frequency of Internet use by older people.

## 5. Methodology

Secondary data were used and treated using the R software, package survey, which considers the sample selection structure (weight, stratum). Full details and the methodology are presented in the next sections.

### 5.1. Data sources

The secondary data was obtained from the ICT Household survey conducted in Brazil in 2019 (*TIC Domicílios 2019*). It is a study carried out by CETIC.br (<https://cetic.br/pesquisa/domicilios/>), the department of The Brazilian Network Information Centre (NIC.br) which conducts research related to the access and use of Information and Communication Technologies (ICT) in Brazil since 2005 (Núcleo de Informação e Coordenação do Ponto BR - NIC.br, 2020).

This research used data from the 2019 edition, built with data collected between October 2019 and March 2020. CETIC.br adopts research methodologies based on guidelines and parameters established by multilateral international organizations, such as ECLAC (Economic Commission for Latin America and the Caribbean), EUROSTAT (Statistics Institute of the European Commission), ITU (International Telecommunication Union), OECD (Organization for Economic Cooperation and Development), UNESCO (United Nations Educational, Scientific and Cultural Organization), and UNCTAD (United Nations Conference on Trade and Development).

Data were collected by sampling, considering Brazilian households and their population over 10 years of age as the target population. The survey uses information from the Demographic Census and the National Household Sample Survey, both conducted by the Brazilian Institute of Geography and Statistics (IBGE). Given the breadth of the Brazilian population, the sampling is characterized as being random, stratified of clusters in multiple stages of selection.

For the *TIC Domicílios* survey, Cetic.br collected primary data using mobile devices and structured questionnaires and adopted the CAPI (Computer-Assisted Personal Interviewing) method. The sample has data from 20,536 households in 349

municipalities, with national geographic coverage, which represents, by inference, the Brazilian population.

## 5.2. Target population

The target population of this research was older individuals (over 60 years old) who used the Internet in the last three months (Internet users), totalling 1,514 responses. In addition, individuals who could not answer or who declared “do not know” or “not applicable” were excluded, leaving the final sample for this study with 1,255 responses representing 8,741,806 individuals in the population.

## 5.3. Definition of variables

A variable related to the frequency of Internet use was established to assess the proposed hypothesis. The following sociodemographic factors were considered: gender, age group, level of education, family income, economically active population, Brazil’s regional divisions, economic class, whether the respondent sought information about a product or services, made use of e-Banking, made use of e-Commerce, phone plan, and whether they used e-Government. Table 1 presents the definition of each of these variables.

Table 1 – Definition of variables used in the research

<b>Dependent variable</b>	<b>Variable description</b>
Frequency of Internet use	Frequency of Internet use in the last three months
<b>Socioeconomic variables and Internet use</b>	
Gender	Corresponds to the division into male or female
Age group	Age group established based on the age
Level of education	Divided in up to high school and higher education
Family income	Family income declared by respondents, in minimum wages (MW)
Economically active population	Respondent’s condition regarding

	economic activity
Household area	Urban or Rural
Region of the country	Regions of Brazil (North, South, Central-West, Northeast, Southeast)
Economic class	Economic class (using Brazilian standards - Critério <i>Brasil 2015</i> )
Researched information about products or services	In the last three months, the respondent used the Internet to seek information about products or services
e-Banking	In the last three months, the respondent used the Internet to check financial information or make payments or other transactions
e-Commerce	In the last 12 months, the respondent bought or ordered products or services via the Internet, even if the payment was made offline
Phone plan	The respondent has a phone contract or uses the pay-as-you-go model
e-Government	Individuals that used electronic government

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Source: Elaborated by the authors

The choice of variables was based on those used in previous studies found in the literature reviewed.

#### **5.4. Data analysis methods**

The data were analyzed using a logistic regression model to assess the influence of independent variables related to sociodemographic and Internet use factors on the dependent variable frequency of Internet use. This approach made it possible to assess the relationship between the variables and statistically understand the factors influencing the frequency of Internet use by older people in Brazil.

In the logistic regression analysis, the Wald test was performed, which aims to measure the degree of significance of each coefficient of the assumed logistic equation for the model (Domínguez-Almendros, Benítez-Parejo, & Gonzalez-Ramirez, 2011; Hair, Black, Babin, Anderson, & Tatham, 2009; Heeringa, West, & Berglund, 2017).

## 6. Presentation and analysis of results

Table 2 presents results on sociodemographic and Internet use factors by the older population who used the Internet in the last three months. Approximately one-third of this population is in the age group of 76 years or more. About 60% earn more than two minimum wages, and a little more than half have at least higher education, which indicates that this group of Internet users has a higher level of education and income. In addition, despite being older, approximately 40% are economically active, and 9 out of 10 reside in urban areas.

In terms of Internet use, although about 84% use it every day or almost every day, only a quarter use e-banking and e-commerce services. On the other hand, this population uses e-government and looks for information about products or services more often than the services mentioned above.

Table 2 - Estimates of totals and percentages concerning the frequency of Internet use, sociodemographic and Internet use factors

Variable	Responses	Total	Percentage
Frequency of Internet use	Used every day or almost every day	7,342,105	84.0
	Used least once a week or less	1,399,701	16.0
Sex	Male	3,999,418	45.8
	Female	4,742,389	54.2
Age group	60 to 65 years	900,548	10.3
	66 to 75 years	4,627,815	52.9
	76 years or over	3,213,442	36.8
Level of education	Up to High school	4,066,302	46.5
	Higher education	4,675,505	53.5
Family Income	Up to 1 Minimum wage (MW)	1,475,485	16.9
	More than 1 MW up to 2 MW	2,009,912	23.0
	More than 2 MW up to 3 MW	1,987,992	22.7
	More than 3 MW	3,268,417	37.4
Economically active population	Employed	3,726,633	42.6
	Unemployed	5,015,174	57.4
Household area	Urban	8,203,986	93.8

	Rural	537,820	6.2
Region of the country	South East	4,431,010	50.7
	North East/North	2,044,994	23.4
	South	1,660,473	19.0
	Central-West	605,329	6.9
Economic class	A	482,372	5.5
	B	2,374,763	27.2
	C	4,398,919	50.3
	D / E	1,485,752	17.0
Sought information on products or services	No	4,942,870	56.5
	Yes	3,798,936	43.5
e-Banking	No	6,645,164	76.0
	Yes	2,096,642	24.0
e-Commerce	No	6,242,489	71.4
	Yes	2,499,317	28.6
Telephone plan	Pre-paid	4,143,527	47.4
	Contract	4,598,279	52.6
e-Government	No	4,550,688	52.1
	Yes	4,191,118	47.9

Source: elaborated by the authors

The next step was to verify whether the frequency of Internet use is related to sociodemographic and Internet use factors. Table 3 presents the logistic regression model, the dependent variable is the frequency of Internet use, and the independent variables are gender, age group, level of education, family income, economically active population, region of the country, economic class, researched information about products or services, use e-Banking, use e-Commerce, telephone plan, and if they use e-Government.

Table 3 – Logistic Regression for the frequency of Internet use

Coefficients	Model	
	Odds Ratio	p-value (sig)
(ref. = Sex male)		

Female	1.347	0.277
(ref. = Age group 76 years or more)		
60 to 65 years	1.237	0.656
66 to 75 years	1.282	0.593
(ref. = Level of education – Up to high school)		
Higher education	0.916	0.758
(ref. = Family income - Up to 1 MW)		
More than 1 MW up to 2 MW	1.117	0.754
More than 2 MW up to 3 MW	2.394	0.027*
More than 3 MW	2.069	0.052 <sup>#</sup>
(ref. = Economically active population – Employed)		
Unemployed	1.242	0.456
(ref. = Household area - Urban)		
Rural	0.353	0.002**
(ref. = Region South West)		
Northeast/North	2.259	0.028*
South	1.053	0.867
Central-West	0.645	0.289
(ref. = Economic class - A)		
B	0.546	0.436
C	0.601	0.521
D/E	0.536	0.436
(ref. = Sought information on products/services - No)		
Yes	2.103	0.002**
(ref. = e-Banking - No)		
Yes	1.924	0.200
(ref. = e-Commerce - No)		
Yes	1.005	0.989
(ref. = Telephone Plan - Pre-paid)		
Contract	1.175	0.474
(ref. = e-Government - No)		
Yes	1.124	0.625

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Sig codes: \*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$ , # $p < 0.1$

Source: Elaborated by the authors

Regarding the regions of Brazil, there is a significant difference only between the Northeast/North and the Southeast regions, the latter being used as a reference in the logistic regression performed because it is the most populous and economically most relevant in the country. No significant differences were found when comparing other regions (South vs. Southeast and Central-West vs. Southeast). The data show an approximately 2.3 times more chance of an older person accessing the Internet when they live in the Northeast/North than in the country's Southeast region. This scenario may be linked to the lower availability of in-person options in the North/Northeast regions (for example, supermarkets, stores, restaurants), making older people depend on the use of online tools to obtain goods and services (Brito et al., 2018; Muñoz-Rodríguez, Hernández-Serrano, & Tabernero, 2020; Núcleo de Informação e Coordenação do Ponto BR - NIC.br, 2020).

As for family income, there is a significant difference between those who declared an income of two to three minimum wages (MWs) and above three MWs and those who declared a family income of up to one MW (the latter used as reference). The data show that older people are at least twice as likely to access the Internet more frequently when they have an income above two MWs than those who live in families making one MW. When comparing with the group of up to two MWs, no significant differences were found. This may be linked not only to Internet access but also to the older population's socioeconomic conditions. In the poorest strata of the population, older persons have greater difficulties accessing the Internet and meeting their material and social needs (Campos et al., 2017; Krug et al., 2018; Lindblom & Räsänen., 2017; Pratama, 2017; Rice & Pearce, 2015).

Regarding the household area, there is a significant difference in the frequency of Internet use between older people living in rural areas compared to those living in urban areas, used as a reference in the logistic regression. Data show that living in rural areas reduces the chance of using the Internet every day or almost every day by 65% compared to living in urban areas. This may happen because older people in rural areas do not have access to Internet infrastructure and services or knowledge to use it to meet their physical, material, and social needs (Afshar Ali et al., 2019; Alam & Imran, 2015; Park, 2017; Saleminck et al., 2017).

Regarding the variables of Internet use, 'sought information on products and services' presents a significant difference. Older people who frequently used the Internet were 2.1 times more likely to seek this type of information, an interesting finding for professionals from public and private organizations. Thus, when older people cannot enjoy the so-called buying journey and the sensory experience physically at the point of sale, they could be offered the opportunity to experience a similar buying journey online. Marketing initiatives that make the virtual experiences of this target public more vivid could be an alternative to increase sales. Adopting omnichannel strategy and actions that take the point of sale to older consumers through live broadcasts, online samples, live stores, and education processes about products and services are alternatives that deserve specific focus to address this group of consumers (Lemon & Verhoef, 2016; Rosenbaum, Otolara, & Ramírez, 2017; Temkin, 2010).

The other variables (gender, age groups over 60 years, level of education, economically active population, economic class, e-Banking, e-Commerce, telephone plan, and e-Government) did not show significant differences between their categories. These variables were not as relevant to explain a possible higher frequency of Internet use by older people.

Hypothesis H1 was partially confirmed as significant influences were found for the region of the country, household area, and family income, and sought information about products and services concerning the frequency of Internet use by older people. Thus, complementary analyses were conducted involving the interaction effects based on empirical evidence from the relationship between the independent variables. The interaction effect is a way to analyse combinations of variables for a more extensive visualization of the results.

After calculating the polychoric correlation between the Internet use variables, high correlations were found between them, except for the telephone plan. Thus, six interactions were made, namely: 1) sought information about products and services, and e-Commerce; 2) sought information about products and services, and e-Banking; 3) sought information about products and services, and e-Government; 4) e-Commerce and e-Banking; 5) e-Banking and e-Government, and 6) e-Commerce and e-Government.

The only significant interaction was between the variables e-Banking and e-Commerce, which means that individuals over 60 years old who perform both activities have a higher frequency of Internet use.

## 7. Conclusion

This article analysed the influence of sociodemographic and Internet use factors on the frequency of Internet use by people over 60 years of age. Such research is relevant as it contributes to understanding the factors that influence the use of ICT among older age groups.

Given the existing gaps in Internet access between age groups, the inclusion of the older population becomes an important agenda. Studies have identified several factors that explain why older people use the Internet. However, the relationship between the factors and the frequency of use has received less attention.

Socioeconomic and demographic inequalities create difficulties for the population in general and also regarding the use of the Internet, a problem that is reinforced for the older age group (König, Seifert, & Doh, 2018). Among the older ones, higher education is relevant because when comparing the different educational levels (university degree, with admission but without a degree, high school), different experiences of Internet access were observed (Anderson & Perrin, 2017). An analogous situation was found regarding the relationship between income and Internet use. For example, in the United States, high- and middle-income elderly people are considered to be more frequent Internet users when compared to lower-income elderly people (Anderson & Perrin, 2017). Regarding economic status, some studies have found that the elderly population and those with better economic status also use the Internet more (König et al., 2018).

Models are simplifications of reality that aim to study relationships between variables, but the more basic, the less they represent this reality. This study combined several variables, obtaining a more comprehensive and reliable representation of reality, which is one of its academic contributions. In addition, the work was conducted with a representative sample of the target population, allowing to extrapolate the results for broader and more precise decision-making.

Among the managerial contributions is the support to professionals from public and private organizations to improve digital marketing strategies and policies considering the influence of sociodemographic and Internet use factors when it comes

to a target public over 60 years old. The findings indicate how these professionals can be more effective with investments to communicate with this segment.

This work is limited by the secondary data used in the research, however future studies may consider other factors, such as variables designed to explain the consumer's purchase decision-making process.

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