Risk and Benefit Perceptions: Resistance, Adoption and Uses of ICT Among the Italian Elderly

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Abstract. This paper presents the main results of a national survey on active aging, with a sample of 900 Italians between 65 and 74 years of age. The research attempted to understand the role of ICT in the daily life of the elderly, in the attempt to answer the following questions: (1) What are the differences between the connected and not connected elderly? (2) What are the perceived risks and opportunities identified by older ICT users? This paper investigates the complex relationship between the elderly and technology, going beyond both deterministic approaches and optimistic analyses of the use (and non-use) of the Internet among elderly Italians.

Keywords: Elderly · ICT · Active ageing · Risks

1 Introduction

Despite a growing academic debate on the relationship between young people and risks (and opportunities) of the Internet [1], the issue of the risks of the Internet for adults seem to have much less resonance echo in scientific debate and public opinion. If the adoption of information and communications technology (ICT) by the elderly is a well-established field of study [2, 3], the literature has mostly focused on the role of digital technology in providing social and cultural resources for active aging and in improving older people's quality of life [4]. It is however crucial to highlight the need, especially when discussing policies aimed to promote active aging, to carefully consider the complex nature of media and ICT, both in terms of opportunities and in potentially perceived risks for the elderly.

The research aimed to understand the role of ICT in the daily life of the elderly, in the attempt to answer the following questions:

(1) What are the differences between the connected and not connected elderly?
(2) What are the perceived risks and opportunities identified by older ICT users?

This article discusses the results of a survey conducted in the fall of 2013 (as part of a larger national research project regarding active aging) that reached a sample of 900 Italians between the ages of 65 and 74 years old.

2   The Internet: Opportunities and (Perceived) Risks

2.1   The Internet: Risks and Inequalities

The debate around risks and opportunities of the Internet is as old as the Web itself and has been based on the value (or detriment) given to the role of computers and ICT in enhancing or inhibiting communication and social relationships. In particular, since the 90s, forms of mediated communication in daily life [5] have become an increasing object of study. Later on a deterministic approach (the Internet as a tool to break down barriers of space and time, or to threaten the social order) was applied at the beginning of Internet Studies, [6] Internet research has been focused not on "what" happens in the Internet, but on "how" social actors incorporate the Internet into everyday life [7]. Such research has been gradually distancing itself from more pessimistic approaches, discussing the risks that particular groups of users experience (such as children and young people [8]) but also emphasizing, on the contrary, the risks arising from non-use of ICT and the risk of isolation (social, cultural, economic) affecting people who are unable to use the computer and to connect to the Internet. From the 90s onward, several studies have investigated the effects of unequal distribution of digital devices on the population [9]. If the literature of the late 90s was strongly influenced by the idea that ICT would, by itself, be able to enhance economic and social progress, and it was therefore necessary to spread the technology [10], following research on the digital divide has strongly criticized the technological determinism of previous studies, especially the excessive emphasis given to physical access (for example the presence of connection and ICT [11]). The digital divide is not a matter of owning technological devices, but rather of skills people require using technology as a socially and culturally significant practice. The lack of access to ICT and digital skills is a likely source of personal and social inequality [12]. If inequalities of material access to technologies are going to be overcome in developed countries, the gap in terms of skills is destined to grow [12]. Both public and private bodies are involved at different levels in developing policies and interventions that promote the expansion of digital skills. They belief that educational and civic resources require owning devices and using media skills.

2.2   Internet and Risks

As aforementioned, concerns in the scientific literature related to the non-use of the Internet and ICT have in recent years exceeded the dystopic position related to the negative (social and individual) effects in the use of the web. Overcoming the critical view towards Internet access and usage is however a break in the debate related to Internet use among young people and children. Reasons for the continual increase in attention to risks related to Internet use among children are different. On the one hand there is increasing attention on the educational responsibility of adults (teachers, trainers, but also scholars, politicians, professionals) towards young people. On the other hand the debate on the role of ICT in the daily life of young people is taken into account by the media. For the media, the Internet is a place full of interesting stories but also of concerns [13]. Taking into account these issues and the role that the Internet

plays in society, in the last 20 years a wide range of research has identified the balance between risks and opportunities related to ICT use by children and young people; and ICT's role not only in their education, but also in their free time. High expectations for the role of the Internet in the lives of young people and children are accompanied by strong concerns about exposure to harmful and unsuitable content.

Livingstone et al. [1] identified the main factors affecting the, negative and positive, online browsing experience, of young people. In particular:

– The more children use the Internet, the more their digital skills and "range of opportunities" grow.
– Not all uses of the Internet have benefits: benefits depend on age, gender, socio-economic status and help from relatives.
– Use, skills and opportunities are also linked to online risks: the more opportunities and skills, the more risks: the growing use of the Internet implies increased efforts to prevent children from these risks.
– Not all risks end up hurting: the possibility that children get hurt because of their online experiences depend on their age, gender and socio-economic status, and also by their resources and resilience in dealing with the Internet.

Going beyond a broader critical analysis of the role of the Internet in today's society [14], the risks associated with the use of the Internet by adults seem to be particularly focused on two fields of analysis:

– The role of Internet users as "consumers" rather than "individuals": personal data theft, fraud, phishing, viruses, worms, spyware, and spam represent, according to public opinion, the major risks associated with the Internet.
– The psychological and psychiatric disorders associated with the use of the Internet: for adults, risks associated with the Internet mainly revolve around the understanding of those psychopathologies related to excessive Internet use. In particular, certain scholars have regarded the Internet as a major cause of increased sexual disorders [15], aggression [16], and addictions [17]. This strongly alarmist literature - with similarities to dystopian reflections on the role of the Internet in the 90s – has been represented by the media in order to reward an "eccentric" use of the Web [18]. But beyond the alarmist approach, it seems to be lacking, in both academic debate and public opinion, a broader reflection on the risks and opportunities of the Internet for adults and the elderly.

3   The Elderly, ICT, and Active Aging

As the western population continues to age, media and communication technology seem to be increasingly important for the elderly, thanks to those services and devices that would help people age actively [19]: the role media and communication technology play in improving the quality of life [20], health and health care [21] of the elderly is a key issue both politically and academically speaking. Political institutions have regarded digital technology as a way to avoid a new kind of divide among the elderly, hence promoting policies designed to build technological literacy among the elderly – and/or setting policy

plans to increase digital ICT adoption among older groups. Policy discourse has mainly focused on ICT use as a tool to assist with physical or cognitive (or relational) deficiencies of the elderly. In some cases these policies are often quite optimistic: ICT would (deterministically) compensate for physical and cognitive disability, diseases and loneliness typically related to older age [22]. Policy discourse on 'e-inclusion' and 'digital inclusion' have been characterized by a belief that today's ICT can improve the lives and life chances of disadvantaged groups [23]. Concerning policies about digital inclusion of older people, the risk is to use, in some way, rhetoric and (digital) myths which can be seen to echo the first period of policies to address or reduce or narrow the digital divide: the digital divide was simply a problem of diffusion of technologies and skills and not an element to frame in the context of social, cultural, personal inequalities [24]. Within the broader discussion about the digital divide and digital competences, after years of technological determinism, the multi-dimensional approach is now well established: it is not possible to identify a single element determining the digital divide, but rather a "constellation of differences" [24] (social, cultural, personal) influencing the use of technology. This multi-layered approach does not yet seem to be fully applied in terms of research and reflection on the relationship between ICT and the elderly: age seems to represent, for many theoretical approaches, a key element to explain the aforementioned gaps and to determine the use of ICT by the young elderly (65–74 y/o). Age is regarded as such a crucial element in making laggards of the elderly when compared to younger digital users [19]. The issue of risks is an additional element demonstrating a dangerous simplification in the academic debate about the role between ICT and the elderly. The complex relationship between ICT and risks/benefits for users appears to be marginalized in the study reflection of silver users. ICT is often meant to be used as a deterministic tool, positively impacting the lives of the elderly. There are in fact limited and outdated studies that seek to investigate the impact of ICT use on the daily lives of the elderly, assuming that the use of ICT for the elderly has positive effects in terms of well-being [22].

4   The Italian Digital Elderly

4.1   Methods

This article presents data from a survey with a sample of Italians between the ages of 65 and 74 years old representative of the Italian population. The questionnaires were collected via face-to-face domestic interviews between December 2013 and January 2014. The participants were selected according to a random, proportional and stratified division defined by region and by city size and population. 1,600 names were extracted from an electoral list of 90 municipalities, using a systematic method. There were 900 respondents. Error sample: 3 %. Confidence error: 0.05 %, 56 % response rate.

4.2   What are the Differences Between the Connected and not Connected Elderly?

Possession and use of digital media involve only part of the sample, since only 21.3 % of the participants possess or use a computer, laptop and/or desktop. This is even more

interesting when looking at age subgroups (distinguishing between participants between 65–69 and 70–74 years of age) and gender. The subgroup between 65–69 years of age has greater access to information technology (use of PC and Internet access) than the subgroup between the ages of 70 and 74. Additionally, men of both age groups use PCs and go online more than women.

Another interesting result is that 45 % of the elderly who today use a computer started using it before turning 50, 28.2 % between 50 and 59, 19.1 % between 60 and 64 years old. Only 9.1 % of users are "late" ICT users (who started using the computer after 64 y/o, in their senior years and during retirement), with a difference between males and females: new users are mostly elderly women, with 12.8 % of females, as opposed to 6.8 % of males that started to use the computer after 2005.

These data show that elderly digital users already have a history of Internet use: they are not "natives" to the digital world, but rather long-time immigrants, who are nearing the evolution of ICT with their own skills, approaches, and resistance, which are influenced by their history as digital users. Conversely, in our sample, new elderly users are rare, with an interesting proportion of women who are only beginning to approach ICT in recent years, if not months. There is also an interesting significant inverse correlation between first use of personal computers and different income levels ($r = -.31$, $p < .01$). People who have recently started using ICT might have a lower income than users who have used the Internet for several years: this is a possible signal, in our perspective, of a progressive diffusion of ICT among the elderly with lower incomes. As for the frequency of use, 71 % of the elderly who access the Internet do so almost every day. In other words, the majority of elderly people who have access to the Internet are heavy users. Participants with lower income, (*Chi-square* = 156.87, $p < .01$), lower education (*Chi-square* = 268.01, $p < .01$), and not working (*Chi-square* = 28.88, $p = <.01$) reported lower (or no) use of the PC and the Internet (see Table 1).

Table 1. PC and Internet use by age and gender

	65–69 y/o	70–74 y/o	Male	Female	Total
Laptop user	114	43	94	64	158
	24 %	10,2 %	22,6 %	13,3 %	17,6 %
Laptop not users	361	379	322	417	739
	76 %	89,8 %	77,4 %	86,7 %	82,4 %
Desktop user	96	54	96	54	150
	20,3 %	12,8 %	23,1 %	11,3 %	16,7 %
Desktop not users	337	369	320	426	746
	79,7 %	87,2 %	76,9 %	88,8 %	83,3 %
Internet use	113	48	101	61	162
	23,9 %	11.4 %	24,3 %	12,7 %	18 %
Internet not users	359	374	314	419	733
	76,1 %	88,2 %	75,7 %	87,3 %	81,9 %

BASE: Elderly Italians aged between 65 and 74 years of age.

Table 2. PC and Internet use related to employment status, degree and income.

Use	Employment status		Education			Income			
	No Job	Working	Primary	Secondary	Tertiary	Low	Lowermid	Lowerhigh	High
None	487	52	392	245	18	118	361	87	22
	72.9 %	48.1 %	93.1 %	63.6 %	19.8 %	93.7 %	81.7 %	53.7 %	34.4 %
Limited	53	16	11	50	9	2	36	9	6
	7.9 %	14.8 %	2.6 %	13 %	9.9 %	1.6 %	8.1 %	5.6 %	9.4 %
High	128	40	18	90	64	6	45	66	36
	19.2 %	37 %	4.3 %	23.4 %	70.3 %	4.8 %	10.2 %	40.7 %	56.3 %
Total	668	108	421	385	91	126	442	162	64
	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %

The data show that the Internet appears to be linked to existing social resources. Specifically, the larger the family, the more participants use the Internet, although the difference in proportion is only marginally significant (*Chi-square* = 7.79, p = .10). It follows that the elderly who live by themselves are less connected to the Internet (Table 2).

Moreover, the digitized elderly, as compared to the not digitized elderly, are generally characterized by a greater curiosity, higher interest and significant investment in family and social relations. The elderly who attend at least one association have a higher use of the Internet (31.7 %) compared to those not attending any association (12.2 %). In addition, older digitized people generally attribute more importance to "values" (apart from "Religion", to which the participants who are not connected to the Internet show more attachment), in all aspects of private and social life (Tables 3 and 4).

Table 3. PC and Internet use related to family members

PC and Internet use	Alone	2 members	3 or more members	Total
None	128	332	198	658
	81.5 %	72.5 %	69.7 %	73.2 %
Limited	9	38	23	70
	5.7 %	8.3 %	8.1 %	7.8 %
High	20	88	63	171
	12.7 %	19.2 %	22.2 %	19 %
Total	157	458	284	899
	100 %	100 %	100 %	100 %

Focusing more on physical, mental, and social well-being of the digital elderly, the following table (Table 5) shows the differences in distribution measuring quality of life (i.e. physical activity, friendship networks, perceived age, index of personal

Table 4. Importance given to values[a] among PC users and non-users (Descriptive statistics and ANOVA)

Value	PC use	N	Mean	SD	SE	F	p-value
Work	None	653	3.54	.74	.03	8.31	.06
	High	172	3.66	.64	.05		
Family	None	657	3.92	.30	.01	8.88	.15
	High	172	3.95	.21	.02		
Friendship	None	657	3.08	.69	.03	2.72	<.01
	High	172	3.26	.66	.05		
Free time	None	654	2.86	.73	.03	6.19	.01
	High	170	3.02	.67	.05		
Politics	None	654	1.96	.90	.04	3.48	<.01
	High	170	2.50	.92	.07		
Religion	None	657	3.10	.89	.04	9.97	<.01
	High	169	2.89	1.01	.08		

[a]The perceived importance given to values was measured with a Likert scale where 4 was "very important" and 1 "not important at all".

Table 5. Chi-square coefficients and p-values measuring quality of life and use of ICT-

	Technological equipment[a]	PC and Internet Use	Use of SNS
Physical activity	93.35 (p < .01)	102.72 (p < .01)	56.98 (p < .01)
Friendship network	52.37 (p < .01)	51.72 (p < .01)	23.77 (p < .01)
Perceived age	18.9 (p < .01)	20.1 (p < .01)	13.02 (p < .05)
Personal satisfaction	21.82 (p < .01)	17.9 (p = .05)	3.70 (p = .16)

[a]The index is composed of the processing answers regarding personal possession and use of ICTs (Laptop or Netbook, Desktop computer, tablet, eBook reader, Video Games, Smartphone, WiFi, MP3 player).

satisfaction) and the use of ICT[1]. Chi-square tests show that participants who use new technologies and the Internet the most are also the ones who show higher indicators of well-being.

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[1] For a wider overview of these data and index see [22].

4.3   What are the Perceived Risks and Opportunities Identified by Older ICT Users?

This survey aimed at investigating opportunities and risks perceived by the digital elderly in regard to their use of ICT. A first level of analysis concerns the perception of (positive and negative) changes introduced by the Internet and the related opportunities and risks. (Table 6)

Table 6. Perception of changes introduced by Internet use (ordered by frequency)

Since I use the Internet:	% Yes
I am more informed about current issues	63,7
I can learn more about my interests and passions	60,7
I can deepen my knowledge about my health and well-being	40,3
I stay more in touch with my friends and relatives	36,3
I feel more active than my peers without the Internet	31,6
I can get updated about diseases	29,9
I watch less TV	24,8
I am afraid to make mistakes	22,0
I fear that my data might fall into the hands of the wrong people	21,8
I have new topics to chat about with my children/friends	21,0
I'm not confident of the reliability of sources on the Internet	18,7
I have new interests, thanks to the Internet	18,0
I feel less alone	13,7
I waste a lot of time on the computer	13,5
I save money buying online	13,4
I meet up with old friends online	13,4
I came across offensive and inappropriate content	12,9
I feel more active in my local community	12,5
I feel more active in my country's political process	9,4
I am more deskbound	8,5
I spend more time at home	8,0
I get in touch online with new and interesting people	5,7
I am overwhelmed by information	5,3
Through SNSs I can freely express my point of view	4,1
Through SNSs I more often express my feelings and memories	3,0
I spend less time with my loved ones	2,2
I have met someone in-person that I previously met online	1,4
I feel judged by the things that I write on SNSs	1,2

Two-thirds of elderly users in our sample felt that the Internet has caused positive changes in their knowledge (information on current topics −63.7 %, and personal interests −60.7 %), while about one-third noted positive changes in the sphere of relationships (staying in touch with friends and relatives −36.3 %) and a comparative perception about being active (feeling more active than peers without the Internet

−31.6 %). For a large number of the elderly, the Internet is a source of knowledge for their own health and well-being (40.3 %) and for the treatment of their diseases (29.9 %). There is also a perceived change in the management of time: about 25 % perceived a decrease in the time spent watching television, while 13.5 % say they spend too much time on the computer and about 8 % feel they are more deskbound and/or spend more time at home; 2.2 % of respondents declare spending less time with their loved ones. Although the use of the Internet is generally accompanied by a perception of increased activity and socialization, online and offline participation remains a decidedly minor practice (from 12.5 % of those who feel "more active in their local community" to 4.1 % of those who more freely express their views on SNSs). Among the most common fears associated with Internet use appear to be making mistakes (22 %), having their privacy violated (21, 8 %), or not knowing how to assess the reliability of online sources (18, 7 %). A secondary concerns are those most related to perceived opportunities and risks. Experience has an important role in making the elderly more or less confident Internet users: those who started to use computers later are more afraid of making mistakes. The higher the age of first-time use of a computer and the Internet, the more difficult ICT seems to be. Conversely the more experienced (those who started earlier than others), having overcome any technical concerns, are more concerned about offensive content (offensive words, images, videos). As for the concerns related to "wasted time," those who spend more time on the Internet have a higher perception of the risks involved in terms of "misspent time". The increased frequency of use increases, reflexively, the perception of excessive Internet and computer use. In general, increased Internet use involves an increasing general concern: the higher the frequency of use, the greater the perception of online risks[2] (small correlation: r = .18, p < .01). What is clear is that the frequency of use not only correlates to increased risk perception, but also greater awareness of the opportunities[3] (small to medium correlation: r = .29, p < .00) also in terms of sociability[4] (medium correlation: r = .31, p < .00). There is a stronger correlation when looking at the average of online activities: the greater number of activities carried out, the greater

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[2] The risk index is a scaled item that combines responses to the following 9 questions (1 = yes; 0 = no): "Since I have been using the Internet" I am afraid to make mistakes, I fear that my data could fall into the hands of the wrong people, I waste a lot of time on the computer, I came across offensive and inappropriate content, I am more deskbound, I spend too much time at home, I am overwhelmed by too much information, I spend less time with my loved ones, I feel judged by the things that I write on SNSs.

[3] The opportunity index is a scaled item that combines responses to the following 9 questions (1 = yes; 0 = no): "Since I have been using the Internet": I am more informed about current issues, I can learn more about my interest and passions, I feel more active, I watch less television, I have new interests thanks to the Internet, I feel less alone, I save money by buying online, I feel more active in my local community, I feel more active in my country's political process.

[4] The sociability index is a scaled item that combines responses to the following 7 questions (1 = yes; 0 = no): "Since I have been using the Internet": I stay more in touch with my friends and family, I have new topics to chat about with my children/friends, I have met someone in-person that I previously met online, I get in touch online with new and interesting people, Through SNSs I can freely express my point of view, Through SNSs I more often express my feelings and memories.

the perceived risk (medium to large correlation: r = .40, p < .00), opportunities (large correlation: r = .63, p < .00) and sociability (large correlation: r = .64, p < .00).

5   Conclusion

The analysis attempts to investigate the main features of the Italian digital elderly and their perception of the risks and opportunities related to the use of ICTs. The results of the survey allow us the opportunity to answer the following research questions:

(1) *What are the differences between the connected and not connected elderly?*

Digitized elderly people are a minority of the Italian population between the ages of 65 and 74, with good economic standing and secure employment, higher cultural sensitivity, strong family and social bonds and better physical health than non-digitized citizens. Men are more digitized than women, and the 65–69 year old sub-cohort is more connected than the 70–74 year old sub-cohort. These data confirm a "classical" dynamic of the digital divide influenced by socio-economic dimensions [24] in which economic, social and cultural capital give rise to processes of digital inclusion-exclusion. Above all, the data indicate that possession and use of ICT is accompanied by a better socio-economic condition, better physical activity, a larger network of friends, a lower perception of being old, a general personal satisfaction, as well as interests and self-confidence. The Italian digital elderly belong mainly to the wealthy minority over 65 years of age, with typical characteristic traits as innovators and early adopters [26]: high social and economical status.

(2) *Which are risks and opportunities perceived by older ICT users?*

One clearly emerging piece of data is a general perception by the elderly that ICT has primarily brought a feel of more positive than negative changes into their lives. Risk awareness is however not absent: the perception and the different nature of the risks are not divided evenly in the sample. In particular, in line with results of research on the relationship between children and ICTs [8], there is a positive correlation between the use and the perceived level of risk: the more ICT is used the more risks but also opportunities are perceived. Additionally, with more use the risk perceptions change: if "new" digital users are particularly afraid of making technical mistakes, more experienced digital users are more concerned with increasingly complex risks, such as exposure to offensive content, data theft, or wasted time on the Internet.

The results presented provide a starting point on two reflections. First of all, results show that among the elderly, the perception of risks tends to be even higher than the initial enthusiasm towards ICT and the essential role given in their daily lives. Nevertheless, the issue of risks has been widely underestimated by both academic observation and public policies, hence the need to discuss the skills needed for a proper and safe use of ICT. As more access to the Internet spreads, greater importance has to be given to the kind of skills and awareness that the elderly need to acquire in terms of taking advantage of information and participation. These skills depend on their social, economic and cultural resources. With the diffusion of ICT among the "late majority" of older Italians [26], future waves of less "exclusive" (in terms economic, cultural,

social resources) elderly users are likely to have less opportunities to take full advantage of the use of ICT. New issues will not be related to elderly peoples procurement of ICTs, but rather the actual technical skills and also critical skills in the selection of information, management of relationships and of new opportunities for active aging.

A second issue regards everyday contexts of use of the ICTs and current policy initiatives to promote active aging: studies on aging, digital inclusion, and risks require reflections that go beyond the benefits of ICT to recognize the importance of the ramifications of the technologies in adoption of contexts at the micro level and for different individuals, and groups. The processes of (digital) inclusion should aim to promote social inclusion and an individual's quality of life, not just the spread of ICT, which in some cases, may be paradoxically counterproductive. If it is true that children who have serious problems in their offline life are also likely to meet the same problems online [28], could the adoption of immersive and personal technologies increase loneliness and isolation of the elders or be an opportunity to overcome these problems? To better understand the processes of aging in the coming decades, politics and academic research are responsible for answering this question in the short term.

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