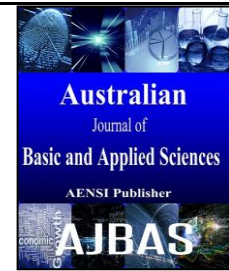




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### New-Age Elderly and Technology

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#### ABSTRACT

A new segment of consumers is gaining attention from marketers: the new-age elderly. This subgroup is less concerned with possessions and is interested in living new experiences and challenging themselves. In fact, today they are not classified according to their chronological age, but rather by their behavior. It is also noted that during the past few years, their daily use of technology has increased significantly, but very few studies have been developed to understand this phenomenon. Therefore, the main goal of this study is to understand the relationship between the new-age elderly and technology, focusing on the female gender. A qualitative study was developed, in which seven video-recorded in-depth interviews were made with women between sixty and seventy years old, residents of Porto Alegre, Brazil. One of the key findings of the study was that this public understands technology not only as tangible goods, but also as intangible attributes, such as advance, readiness, speed and evolution. It was also found that communication and entertainment are the main features of technology; however, most participants use it also as a source of information. The learning process regarding technology is different for this public, compared to younger age ranges, with all participants presenting a similar behavior: hiring professional help to learn. Technology products' and services' purchase decisions, as well as influencers and advisors, are also explored in the article.

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### INTRODUCTION

A new segment of consumers is gaining attention from marketers; this subgroup of elderly people is somewhat different from what one would expect from individuals over their sixty years old. New-age elderly people are less concerned about possessions and are much more involved, compared to younger people, in experiencing new things and challenging themselves on new adventures. They think about themselves as younger in age and outlook, they are self-confident and feel like they have control over their lives (Schiffman and Sherman, 1991).

There is an increasingly popular view that new-age elderly people should not be viewed as if they compose a single market segment, instead they must be perceived according to their own behavior. For instance if a consumer who is in her sixties perceives herself as being in her forties, there is a possibility that she really belongs to a different market than

indicated by her chronological age (Barak and Schiffman, 1981).

It is noted that during the past few years, the daily use of technology by the new-age elderly has increased significantly; however, very few studies have been dedicated to the subject matter, especially in the Brazilian market. Given the gap identified in the literature, the current study aims to understand the overall relationship between the new-age elderly and technology. The authors also intend to understand the process of acceptance and use of technology by that public, as well as their drivers of motivation to adopt different types of technologies in their daily life.

To achieve the study's goals, the authors opted for a qualitative approach, conducting in-depth interviews with seven women in their sixties. The qualitative approach was chosen because the study has an exploratory purpose, aiming to represent people's perspective about a contextual phenomenon that is part of their lives. The interviews were recorded for the later development of a videography.

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This article is divided in different chapters. First, the background theory used by the authors, including aspects regarding the new-age elderly behavior and about technology is presented. Following, the method is described and the main discoveries are reported. In the last section, conclusions are presented, as well as limitations and suggestions for future researches.

#### ***The new-age elderly behavior:***

According to Schiffman and Sherman (1991), age has been proving to be more a state of mind than a physical state. Acknowledging this fact, Barak and Schiffman (1981) have proposed a self-report perceived age variable, which is called "cognitive age". This new-age measure captures four age-related sub-dimensions: (1) feel-age, (2) look-age, (3) do-age and (4) interest-age. By examining these four dimensions, they found that older people, feel, look, act and have interests of others, younger than themselves (Barak and Schiffman, 1981). The study of Schiffman and Sherman (1991) revealed that the new-age elderly have strong beliefs that age is much more than someone's age and it has to do more with state of mind than chronological age. These beliefs come from feeling, thinking and acting younger than expected and perceiving themselves to be different from older people who think of themselves as actually older.

The behavior of the new-age elderly is more connected with emotions, if compared to younger people. According to socioemotional selectivity theory, people think about time in two different ways: time is either limited or expansive (Cartensen *et al.*, 1999). For Cartensen *et al.* (1999) the elderly perceive time as limited, therefore, they tend to be present-oriented and focus their attention on what can be experienced and enjoyed right now. That perspective has consequences for older adults, such as focus on intimacy and affective gain in social interaction. In some way, elderly people are more interested in social interaction that can provide the intimacy that they are looking for, which can result in a limited number of social activities (Williams e Drolet, 2005).

Schiffman and Sherman (1991) propose that there are two personality traits that are highly connected to the new-age elderly consumer. First, they appear to have a strong feature of self-confidence regarding their purchase-making skills, which means that they are not afraid of making mistakes when it comes to buying something. Second, they use their experience on consumption as an opportunity to feel more in control about their own lives and they appreciate feeling as if they are responsible for the consequences of their actions. For example, they expect to manipulate, for their own advantage, diverse aspects about their aging process and that's why they like to keep themselves involved,

active and fit (this explains the popularity of fitness programs with mature and older people).

This accumulated experience on consumption results on a different shopping experience compared to younger people. According to Schiffman and Sherman (1991), the older consumers tend to rely more on their prior experience or internal resources of information than on external sources, such as advertising and word-of-mouth, to evaluate products and services. According to Yoon (1997), people tend to rely increasingly on experiential and contextually based forms of processing as they grow older. Previous research suggests that older people tend to rely on schema-based processing, which is considered to be easier to engage than detailed processing since it requires assessing information at a theme level rather than at a level of specific details (Yoon, 1997). By accessing their prior shopping experiences when selecting new products, they gain time and energy to invest on pursuing experience-rich products and services (Schiffman and Sherman, 1991).

Another characteristic pointed out by Schiffman and Sherman (1991) is that the new-age elderly consumer has a different opinion about possessions compared to younger people. Different corporate sponsored researches have pointed out that this subgroup of consumers is more involved in seeking new experiences and creating new personal challenges instead of consuming just for the sake of consuming. They are more interested in consuming for the experience and therefore are more open to mind-expanding products and services.

Schiffman and Sherman (1991) also believe that the new-age elderly consumers are especially discerning and knowledgeable. They are not open to minor product variations or unnecessary changes like younger and less experienced consumers. These consumers react well to products and services that satisfy a real need, but they are adverse to new products that enhance their own potential limitations, like products that excessively focus on negative age-related aspects (Schiffman and Sherman, 1991).

According to Arber and Cooper (1999) there are some differences between how men and women deal with getting older and the disabilities that come along with this process. While older disable men usually have a spouse to provide care, 60% of older women live alone and therefore they have to rely on other family members, neighbors or friends to help them with their needs (Arber and Cooper, 1999).

#### ***Technology and elderly people:***

Traditionally people expect that older adults will encounter difficulties accepting innovation, nevertheless technology is increasingly influential in the consumer's shopping experience, including those of older consumers (Gilly and Zeithmal, 1985). As noted before, older consumers respond well to new products that meet their needs and offer something

different than previous products (Schiffman and Sherman, 1991). However, it is important to note that the way these new products are communicated is extremely related to its success among this public (Gilly and Zeithmal, 1985). To Gilly and Zeithmal (1985) technologies that offer superior efficiency or effectiveness have to be communicated to elderly consumers in a way that the adoption process is speeded up, in this case that means that organizations interested in communicating with this public about innovations should contact them directly rather than rely on publicity or word-of-mouth. (Schiffman and Sherman, 1991; Gilly and Zeithmal, 1985).

A number of factors influence the use of technology in old age, such as technology generation, education, socioeconomic status, cognitive abilities and attitudes (Oppenauer, 2009). It seems that older people have more difficulties on dealing with new technologies compared to younger people; therefore, they are less capable to benefit from innovations in technology. According to Czaja *et al.* (2001) those difficulties can result of the loss of cognitive abilities such as attention, memory, speed processing and problem solving. Those aspects are highly related to the success of use of technology. However, according to Oppenauer (2009), background research on this topic has demonstrated that older people can deal with new technologies as well as younger people if they receive proper training, which means that the level of training of new skills seems to have more influence on computer performance rather than age and age related attitudes.

Oppenauer (2009) suggests that motivations and needs are the main drivers of the adoption of new technologies by the elderly consumers. The main motivation for older people to use technology is to maintain social contacts in order to maximize social and emotional gains (Cartensen *et al.*, 1999). In addition, user needs are highly linked to motivation and technology adoption, since through technology the elderly can exercise their physical and mental health, therefore guaranteeing some autonomy and independency (Oppeneauer, 2009). Also, according to Alsarayreh *et al.* (2011) technology helps to access information easily, therefore, that could help elderly people to find information on their own, without having to rely on others.

According to Garbarino and Strahilevitz (2004), elderly women are less interested in the Internet as men, for that reason, they are less likely to buy online. This could be a consequence of the perceived risk that women see in a variety of domains including financial, medical and environmental areas, the risk they perceive in general are higher compared than the ones perceived by men (Garbarino and Strahilevitz, 2004). Also, we can take into consideration that women are more concerned about the effect that buying online could have on their personal privacy, although they do not adopt

protective behaviors to reverse this situation (Sheehan, 1999).

Recent findings from Mitzner *et al.* (2010) showed that positive attitudes toward technology outnumbered negative attitudes towards technology among older people, which goes against the stereotype that older adults are afraid or unwilling to use technology. In the Mitzner *et al.* (2010) study, positive attitudes toward technology were most frequent related to how technology supported activities, enhanced convenience and contained useful features. On the other hand, negative attitudes were associated with technology, thus creating inconveniences, unhelpful features and security and reliability concerns (Mitzner *et al.*, 2012).

For Wandke, Sengpiel and Sonksen (2012) it was in the beginning of the mid-1990s that the purpose of computer usage changed, the Internet and its main two applications - email and the World Wide Web - became increasingly interesting for older people. Most of them started to buy computers to access the Internet, instead of the traditional computing tasks; this tendency, combined with the availability of devices that did not resemble a traditional computer, strongly supported the success of new devices like the iPad (Wandke *et al.*, 2012). Even though in countries such as the United States the Internet penetration is high – around 93% - it is important to note that in developing countries, such as Brazil, Internet penetration still has a long way to go (Malekian, Omar and Abdullah, 2011). With the optimization of the performance of the Internet in these countries, it is expected that more customers will be able to realize any type of content requirements, like video conferencing and online banking (Malekian, Omar and Abdullah, 2011).

### **Technology Acceptance:**

Based on the studies developed by Ajzen and Fishbein (1980) that ended up culminating in the development of the Theory of Reasoned Action (TRA), Davis (1989) proposed the TAM Model, also known as Technology Acceptance Model. The Theory of Reasoned Action is a model for the prediction of behavioral intention – it suggests that a person behavioral intention depends on the persons attitude about the behavior and subjective norms (Madden, Ellen and Ajzen, 1992). According to Chuttur (2009), the TAM scale is based on the idea that the utility of a system is a response that can be explained or predicted by the user's motivation, which, in turn, is directly influenced by external stimuli consisting in the characteristics and capabilities of the present system. One of the key objectives of the scale was to provide a theoretical basis for a methodology practice of a users' acceptance test, which allows the system designers a preview evaluation of proposed systems prior to their implementation.

To achieve these objectives, the TAM scale focused initially on a model based on two fundamental constructs - perceived usefulness and ease of use - to understand the motivation of users in adopting certain technologies. According to Davis (1989), utility perception is the degree to which an individual believes that using a particular system would create the best professional performance. In the other hand, ease of use can be explained as the degree of physical and mental effort that an user believes that using a particular system will demand. Also according to Davis (1989), people tend to use or not to use certain technologies in order to improve their performance (perceived usefulness); however, this same operation could be compromised if the user finds it difficult to use such technology (ease use). According to the author's own definitions, the construct on the ease of use, has a direct influence on the construct utility perception, and these two constructs, in turn, directly influence the attitude of consumer use in adopting a certain technology.

Developed by Parasuraman (2000) with a similar objective, the Technology Readiness Index (TRI) is based on the concept of aptitude for technology and influenced the Technology Adoption Propensity (TAP) developed by Ratchford and Barnhart (2012). The authors used a variety of definitions of technology, using two questions originated from the concepts that guided the two main constructs used in TAM scale: (1) How beneficial will this new technology be once I start using it? and (2) How difficult will it be for me to learn to use it properly?

With respect to the first question, consumers can recognize that the use of technology can bring results both positive and negative. Regarding expectations and positive results, factors such as increased control, freedom, efficiency and flexibility can be highlighted (Lee *et al.*, 2003); for negative results, factors such as dependence, insecurity, social isolation, fear of having information stolen or improperly accessed (Lam *et al.*, 2008; Boyles, Smith, and Madden, 2012; Soong, 2013). In relation to the second question, it is necessary to understand the consumers' expectations of the consumers. According to Wood and Moreau (2006) when it comes to technology, consumers have complex expectations. Such complexity can grow even more, as the number of technological configurations also increase, causing sensations such as fatigue and confusion (Thompson *et al.*, 2005).

As the scale developed by Parasuraman (2000), the Technology Adoption Propensity includes two contributing factors (optimism and proficiency) and two factors that inhibit (dependence and vulnerability) the adoption of technologies. Ratchford and Barnhart (2012) define such factors as follows:

- **Optimism:** Optimism is the belief that the technology provides greater control and flexibility in life. This factor incorporates aspects of the perceived usefulness of the technology to make life easier and

allow people to do the things they want to do at convenient times. In addition, optimism items refer to how technology improves the life of the user himself and not as how it improves the lives of others, across the board.

- **Proficiency:** Proficiency refers to confidence in the ability to use new technologies in a quick and easy way to learn, as well as the feeling of being technologically competent. Given the ubiquity of technology in contemporary society, it is logical that consumer confidence in their ability to learn and effectively use new technologies has become more critical.

- **Dependency:** It is a feeling of being overly dependent on, of being enslaved by technology. A sense of dependence on technology by contemporary consumers can be seen as a response to the increased penetration of technology in the last decade.

- **Vulnerability:** It refers to the belief that technology increases the chances of being misled or exploited by criminals and/or companies. Thus, vulnerability measures the degree to which respondents believe that their chances of being victimized increase as the use of new technologies facilitate exploitative practices.

## MATERIALS AND METHODS

As stated by Yin (2007), defining the research's question is probably the most important step to be considered in the development of a study. Therefore, the main objective of the current study is to understand the relationship between the new-age elderly people and technology. According to Yin (2011), the qualitative research has five different features: studying the meaning of people's lives, representing the views and perspectives of people, covering the contextual conditions within which people live, contributing to insights into existing or emerging concepts and striving to use multiple sources of evidence rather than on relying on a single source alone.

Taking that in to consideration, the authors chosen for a qualitative research developed through the conduction of video-recorded in-depth interviews with people within the age group of sixty to seventy years old. In-depth interviewing is a technique that requires conducting intensive individual interviews with a minor number of respondents to explore their perspectives on a particular subject (Boyce and Neale, 2006). This particular technique was chosen because, according to Boyce and Neale (2006), in-depth interviews are very useful to explore detailed information about a person's beliefs' and behaviors.

In total, thirteen people were contacted, but only seven accepted to participate. The seven participants were female, ranging from ages sixty to seventy years old and all of them were residents of the same Brazilian city: Porto Alegre. Six of them were retired and only one was currently active. It was the option

of the authors to contact two acquaintances as starting points, initially used convenience sampling. After the first two interviews, snowball sampling was used to select the new participants. Respecting the principle defended by Yin (2011) that snowball sampling should only be adopted when the researcher identifies a purposive reason to interview the appointed person, the other five participants were selected due to the fact that they fit the profile and could bring additional information to complement and improve the study.

All interviews were previously scheduled by phone between the months of September and December of 2014, and were conducted individually with each participant in their houses, with duration length ranging from 20 to 40 minutes long. All the interviews were recorded for the later development of a videography.

According to Belk and Kozinets (2005), video-recorded interviews offer a strong advantage compared to more conventional audio-recordings or field-noted interviews. For example, body language, often considered to be at least as important at communicating as oral language is captured in video, but not in audio. Besides that, a good use of video media can produce a more experiential and emotional experience for the viewer rather than a written work (Belk and Kozinets, 2005).

In order to conduct the interviews, a semi-structured script was developed based on the aforementioned references. Items from TAM (Davis et al., 1989), TRI (Parasuraman, 2000) and TAP (Ratchford & Barnhart, 2011) scales were also used as references for the development of questions regarding technology dependency, proficiency, adoption propensity, among others. The questions developed created an instrument that was divided in five different sections: what is technology, use of technology, first contact with technology, positive/negative aspects of technology and general opinion about technology.

After the interviews were conducted and recorded, the authors watched the videos and transcribed the interviews. To analyze the interviewee answers, their coded content was divided in items, according to the data analysis recommended by Bardin (2004) and taking into consideration the methodological precepts delineated by Miles and Huberman (1994). Each segment of the videos was categorized within one of the five sections previously presented. Next, the authors analyzed the material of each section to identify similar opinions and perspectives that could lead into insights. The main objective of this was to identify concurrence within the responses of the interviewees, creating a consistency that could form a better understanding of the relationship between elderly people and technology. The main discoveries originated from the study are presented in the following section.

## RESULTS AND DISCUSSION

In order to set the tone for each interview and to understand the level of acquaintance each participant had with technology, the first question asked was "What is technology to you?". In general, tangible goods came to mind, such as computers, tablets, cell phones and ATM machines, as well as applications and software such as WhatsApp, Facebook and CorelDraw. However, many intangible attributes were also mentioned, such as *advance, readiness, speed, evolution, ease to perform activities, and knowledge*. This can be well observed in a quote from Ariete, a 70 year's old retired attorney:

*Technology is everything that can make my life easier. The same way I use my household appliances as technology, to me technology is also communication; it is how I use it more often. Like the computer. I have a computer, a laptop and I have an iPad, so I just got back from a trip and even though I was away I was in touch with everyone the whole time.*

In addition, technology is seen as a source of information and entertainment for most participants, a way to be up to date with the news, no matter if they are global, local or just about their friends. It is also thought of an easy and fast way to address daily needs, as mentioned by Regina, a 69 years old retired pharmacist:

*Nowadays, technology works as entertainment and as a source of research. I no longer need to have a dictionary or an encyclopedia because Google attends to most of my needs.*

Nevertheless, most interviewees shared that they feel that they are always a step or two behind technology and cannot keep up to date with changes. They perceive that these changes happen too fast for them to keep up with them. An important discovery originated from this point: new-age elderly women are hardly affected by incremental modifications in a certain device or application, but they value changes that provide significant improvements towards making usability easier, which is coherent with the studies of Schiffman and Sherman (1991). In addition, they appreciate applications that improve certain aspects of their lives, such as online cab services.

Asked about how they first got involved with technology, most participants claimed that it was out of curiosity; however, it was clear in their speeches that technology was introduced to their daily life out of a perceived need. Whether was because their job required them to deal with computers or due to the fact that they felt alone or left behind for not keeping up with friends and family in the digital world, technology was something they had to get used to. Ana Beatriz, a 69 years old retired school teacher, brought up a good example:

*To me, technology is something that happened all of sudden. It presented itself to us all at once, and*

*is something very positive, especially for people in my age, since we spent our whole lives working, running around with children and suddenly they create their own path, we retire, and now what? What should we do? So, of course, life goes on, friendships are maintained, but we spend a lot of time at home too and we start to feel a little bit lonely.*

Additionally, one of the interviewees, Cristina, a 63 years old housewife, was technology adverse until a decade ago because her husband is an IT professional and she felt that technology drove him away from her and their children. However, when her family moved to Portugal, she felt the need to learn how to use the Internet because she felt isolated from the world living in a foreign country. For Vanda, a 65 years old industrial designer, the need came when she began studying Industrial Design in her forties; and for Ana Beatriz, when her daughter went to live in the United States for six months and the cheapest way to keep in touch was by Skype.

However, learning how to bring technology resources to their lives was not an easy task to most of the participants. Although they had a few laughs while telling their experiences, *fear* was a very frequent word in their speeches: fear of sharing information, fear of exploring, fear of making mistakes, but especially, fear of damaging a device. The following quote by Cristina sums that idea up:

*(When) I started learning how to use the "famous" computer, I was in oblivion, I was afraid. (...) I would put my hand over the mouse and I was afraid that if I touched it, the screen would explode! I have no idea of what I had in mind. It was something very crazy.*

Dalva, a 65 year old housewife, mentioned that she only felt safe to explore a computer when her husband gave her a computer: that was when she felt free to learn, make mistakes and discover new possibilities, all because the laptop was hers and she would not damage other people's things. *Courage* was another word that was frequently mentioned during the interviews; after overcoming their fear, the interviewees felt courageous and up to the challenges presented by technology. Family, especially children, was pointed as a big influencer towards conquering the digital world, as can be seen in the following quote by Ana Beatriz:

*When computers first appeared, they were scary! (...) So I was fearful of using a computer. (...) But one of my daughters stimulated me a lot, so she created an e-mail account for me, so I began sending e-mails. Then she created a Facebook account (...), thought me how to use a cab app (...), WhatsApp (...).*

It is quite interesting to analyze the process of learning a new technology. Some participants reported that, in order to learn how to perform a new task, they not only need to be taught by someone, but

also must write down the step-by-step procedure to later recall how to repeat the task. Also, even though past researches have demonstrated that computer performance is not necessarily related to age-related attitudes (Oppenauer, 2009), most participant mentioned that the main barriers for them to learn something new is their own resistance and lack of interest, as can be attested by Ana Beatriz:

*I have a certain difficulty, nowadays (...), to concentrate. It is difficult for me, so I believe I do not pay much attention when someone is teaching me (something). So, when I'm going to repeat it by myself, I have already forgotten (how to do it). But I do not give up easily, I repeat it until I can do it.*

In fact, Oppenauer (2009) shows that older people can deal with new technologies as well as younger people if they receive proper training. Interestingly, six of the seven interviewees reported having hired professional help when they were learning how to use a computer. That is, they paid to learn how to access the Internet, how to write and send e-mails, etc. Those are tasks that could have been easily be taught by members of their families, however, they chose to have a professional teaching them. That can be explained by three main reasons. First, it became clear in some interviews that they felt their families were not very patient and that they did not want to feel as if they were burdens. Second, learning how to be part of the digital world was a big achievement to them, an achievement they wanted to reach through their own effort. Third, according to Yoon (1997), new-age elderly are more interested in seeking new experiences and creating new personal challenges instead of consuming tangible products; therefore, taking computer classes can be seen as the consumption of an experience.

Another point that needs to be made regarding new-age elderly consumption is the fact that due to their advanced age, they tend to see time as more limited and their time horizon perspective is shorter, which leads to a present-oriented conduct (Cartensen, 1992). This orientation is typically associated with finding satisfaction in the present moment and devoting more attention to social interaction. That might explain why the interviewees search for experiences and social connection within the world of technology.

Communication is believed to be one of the main advantages provided by technology. All participants reported the importance that computers, tablets and cell phones have in their lives; in the words of Ariete, technology is something good because "I am at home, but I am not alone". In addition, all interviewees are on Facebook and use it as a way to keep in touch with friends, as well as to reconnect with people from the past; others use WhatsApp and Skype to stay connected with children and grandchildren living far away. Some even go as far as joining niche communities, such as Dalva, who is an amateur artist and is part of a community called

Doodley, which allow users to share drawings they design and connect with other art enthusiasts:

*There is a website, I think, Doodley (...), a website only for people who draw, people from all over the world. You draw and post it there. You have followers, so you post a drawing there and people comment on it. I think it is great! I have more than three hundred followers. That is all they do: they draw.*

Even though they recognize that technology allows them to reconnect and stay in touch with people, all participants, in some way or another, shared the belief that the excessive use of technology can be harmful, especially regarding social interaction. The majority commented on how younger people are disconnected from each other even when they are in the same room; everyone concentrates on their tech gadget and ignore the real people standing next to them in the physical world. It was interesting to notice that all women who made observations on the matter used the same physical movements to exemplify the situation: swiping their finger and staring at an imaginary screen in their other hand. They also believe that this is something that is already spreading to older people and they feel uncomfortable when they are with friends and something similar happens. Coherently with the studies of William & Drolet (2005), they feel technology can drive people away from physical contact.

Besides communication, another form of entertainment found by the participants is digital gaming. While some are restricted to the basic Solitaire and Spider games available in their computers, others go one step further and play individual online games such as puzzles available on Facebook. Cristina, however, takes a big leap forward and plays social online games, which gives her the opportunity to make new friends:

*(...) I started playing "truco" (card game) online, my son taught me how to play it (...) and that was my first online game. And I was born a very good player, I was born to gamble; I wasn't born for anything else in life, I like to play. If you leave me locked in a room playing, I will play all night long.*

Helena was, actually, the only participant to admit that she is overly dependent on technology, mentioning that she turns on the computer early in the morning and keeps it on throughout the whole day until it is time to go to bed. When questioned on whether they feel excessively dependent of tech resources, the other six women claimed that technology is an important part of their lives, but not essential. Nevertheless, when asked about what they do when the Internet is down, all of them said that they immediately call their Internet provider and stay up to two hours connected until the problem is fixed. Interestingly, after answering that question, the interviewees apparently realized that they were already somehow dependent of technology. The

following quote by Ana Cristina, a 69 years old retired historian, provides an illustration of that:

*This morning something typical happened. Since last night I had no Internet signal, so I started to get (anxious). (...) This morning I called the provider (...) and they said the problem was in my computer. I called the computer guy, but couldn't reach him, so I called my nephew, who works with computers (...), and he told me to turn everything off. (...) Everything started working right away. (...) I was scared already, I was (thinking): "I'll call the (computer) guy, I'll pay him to fix it".*

Still regarding dependency, another interesting topic was that most participants believe that if, hypothetically, technology resources ceased to exist, younger people would not know how to perform several tasks. However, to older people it would come naturally since they already lived in a world in which technology was not predominant, as was brought by Vanda:

*People would not know how to do things. They would have to learn everything from scratch, but older people would know how to do things, because they spent their whole lives writing by hand (...), doing math without a calculator (...).*

When it comes to purchasing technological goods (hardware or software), new-age elderly women tend to rely on opinions and advices from close friends and family. According to Schiffman & Sherman (1991), older consumers tend to rely more on their prior experience to evaluate products and services than on external sources (ads, WOM, etc). Since most participants have little experience with tech products, they search for the closest form of internal resources: children, husbands and close friends. Those resources tend to have more knowledge and know-how on technology matters, and their help makes them feel safer about the products and services they consume than they would have been if they had to make that decision by themselves. A very good example of that is in the quote by Dalva:

*My husband always accompanies me when I am going to purchase something. He tells me which is better for me, like "this camcorder is good for you"; it has this and that. And so they (husband and children) teach me and I start using. But I don't go as far as looking up new things, (my husband) always accompanies me and makes the purchase.*

One interesting observation was that three respondents mentioned that, when making a purchase, they worry about the weight of the device, since lighter tablets or laptops are easier to carry, especially for older individuals, who naturally have more physical limitations. This may sound as a minor detail, but this information can be useful to marketers when advertising tech devices to this specific segment. In addition, the high prices charged for technology are seen as a restraint, but not as an impediment for purchase. According to Ariete:

*(Price of technologies) is a restraint. But (...) sometimes I think that now that I am retired, I no longer spend US\$ 2000 in a pair of shoes and a handbag. So now you can buy an iPad and divide (the price) in ten payments (...). It really is (expensive), but you have to pay the price, I have no doubt about it.*

Still regarding purchases, the participants were questioned on whether online shopping was part of their life. This was one of the few cases in which answers varied. Some demonstrated to be confident about the practice and have already adopted it in their daily lives. Others are still skeptical because they have had past experiences with credit card cloning and, therefore, are worried about security issues. And some others have yet to try online shopping, but see it as a new challenge in the horizon, the next step towards conquering technology, and are eager to try it, even though that means having to learn about Internet security before they take that step.

In the end of each interview, the participant was asked to send a message to other people in their age range that are not acquainted with technology. It is noteworthy that, in essence, the message was always the same, encouraging them to learn how to use technology devices; otherwise, they will be left behind, stuck in the past. The interviewees also mentioned that the positive things technology adoption outbalance the negative ones.

### **Conclusion:**

This study was successful in achieving its main purpose: understanding, through an exploratory study, the relationship between new-age elderly women and technology. As expected, the women interviewed were all very talkative, active and busy in their day to day lives, which supports the literature that says that age is more a state of mind than anything else.

Even though they reported that they were first afraid of technology, they managed to confront this fear and now they seem to be having fun about how scared they were. They were proud of being courageous enough to overcome the difficulties and do not show any signs of regret about entering in the technology world. It is important to note that professional help seems to be the number one "go-to" when they needed support to overcome the first technology barriers, after that, the cooperation of family is important for them to keep learning and getting in touch with new types of technologies. Family and close friends are the people that elderly women go to if they need assistance with technology or if they need to buy a new technology appliance.

Some of the interviewees mentioned that the design of some new technology appliances were very appealing and the weight of the appliance was important, but rather than that, aspects related to brand and technical capacities, like memory and speed, characteristics that would probably be

considered by younger people, were not mentioned. It seems that for them the most important aspect of technology is the capability to works in an accessible/portable way. Their relationship with technology is very emotional rather than cognitive and they do not seem to care much about all features made available by technological devices – most importantly, they want to communicate with friends and family in an easy way. All interviewees mentioned that through e-mail and social network they were able to reconnect with people from their past that they could not get in touch before, and that helped them overcome the loneliness that they felt from time to time.

In general, they could recall more positive aspects about technology than negative ones; the most cited positive aspects were related to communicating with friends and family, distracting from loneliness, playing and fun. On the other hand, they all agreed that technology also had the potential to drive people away, commented that when they were accompanied by other people, they did not feel the desire to have any technological device with them. Even though only one participant revealed that she was dependent on technology, all interviewees were surprised when they were asked them whether they considered themselves dependent on technology; it came across very clearly that they have not spent much time thinking about the topic, and were surprised about how they felt. In fact, after denying it, a few moments later all women said that they were somehow dependent on technology.

Even though it originates rich insights regarding phenomenon, the current study presents a few limitations, which will now be presented along with future researches suggestions. First, the participants were all women between sixty and seventy years old, therefore, exploratory insights can only be used for people of that gender and age range. For future studies, interviewing male participants, as well as people from ages above seventy years old, can provide broader knowledge about the subject.

Second, all participants were technology adherent, with positive perception of tech resources, in a way that the tech adverse point of view could not be explored. Reaching tech adverse elderly is proposed for future researches in order to understand reasons why those individuals do not have, avoid or have a negative relationship with technology and to discover barriers preventing them from creating that relationship.

Third, the results pertain to new-age elderly women from Porto Alegre exclusively. In addition, because of its qualitative and exploratory nature, the current study cannot be widely generalized. However, the discoveries originated from the research, along with data from background theory, can be used to develop future quantitative studies with larger samples, as well as beacon studies with



older age groups, men and individuals from other countries.

Lastly, the study could have been improved by including more diverse points of view instead of focusing on interviews with the subject group only. That is, the opinion of third parties, such as specialists in gerontology and IT teachers focused in elderly students, could have been taken into consideration through the conduction of in-depth interviews with professionals from those areas. Nevertheless, although the authors reached contacts in both areas, no interview could be scheduled due to their unavailability. A follow-up assessment with those professionals is recommended for future researches since it can provide insights that wouldn't be provided by the technology user directly.

The authors believe the current study is a good starting point to the development of deeper and richer studies regarding the relationship between the elderly and technology and hope it has created good insights in addition to inspiration for future studies on the matter.

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