GreeSE Papers

Hellenic Observatory Discussion Papers
on Greece and Southeast Europe

Paper No. 153

Investigating the Internet in Greece: findings from the World Internet Project

Charalambos Tsekeris, Nicolas Demertzis, Apostolos Linardis, Katerina Iliou, Dimitra Kondyli, Amalia Frangiskou and Olga Papaliou

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

November 2020

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Investigating the Internet in Greece: findings from the World Internet Project

Charalambos Tsekeris[*], Nicolas Demertzis[†], Apostolos Linardis[‡], Katerina Iliou[§], Dimitra Kondyli[**], Amalia Frangiskou[††] and Olga Papaliou[‡‡]

ABSTRACT

The present study aims to offer a comprehensive presentation of the empirical results of the third wave of the World Internet Project (WIP) nation-wide survey in Greece, which was conducted from the 12th of April to the 23th of May 2019. It involves the main findings of this research wave and explores the development of internet penetration among the Greek population by providing comparative data on several aspects of the respondents' internet-related behavior between all three WIP waves (2015, 2017, 2019). These aspects pertain to digital use, access and divides, online activities and social capital, internet reliability and fake news, online victimization and privacy, political efficacy and freedom of expression. Data were collected by 1,208 interviews over the phone on a structured questionnaire (based on WIP guidelines and included some additional national questions of theoretical interest) and manually transferred to an online platform using RM+ software and then to statistical analysis software. The paper also offers descriptive presentations of the results analyses as well as charts including mostly relative frequencies and, in some cases, variable means. The relative frequencies and means are included in the charts in order to allow the reader to have a clear overview of the exact percentages. The results depict Greece as a digitally vulnerable society, with strong internal antinomies, which are in tandem with internet's radical ambivalence in general.

Keywords: World Internet Project-Greece, Internet Use, Digital Divide, Disinformation, Social Media, Social Capital

Acknowledgement: The 3rd wave of World Internet Project-Greece was funded by the ongoing project "Research, Education and Infrastructures: The triangulation of EKKE strategic axes (REDI)", which reflects EKKE's strategy for research and development (R&D) for the period 2017-2020. Many thanks are expressed to Ms. Christina Frentzou (EKKE) and the group of trained interviewers for their invaluable help. The views expressed in this paper are those of the authors and do not necessarily represent the views of the Hellenic Observatory.

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1. Introduction

Contemporary internet developments and transborder data flows are driving globalization and increasingly rendering the world around us much more complex, uncertain and unpredictable than we have allowed ourselves to see, so that many explanatory models and policy frameworks become obsolete (Weinberger, 2019). According to the OECD report *"How's Life in the Digital Age?"* (2019), internet technologies have radically and rapidly changed the way we work, consume and communicate, but this transformation calls us to address such crucial issues as digital access, literacy, inequality, inclusion and cohesion, in a responsible, smart and effective way[8].

Nevertheless, the internet, like every other human technology of communication, is an emergent by-product of a social whole, which is full of persistent imaginaries, representations, narratives, symbols and myths surrounding its origins and its historical development. These actually play a crucial role in establishing a taken-for-granted and yet powerful view of *both* our physical *and* digital worlds, which are increasingly overlapping and blending together. The latter implies that we are fast moving from the notion of being "offline versus online" towards that of being "onlife" (Floridi, 2015), that is, a groundbreaking transition that happens only once in the history of a species (Floridi, 2018). In other words, whereas early sociological analyses strictly "separated 'cyberspace' from 'real' life, it is now recognized that the ubiquity of digital technology and the growing inseparability of online and offline interactions renders this bifurcation obsolete (if ever adequate)" (Fussey & Roth, 2020: 2).

Unveiling the path dependency and the ideological dimension of contemporary technology helps us understand that there is "more than one Internet, thus there are several histories of networking which are expressions of a complex system of technical, cultural and historical trajectories, most of which are still uncharted" (Bory, 2020: 3). This demonstrates the pressing need for a systematic sociological and interdisciplinary study of the internet as the relational "fabric of our life", something rightly noted by Manuel Castells (1996: 1) in the mid-1990s, and as "a new form of space" (Smith, 2017: 8). Such a study must also be contextual and sensitive to the hidden symbolic background and identities of the internet users participating in different social networks (Zeri, Tsekeris & Tsekeris, 2019).

Online social networks are meaningful and evolving relational constructs that get negotiated and take shape over the course of symbolic communication running through diverse media technologies. This has important nonlinear consequences for social constellations and cultural formations. Such consequences often result "from dominant usage patterns, from economic constraints and opportunities, and from political regimes that monopolize or promote certain media technologies while hindering others. Media technologies foster distinct socio-cultural constellations not by themselves, but in the context of historically changing and context-dependent conditions of their production and usage" (Fuhse, 2018: 93).

[8] Organization for Economic Co-operation and Development, "Seize the opportunities of digital technology to improve well-being but also address the risks", https://www.oecd.org/newsroom/seize-the-opportunities-of-digital-technology-to-improve-well-being-but-also-addressthe-risks.htm

Moreover, the development and use of the internet, and of social media networks in particular, cannot be separated from the rapid, complex and contradictory changes that are taking place in our increasingly globalized and information-saturated world. To a large extent, the diffused and ubiquitous socio-technological processes of communication reflexively contribute to the construction, mediation, and disclosure of what these changes are (Tsekeris, 2018). Over against any kind of technological determinism, the internet technology affects the entirety of the public and private life not as an independent variable but as an inter-dependent one, along with a host of long-, mid-, and short-term historical factors and vectors. The internet thus constructs society as much as it is socially constructed. To use Niklas Luhmann's (1977) sociological terminology, society and internet technology systems are structurally coupled and interpenetrate each other reflexively in this mutual dynamical process of co-construction and co-evolution.

Another aspect of the aforementioned systematic sociological and interdisciplinary study of the internet is that current digital technologies reflect the late modern human condition characterised not by the zero-sum game logic of "either-or", but by the positive-sum game logic of "both-and" – that is, the "either-or" society has given its place to a this-as-well-as-that world[9]. Living in the age of "both-and" implies that the internet developments essentially involve simultaneity, hybridity, heterogeneity, contingency, uncertainty and, above all, ambivalence and doubt. Following this integrative conceptual logic, positive and negative aspects of the ongoing digitalisation process mutually co-exist and co-evolve in the same relational context, thus signifying an analytical transition from dualism to duality (Tsekeris & Demertzis 2018).

Many recent research results ultimately highlight the radical ambivalence and undecidability that permeates the emerging digital space (e.g. Schäfer & van Es, 2017; Pickard & Yang, 2017; Koc-Michalska & Lilleker, 2017; Milner & Phillips, 2017). For instance, we cannot easily decide between the "public sphere-like scenario", where users are exposed to diverse content, and the "echo chamber-like scenario", where established partisan positions tend to be reinforced (Colleoni, Rozza & Arvidsson, 2014). Social networking sites actually reinforce both social fragmentation, group cohesion and information diffusion. In this view, digital platforms' affordances and features constantly and nonlinearly interact with cultural patterns, perceptions and practices of users, so that any firm conclusion is inherently problematic and calls for further investigation and discussion on the matter.

Radical ambivalences also characterise the dynamics of digital economy and society within the European Union. Let us now focus on Greece, one of the allegedly weakest links of the EU Digital Single Market (DSM)[10]. In the EU Digital Economy and Society Index (DESI) for 2020, the country made the most progress compared to the previous year (especially in connectivity and human capital)[11]. But it is rather obvious that the so-called "post-crisis Greece" has a long distance to cover compared to other countries. For 2020, the country, in overall, ranks again 27th out of the 28 EU Member States and still belongs to the low-performing group of countries along with Romania,

[9] This has been originally argued by Ulrich Beck in his *Reinvention of Politics* (1997) and his *World at Risk* (2009).

[10] https://ec.europa.eu/digital-single-market/

[11] See full scoreboards here: https://ec.europa.eu/digital-single-market/en/scoreboard/greece

Bulgaria, Italy, Poland, Hungary, Cyprus, and Slovakia. So, although Greece marginally improved its performance regarding its human capital and the supply side of digital public services, it is placed for one more year under the EU average.

Nevertheless, Greeks are still considered to be active users of internet services with their number growing (OECD 2019). In addition, the progress in integrating digital technology has been slow. According to the "eGovernment Benchmark 2019"[12], Greece is at 27% regarding the penetration of e-services, while the EU average is 57%. In the field of digitisation of public services, the country stands at 51%, far below the European average (68%). Therefore, it belongs to the countries that do not fully exploit the great potentialities and opportunities offered by contemporary ICTs. Yet, it is worth noting that Greece's dismal record on digitisation has received a significant boost from an unlikely quarter, that is, the coronavirus. The COVID-19 pandemic, the world's first *digital pandemic*[13], and the ensuing lockdown acted as a catalyst. They had indeed prompted a rush to adopt massive digital solutions for everything from Cabinet meetings to prescriptions: "Documents like residence certificates, family status statements, recognition of university degrees or sample statutory declarations — a must-have for pretty much any bureaucratic process in Greece — were suddenly, and finally, available online" (Stamouli, 2020).

In 2019, the newly established Greek Ministry of Digital Governance set as its primary aim to compare with the EU average within the next 4 years. In order to achieve this, it declared a comprehensive digital strategy, with emphasis on matching the bureaucratic simplification with the digitalisation processes, which run in parallel[14], as well as on the development of the National Coalition for Digital Skills and Jobs, aiming to eliminate digital skills gap at all levels of economy and society through concrete actions and the participation of a wide range of stakeholders (private sector, NGOs, Civil Society, hubs, incubators, and so on)[15].

According to OECD indexes, 76.5% of the Greek households had internet access in 2018[16]. Also, it is recorded that Greece had 7,815,926 Internet users in December 2018, i.e. 70.3% penetration, and 5,000,000 Facebook subscribers in December 2017, i.e. 44.9% penetration rate[17]. But although Greece's gap from the European average in broadband penetration has been almost bridged, the digital transformation entails *more risks than benefits* for the country, relative to other OECD countries. For instance, the level of inequality of internet use is among the highest of OECD countries, the information industries do not add significantly to employment,

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[12] https://ec.europa.eu/digital-single-market/en/news/egovernment-benchmark-2019-trust-government-increasingly-important-people

[13] COVID-19 is a digital pandemic in terms of its origin, dynamics and effect: "Governments around the world are resorting to digital instruments to combat the virus. Artificial intelligence and big data analysis play a valuable role herein" (Okano-Heijmans, 2020).

[14] https://mindigital.gr/

[15] See https://www.nationalcoalition.gov.gr/en/. Nowadays, special attention should be placed on helping disadvantaged people who are less familiar with new technologies to learn how to exploit digital connections and online networks (Bavel et al., 2020).

[16] https://data.oecd.org/greece.htm

[17] http://www.internetworldstats.com/europa.htm#gr

and many jobs are at risk of automation relative to OECD countries, while the exposure to disinformation online is comparatively high[18].

In general, the internet -in Greece and everywhere else- enmeshes with the multiple structural transformations associated with the rise and spread of the so-called "information and communicative capitalism" (Fuchs, 2020; Dean, 2005), as well as with the experience of late-modern subjects and societies, thus posing the urgent need for a far greater conscious-raising and awareness to the situated, cultural and sociopolitical contexts of its use (Fuchs, 2015). It is in the same spirit of critical inquiry that the collective and interdisciplinary World Internet Project (WIP)[19] focuses on the specific national settings of internet use, with particular analytic attention on comparative and international perspectives. Hence, WIP examines the internet as something more than a global information machine, or a communication tool or medium, and emphasises the cultural and sociopolitical dynamics of the constituent internet technologies, as well as the vast complexity of new types and processes of meaningful action, interaction, experience, subjectivity and identity formation that stretch across the turbulent digital world, especially after the triumphal advent of Web 2.0 or Social Web (Tsekeris & Katerelos, 2014). Many scholars add up a normative dimension here. As Sir Tim Berners-Lee sharply puts it, if we give up on addressing big issues and building a better web now, "then the web will not have failed us. We will have failed the web"[20].

Furthermore, the aforementioned complexity involves real power structures (Fuchs, 2020), and both enables and restricts communication and the accessing and distributing of information. But most importantly, it pertains to an unprecedented interconnection of people and things (including technological and cyber-physical systems), as well as to the radical reorganisation of social and economic relationships in the time-space continuum, with both intended and unintended consequences for human life and work, groups, and societies, which need to be carefully studied and understood (Rifkin, 2014; Tsekeris, 2018).

In this analytic context, we move on to empirically study the Greek internet. More specifically, the World Internet Project in Greece is implemented by the National Centre for Social Research (EKKE)[21] as part of the international World Internet Project (WIP)[22]. WIP is a major survey-based research program, launched in 1999 and directed by the Annenberg School Center for the Digital Future at the University of Southern California[23], looking at the social, political and economic impact of the internet, as well as at how individuals adopt and use the internet and other new technologies, and what implications this has on their everyday lives and communities. This program becomes increasingly important because in order to get closer to the kind of internet

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[18] https://www.oecd-ilibrary.org/science-and-technology/how-s-life-in-the-digital-age/how-s-life-in-the-digital-age-in-greece_9789264311800-17-en

[19] See https://www.worldinternetproject.com/

[20] https://webfoundation.org/2019/03/web-birthday-30/

[21] https://www.ekke.gr/

[22] Currently, the World Internet Project is comprised by more than 30 international partners. See https://www.digitalcenter.org/world-internet-project-partners/

[23] Professor Jeff Cole (USC Annenberg School Center for the Digital Future) is the spiritual leader of the World Internet Project, which was firstly originated at the UCLA Center for Communication Policy and founded with the NTU School of Communication Studies in Singapore and the Osservatorio Internet Italia at Bocconi University in Milan, Italy.

we want, "we need a better understanding of the internet that we have. We have to look at the Internet, warts and all, and not be seduced by the illusions of how the internet *seems* to be, or how others would like us to see the internet for their own purposes" (Bernal, 2018: 2).

The first wave of the survey in Greece was conducted in November and December 2015, and the second between 31st January and 21st February 2017. The present study offers a comprehensive presentation of the empirical results of the third wave of the survey, which was conducted between 12th April and 23rd May 2019. It involves the main findings of this research wave and explores the development of internet penetration among the Greek population by providing comparative data on several aspects of the respondents' internet-related behavior between all three WIP nation-wide waves. These aspects pertain to digital use, access and divides, online activities and social capital, internet reliability and fake news, online victimisation and privacy, political efficacy and freedom of expression. The paper also offers descriptive presentations of the results analyses as well as charts including mostly relative frequencies and, in some cases, variable means. The relative frequencies and means are included in the charts in order to allow the reader to have a clear overview of the exact percentages.

2. Methodology

During WIP 3rd wave-survey, 1,208 interviews were conducted over the phone (CATI), with people who were able to express themselves in Greek. The research methodology was designed by the National Centre for Social Research (EKKE) and the phone calls and interviews were conducted by trained interviewers from EKKE's Web Lab. The data collection period was between 12 April – 23 May 2019 and covered households in all thirteen districts of the Hellenic Republic in the eligible sample of population. Respondents were individuals aged 15+ years old selected via a random stratified cluster sample design[24].

In the first stage, the digital phone directories of several providers were identified as the sampling frame, which included both landlines and mobile phone numbers. The sampling frame was then stratified into 74 strata by district units. Households were allocated proportionally in each stratum so as to correspond with the Greek population, according to the 2011 Population Census. Upon that, independent samples were selected by each stratum using a random calling method. In the second stage, respondents were selected in each household using age and gender quotas proportionate to the total population according to the Population Census of 2011. In each household only one interview was conducted.

The response rate was 48.96%. Data was collected over the phone on a structured questionnaire. The questionnaire was formulated based on the World Internet Project guidelines and included some additional national questions of theoretical interest. The data was manually introduced in an online platform using RM+ software and was then filtered and transferred to statistical analysis software.

[24] For the demographic composition of the sample, see Figure 1 in the Appendix.

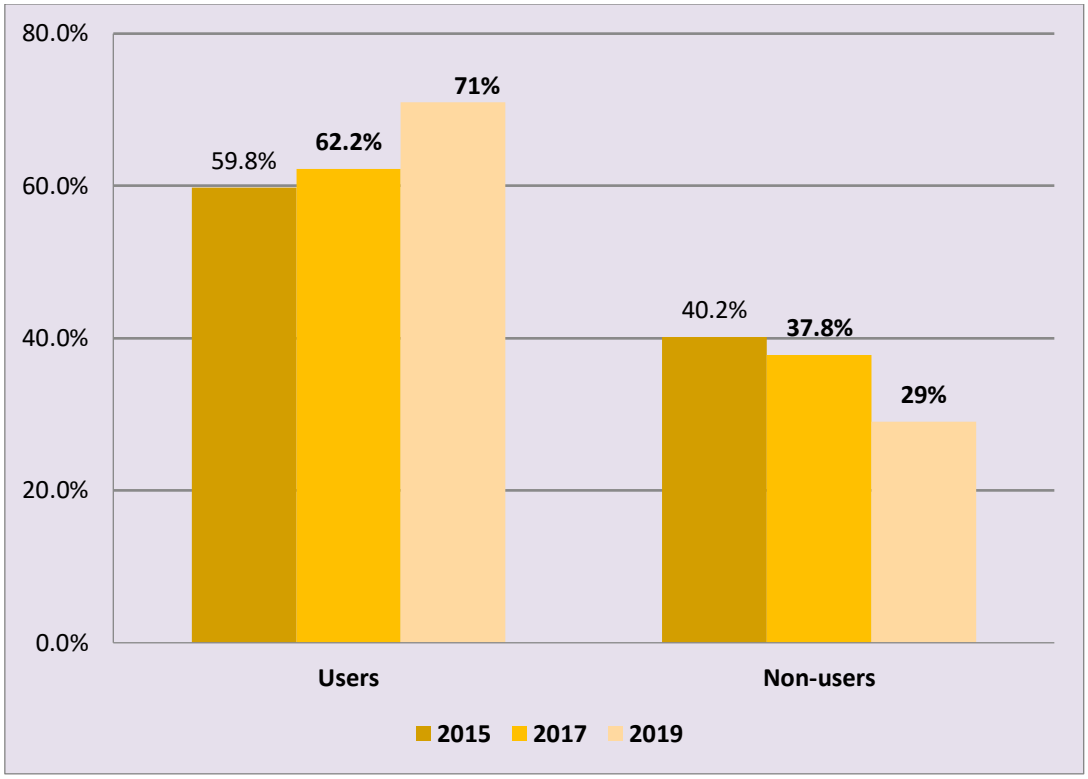
The dataset was then weighted according to the 2011 Population Census and the Labor Force Survey. Ten interviewers were employed, monitored by two supervisors that also conducted quality control checks on 35.76% of the sample.

3. General use & access

3.1 Internet use

From the latest three WIP measurements it appears that internet use in Greece is steadily increasing. As of the latest data (see Figure 1), 71% of the population sample[25] consider themselves as internet users, that is, an increase of 8.8% from 2017 (62.2%)[26].

Figure 1. Internet Use



[25] In 1,208 individuals as population sample, n users=858, n non-users=350.

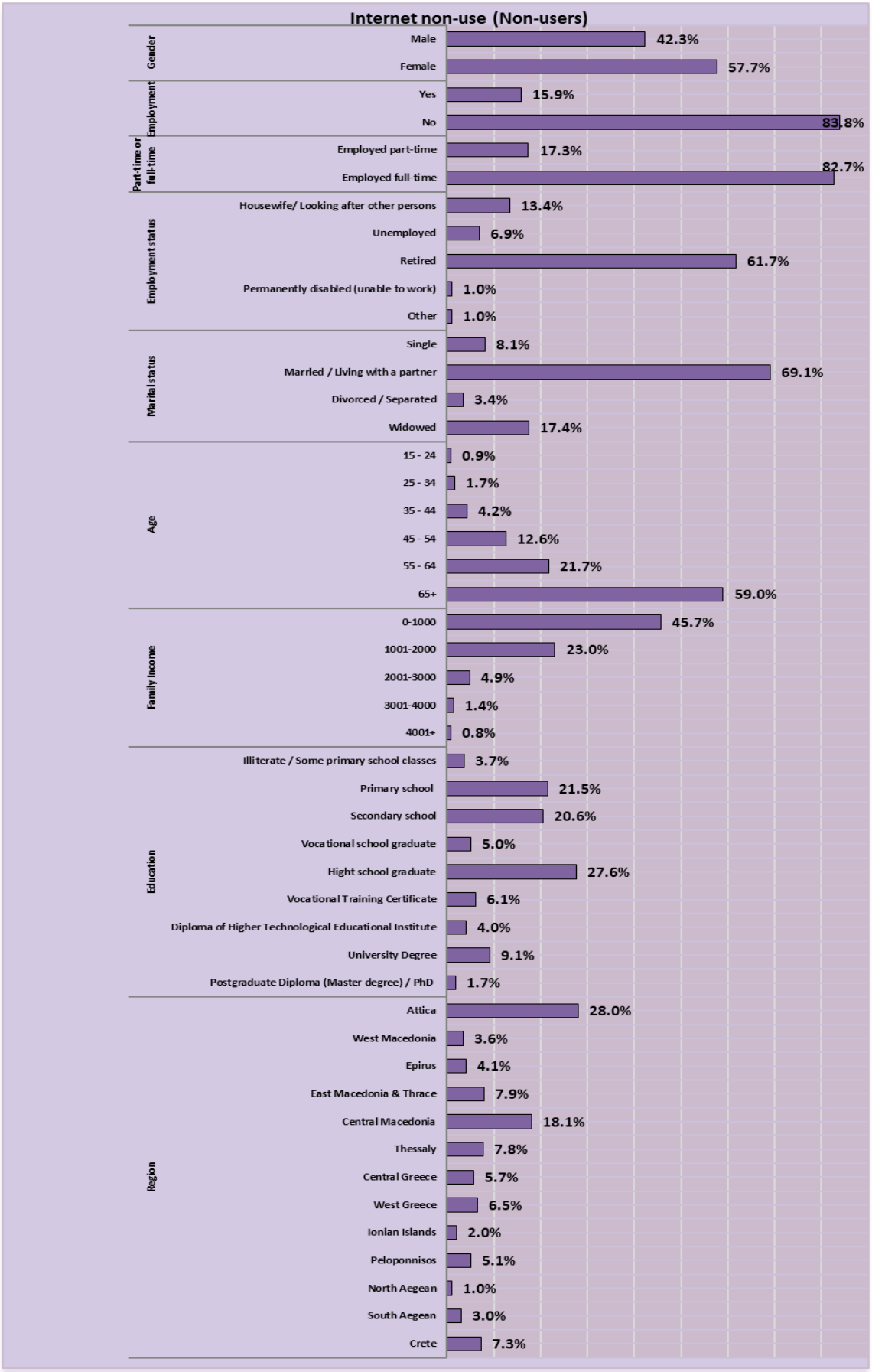
[26] According to the most recent survey on the use of information and communication technologies by households and individuals (in 2019), which was conducted by the Hellenic Statistical Authority (ELSTAT) during the period 01/01/2019 to 31/03/2019, 75.7% of the population sample (aged 16-74) made use of the internet in the first quarter of 2019. Source: Survey on the Use of Information and Communication Technologies by Households and Individuals, Year 2019, 8/11/2019 (https://www.statistics.gr/documents/20181/adbe1a27-e2d2-5529-2f50-6872239bbff7). Notably, WIP's statistical unit includes households with at least one member aged 15+ years old; Individuals aged 15+ years old. Taking into account only individuals aged 16-74, the percentage of internet use for WIP data is approximately 75.7%, which is in line with the abovementioned measurement by the Hellenic Statistical Authority (ELSTAT).

The main reasons that contribute to non-use, coming from the answers of non-users are: Lack of interest in internet usability is the number one reason (46.9%), while the second reason for not using the internet is the lack of technical skills, or fear/confusion towards technology (35.7%)[27]. The other reasons pertain to the lack of owning a device capable of accessing the web, as well as to the fact that the internet requires a certain time commitment they cannot afford (4.3%). In an even smaller percentage, there is the lack of financial means required to maintain an active internet connection (1.43%). Therefore, the relatively high percentages of digital illiteracy, as well as the numbers of the "resisters" and/or the "excluded"[28], albeit in decline, suggest that the so-called "information society" in Greece is still underway, but with an optimistic prospect.

[27] Greece belongs to a group of countries where non-users refrain from internet use mainly because they are not interested, or not convinced, about internet's usefulness; or they are afraid of (or confused by) technology; or they lack technical skills, rather than internet access per se (see The World Internet Project International Reports 2017 & 2018, 8th edition & 9th edition).

[28] Decrease in digital illiteracy rates in Greece is also confirmed by Eurostat data: internet use by individuals (in 2019) amounts to 72%. Overall, it is gradually increasing since the first year of survey (2008). However, the Greek internet use rate still falls below the EU average (85%).

Figure 2. Internet non-use (Non-users)



The identity of the internet non-users, as derived from the latest WIP measurement (2019) can be summed up as (Figure 2): The gender identity of non-users shows a margin of 15.4% (female 57.7%, male 42.3%). Regarding marital status, the highest percentage of non-users is married (69.1%), with those widowed or unmarried having less presence (17.4% and 8.1% respectively). As far as the age of non-users is concerned, the highest percentage belongs to 65+ years old. That means there is a positive correlation between non-use and age. The percentage of non-users decreases along with age, being 21.7% in the age 55-64 and 12.6% in the age 45-54, while in younger adults the percentage of non-users amounts to 0.9% in the age 15-24 years old, 1.7% and 4.2% in the ages 25-34 and 35-44 respectively.

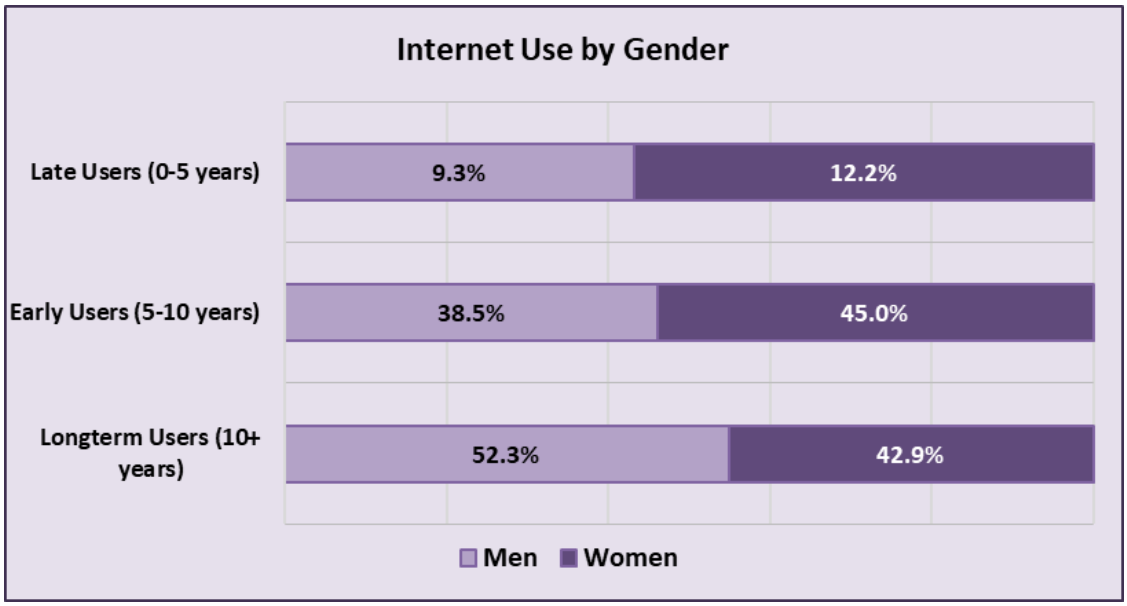
The vast majority of non-users are out of the labour market (83.8%), with 61.7% of them being retired, 13.4% of them dealing with household chores or caring for someone, and 6.9% being actually unemployed. Regarding internet non-users who are employed (15.9%), the vast majority states that they are full-time employees (82.7%). Regarding the monthly household income of non-users, almost half of them (45.7%) are in the lower tier with income up to 1,000 euros per month, 23% of non-users reports income from 1000-2000 euros per month, while much smaller percentages of non-users reports higher income that that. As for their educational level, 45.8% have completed primary school, 38.7% have a high school or technical school diploma, and 14.8% have at least a university degree. Most non-users live in Attica and Central Macedonia (28% and 18.1% respectively).

It appears that Greeks are experienced internet users, with 12.5 years of experience on average, which is more or less the same as the French (13 years), more than the Greek Cypriots (11 years) and less than the residents of the USA (15 years)[29]. The higher percentage that of new users compared to the last measurement in 2017 (10%) shows a positive trend of internet use penetration.

As Figure 3 shows, men appear to be more experienced users (52.3%) than women, but women have a higher percentage on the category of new users (12.2%).

[29] See World Internet Project International Report 2018 (9th edition), p. 23.

Figure 3. Internet Use History by Gender



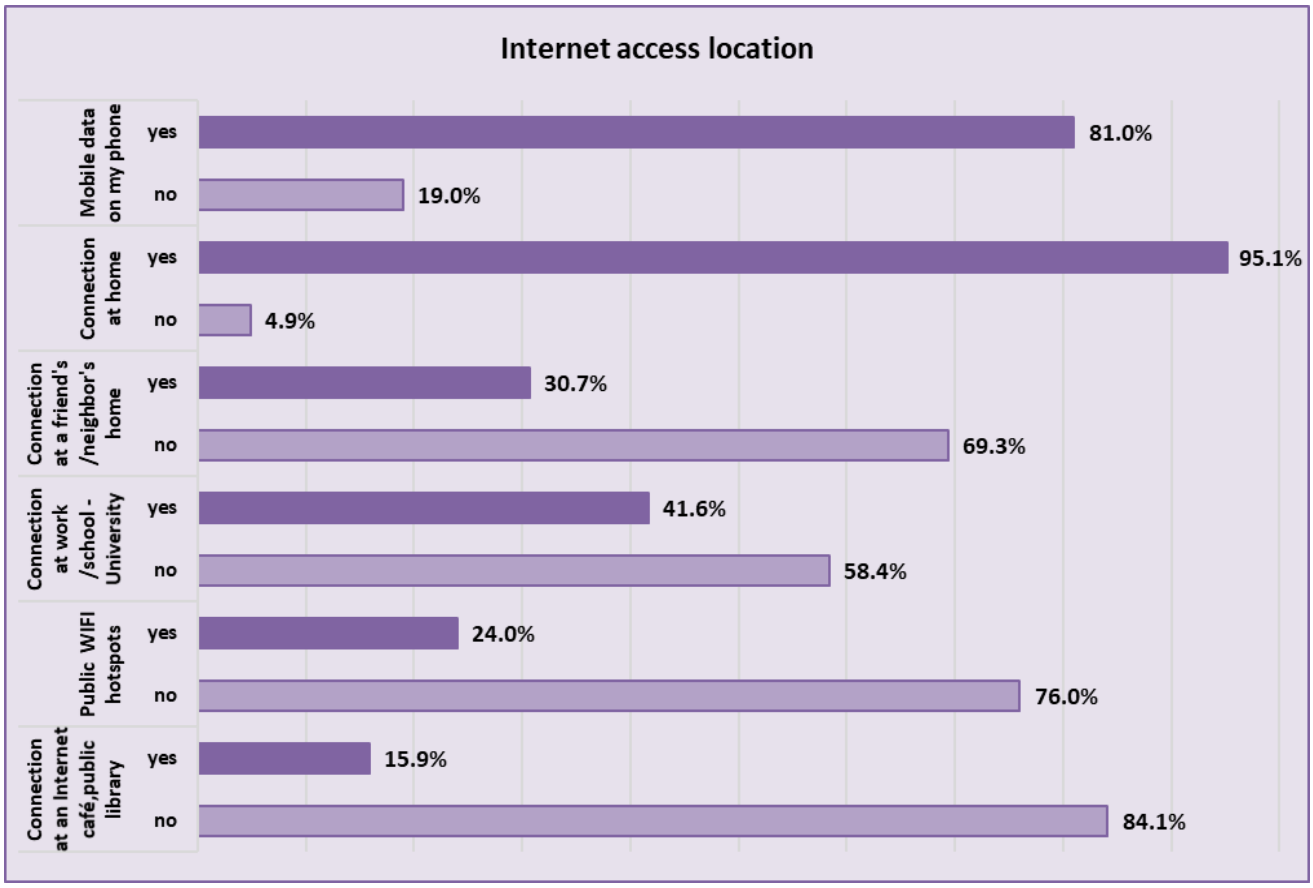
There is a positive correlation between long-term internet use and higher educational level, as well as higher monthly income, an association which is confirmed in previous WIP studies[30]. After analysing the data regarding long-term internet use and its relationship with employment type (full- or part-time), or employment status (employed or not), we can conclude a positive relationship to long-term use. Those who are full-time employed seem to be more experienced internet users than the part-time employed. Likewise, internet users who are employed have been using the internet longer that those who are unemployed (see Figures 2, 3, 4 and 5 in the Appendix).

3.2 Internet Access

The majority of the users connect to the internet through cellphones (81%), while the main location from which users go online is their residence (95.1%). If we compare the Greek research findings with those of other participating countries[31], we can observe a higher percentage of users going online from their workplace (72%) or their educational institution (71%), while the Greek database draws a different picture[32], with those who connect from their workplace or their educational institution reaching the percentage of 41.6% (see Figure 4).

[30] See World Internet Project International Reports 2017 & 2018, 8th edition & 9th edition.
[31] See WIP International Report 2017, 8th edition.
[32] This is a differentiated statistical approach. For the Greek data, percentages have been calculated on the total number of users, while the same percentages in the international comparative analysis have been calculated on specific categories of users (i.e. employed and students).

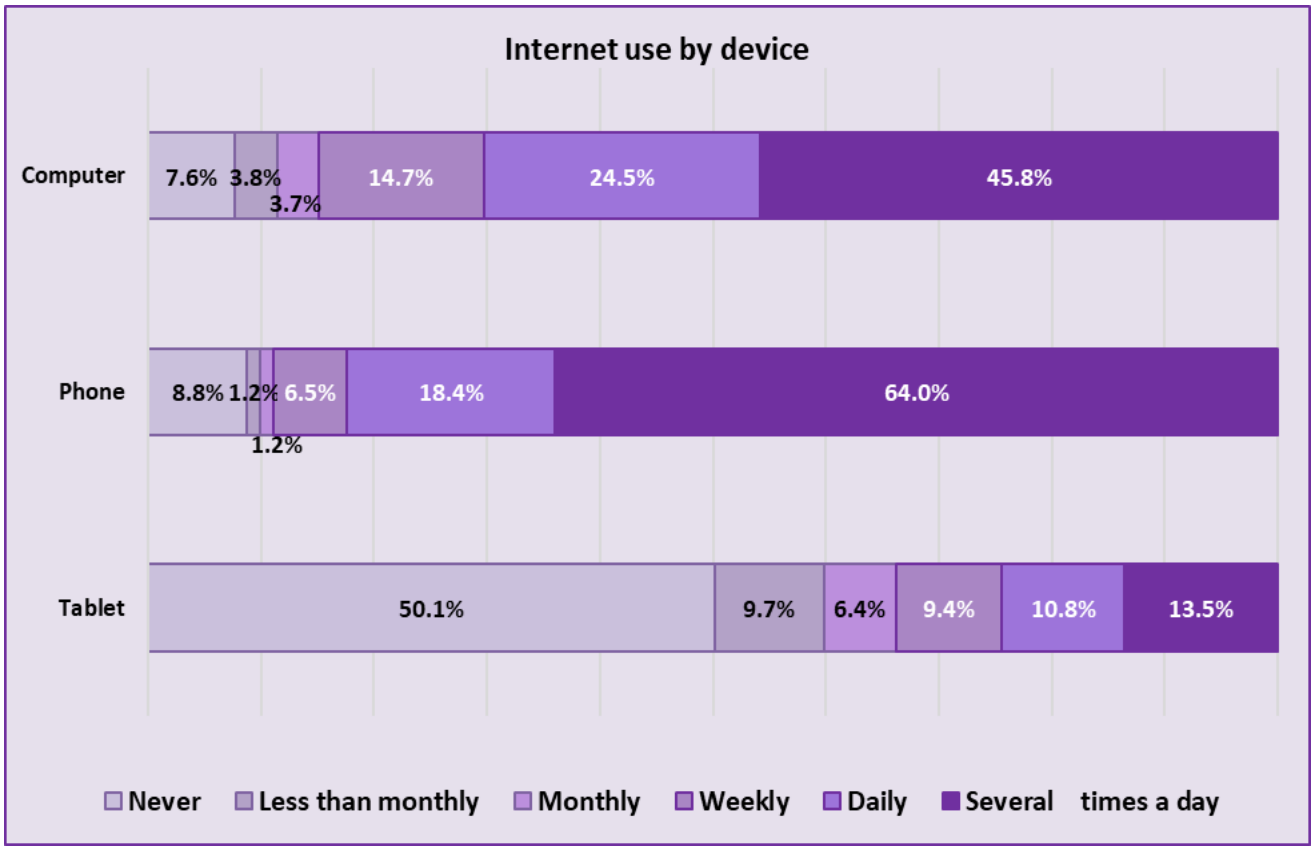
Figure 4. Internet Access Location



In addition, many users are connected through a neighboring connection (30.7%), while 1/4 of the users say that they connect through open public wi-fi spots (24%). Connection through public places, such as libraries or internet cafés, is not as widespread (15.9%).

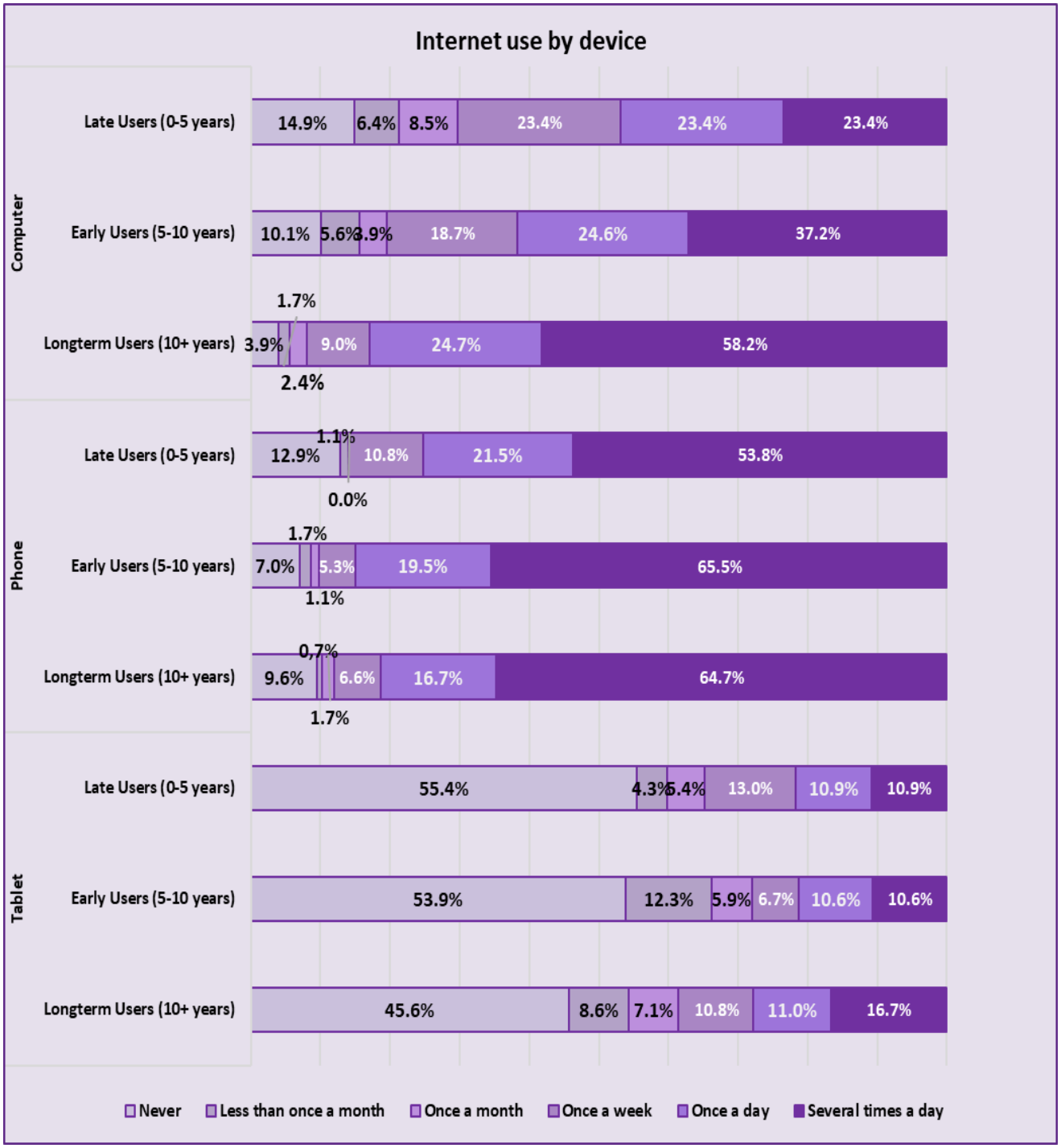
The Greek internet users mainly go online through personal computers and cellphones (see Figure 5). Personal computers are very popular devices, as only 7.6% of the users say that they never use them to go online. Cellphones are the most common devices to go online, with daily use of 82.4%, followed by personal computers, with daily use of 70.3%. In total, 3/4 of the users go online on a daily basis through personal computers or cellphones. Tablets or e-readers are less popular, as only 1/4 use them on a daily basis to go online (24.3%).

Figure 5. Internet Use by Device I



We should note, however, that when we analyze the findings of experienced versus less experienced users, we see a different picture. More specifically, the less experienced users seem to be using fewer device types and go online less often than the more experienced ones. Thus, we can observe that 82.9% of long-term users with more than 10 years of internet presence connect online daily using their personal computers. Almost the same percent (81.4%) go online through their cell phone and only 27.7% through a tablet (see Figure 6). It must also be noted that experienced users (5-10 years of experience) are the most active in connecting to the internet through their cellphone, with a daily use of 85%, more than long-term users, because experienced users are younger than long-term users. Long-term users have the highest percentage in using tablets, while more than half of the experienced users say that they never use tablets to go online.

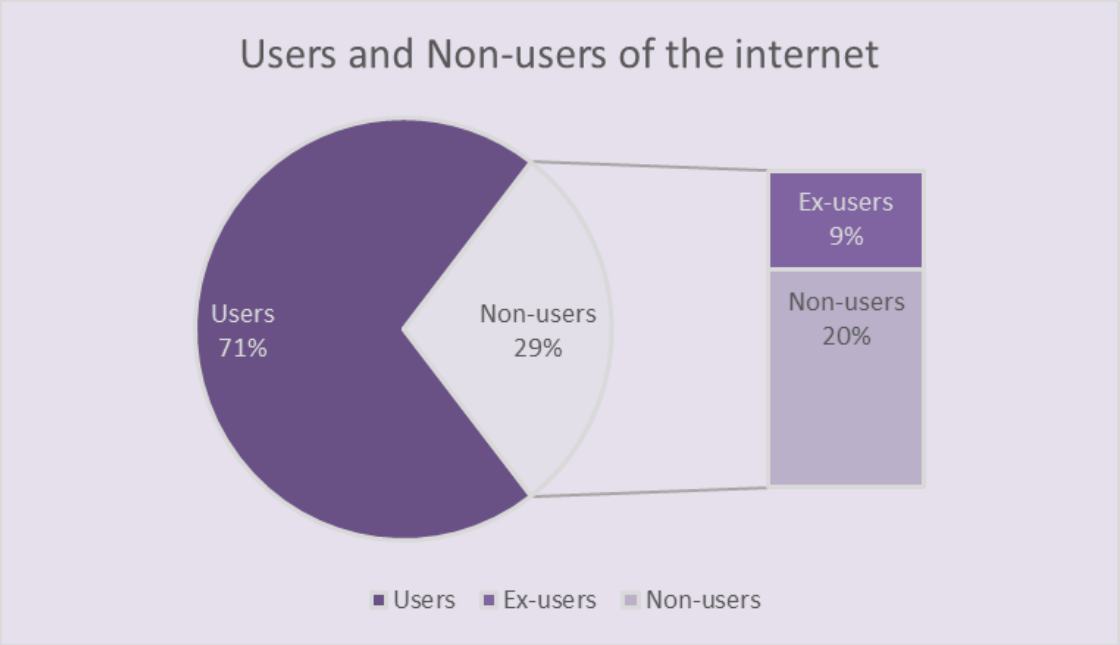
Figure 6. Internet Use by Device II



Approximately seven out of ten non-users not only claim that they do not intent to connect to the internet during the current year (2019), but they are unlikely to use it during the year to come (2020). These respondents are usually characterised as "hard-core non-users" or "immune to progress persons" (Zamaria & Fletcher 2007). They are economically inactive elderly persons (mean age 69.4 years), mostly female (58.4%),

widows or widowers with low education level and low or very low monthly income[33]. A much smaller group of non-users are those "peripheral connectors" or "expected converts" claiming that they have used the internet in the past and are likely to use it in the year to come. In terms of gender, they are mostly female (54.6%), less old (mean age 59.5 years) with medium educational level and unemployed for the most part (see Figure 7).

Figure 7. Users and Non-Users of the Internet

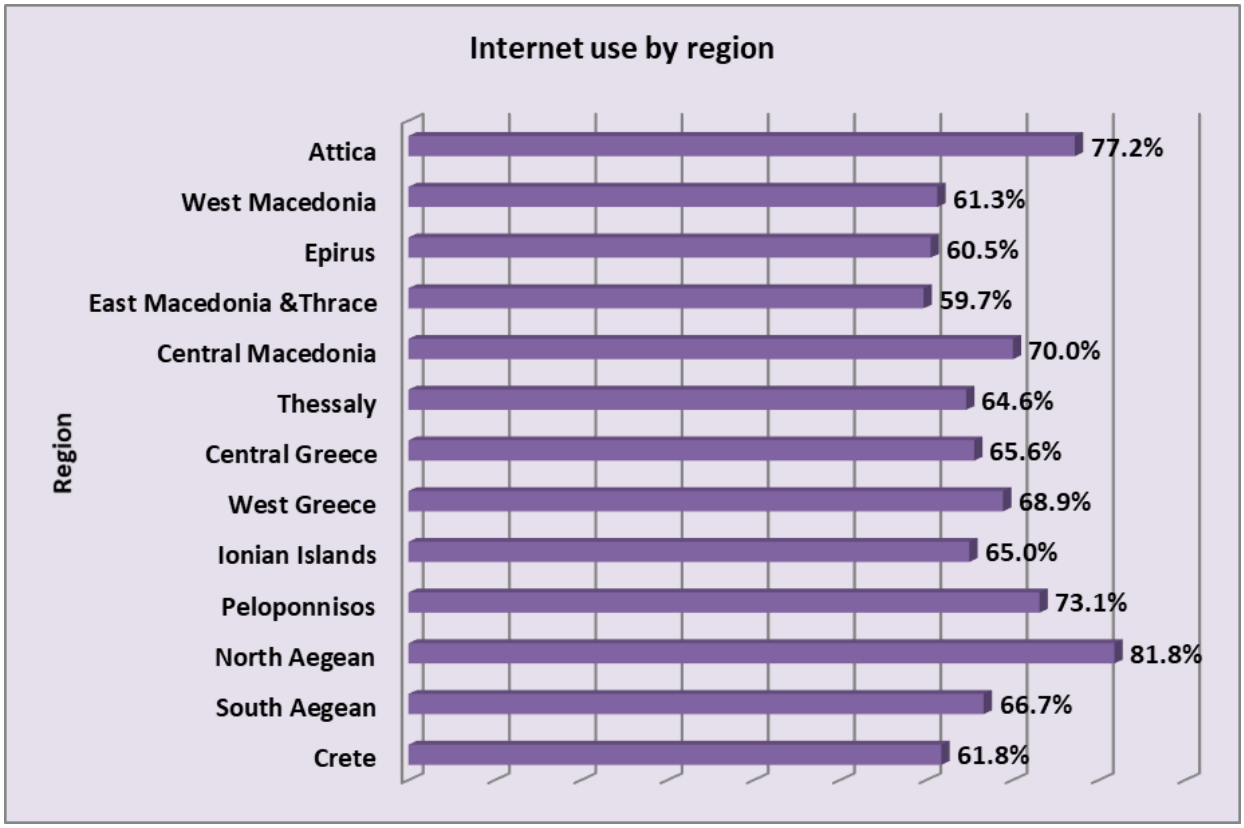


4. Digital divide

Despite the widespread use of the internet in most regions of the country, we can observe important differences between the residents of the thirteen regions. As Figure 8 shows, the percentage of people who identify themselves as internet users fluctuates between 60% and 66.7%, which draws a relatively smooth curve that seems to correlate with the level of economic growth in a broader sense. The only regions that escape this uniformity are Attica, with a percentage of 77.2%, and Central Macedonia, with a percentage of 70%, where the country's cities with the highest population are located. It is also worth mentioning that the highest percentage for internet penetration is in the region of North Aegean (81.8%).

[33] For a relevant elaboration on internet nonuse in Greece, see Gounopoulos et al., 2018; Gounopoulos et al., 2019.

Figure 8. Internet Use by Region

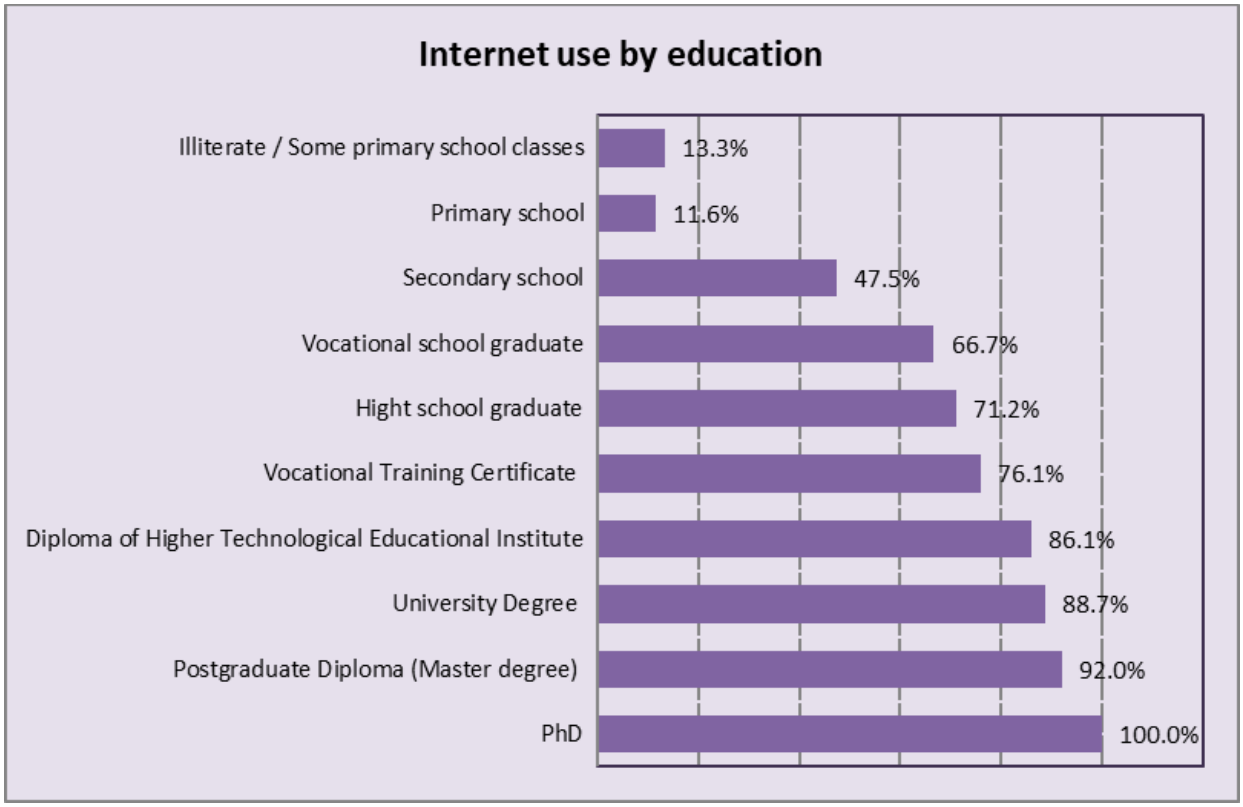


Compared to the previous WIP measurements[34], we can see an upwards trend of internet use per region, which is also confirmed by the ELSTAT (2018) statistics, with Attica having the highest percentage of use with an upwards trend (cf. Tsekeris & Tsekeris 2018).

As already indicated in Figure 2, Internet use seems to decline as people get older. While internet use is almost 100% for ages below 35 years old, it decreases steadily as age increases. Additionally, the higher the education level is, the higher internet use is, with the highest rates at the highest levels of education (see Figure 9).

[34] See EKKE's WIP Reports 2015 & 2017 (National Centre for Social Research 2015, 2017).

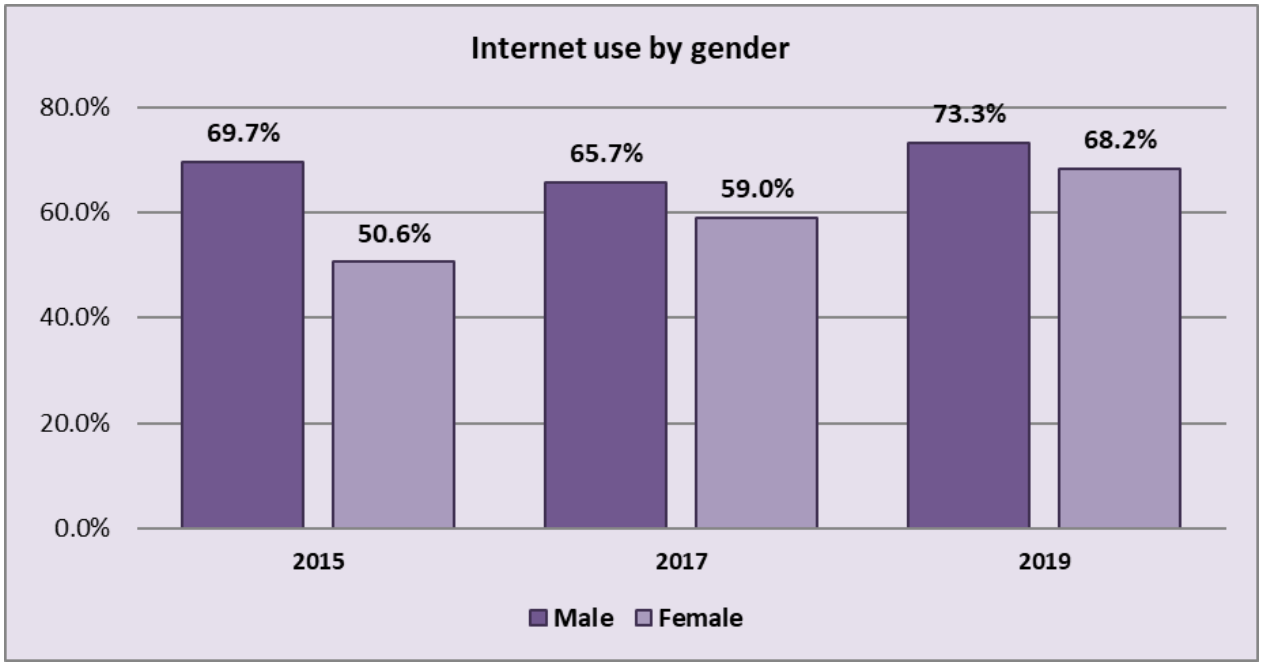
Figure 9. Internet Use by Education



Gender-wise, the gap concerning internet use seems to be decreasing, with the male population having higher percentage in all WIP measurements[35]. Internet use by women continues having an upwards trend (has increased by 9% between 2017-2019) and the gender gap is about 5% in 2019 (see Figure 10). This gap is also confirmed in the other participating countries of WIP measurements (see WIP International Report 2017, 8th edition). As expected, a positive relation is also observed between internet use and income. Higher incomes are associated with higher internet use rates. In all income categories during the recent WIP research wave (2019), there is an increase in internet use. However, the most statistically significant increase between WIP 2017 and WIP 2019 occurs for those declaring an income above €3,000 per month. The positive correlation between internet use and income level in all participating WIP countries, namely, the higher the level of income, the higher the rate of Internet penetration (see WIP International Report 2017, 8th edition).

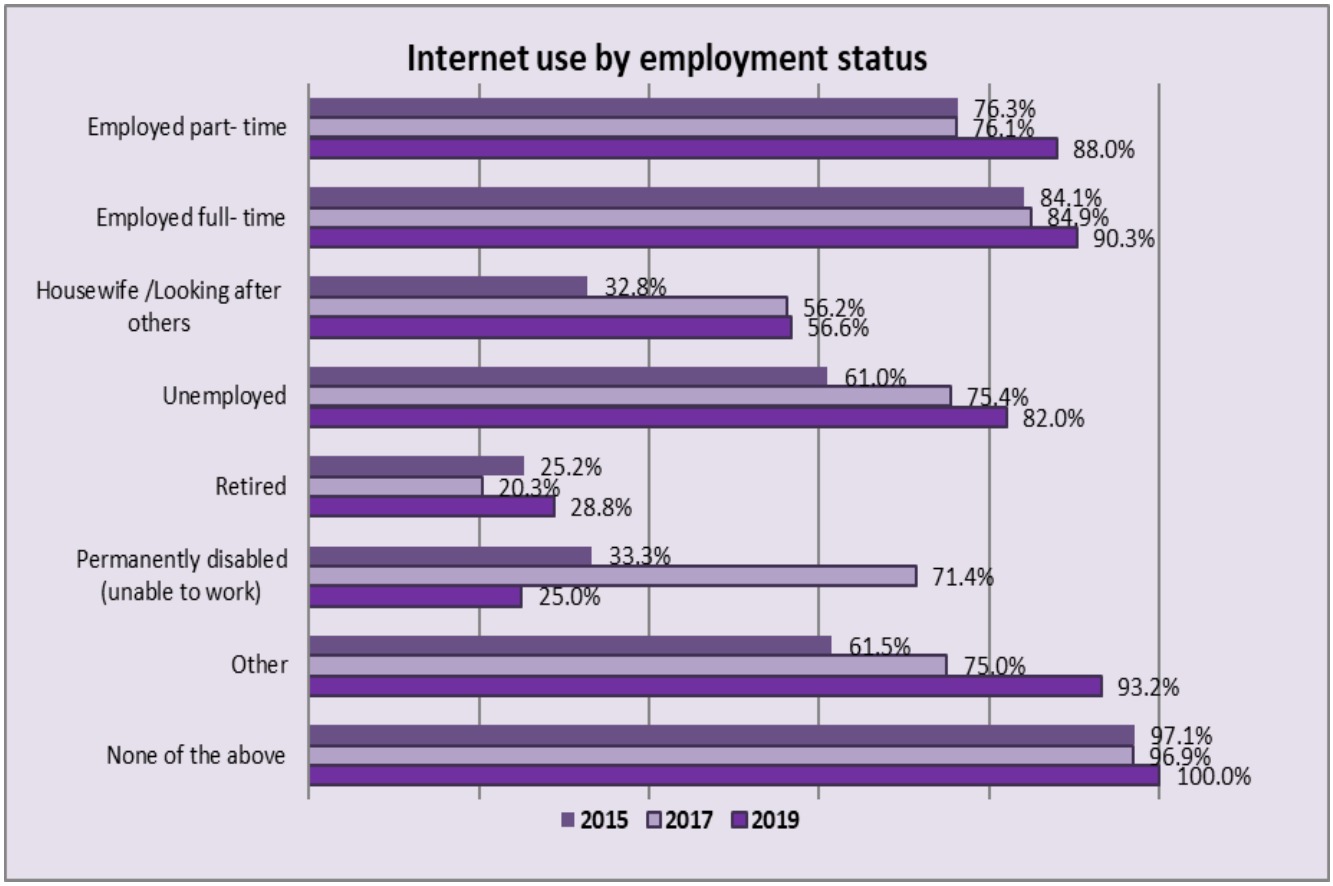
[35] For a similar discussion, see Kontolaimou and Skintzi (2018).

Figure 10. Internet Use by Gender



As shown in Figure 11, internet use seems to increase amongst the employed population. People who have full- or part-time employment maintain very high levels of internet use, 90.3% and 88% respectively. If we focus on the findings of 2015, we can also note an important increase in internet use between people who are either unemployed (21%), or engaging in domestic work and care (23.8%). Retired people are the only category that shows only a small increase in the already small percentage of internet use, as their percentage is currently at 28.8% from 25.2% in 2015.

Figure 11. Internet Use by Employment Status

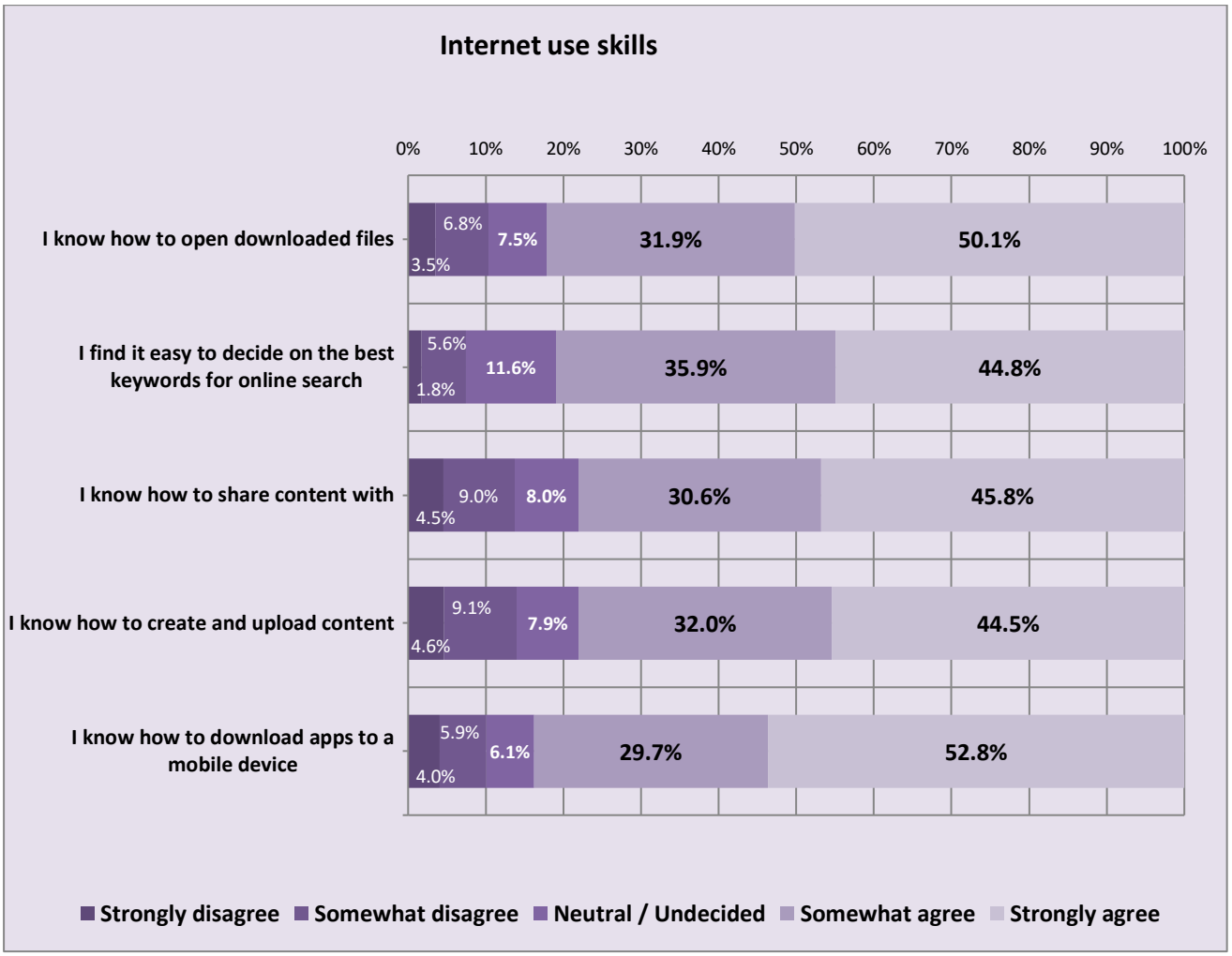


Based on the aforementioned data, we can conclude that gender, income, age, education and employment status have direct positive or negative correlations with internet use in Greece. This conclusion is in line with the data from the rest of the participating WIP countries (see WIP International Report 2017, 8th edition).

With regard to digital divide after access, one can see a high subjective perception from most internet users on being able to perform a series of digital tasks (Figure 12). There is a higher percentage in relatively simple tasks, which are related to basic communication needs on the internet, like opening files or downloading apps on mobile devices (82.5%), or how to search for specific queries/content using appropriate key words (81%). The percentage goes down for more complicated tasks; for example changing privacy settings for content use online, or creating content and sharing it with others (76.5%)[36]. Over time, digital access and practices of using digital technology lead to higher levels of digital divide and various forms of inequality (Scheerder et al., 2017).

[36] Regarding the human capital/digital skills variable in DESI, it is notable that there is a discrepancy between DESI Greek scores and the self-rating of our own respondents. Yet, the items differ in the two measurements.

Figure 12. Internet Use Skills



5. Internet uses

The WIP database registers different kinds of internet use such as communication, information, entertainment etc. The most popular uses of the internet among Greek users pertain to communication purposes, such as e-mail exchange and instant messaging. A high percentage of users (75.7%) report they exchange messages on a daily basis.

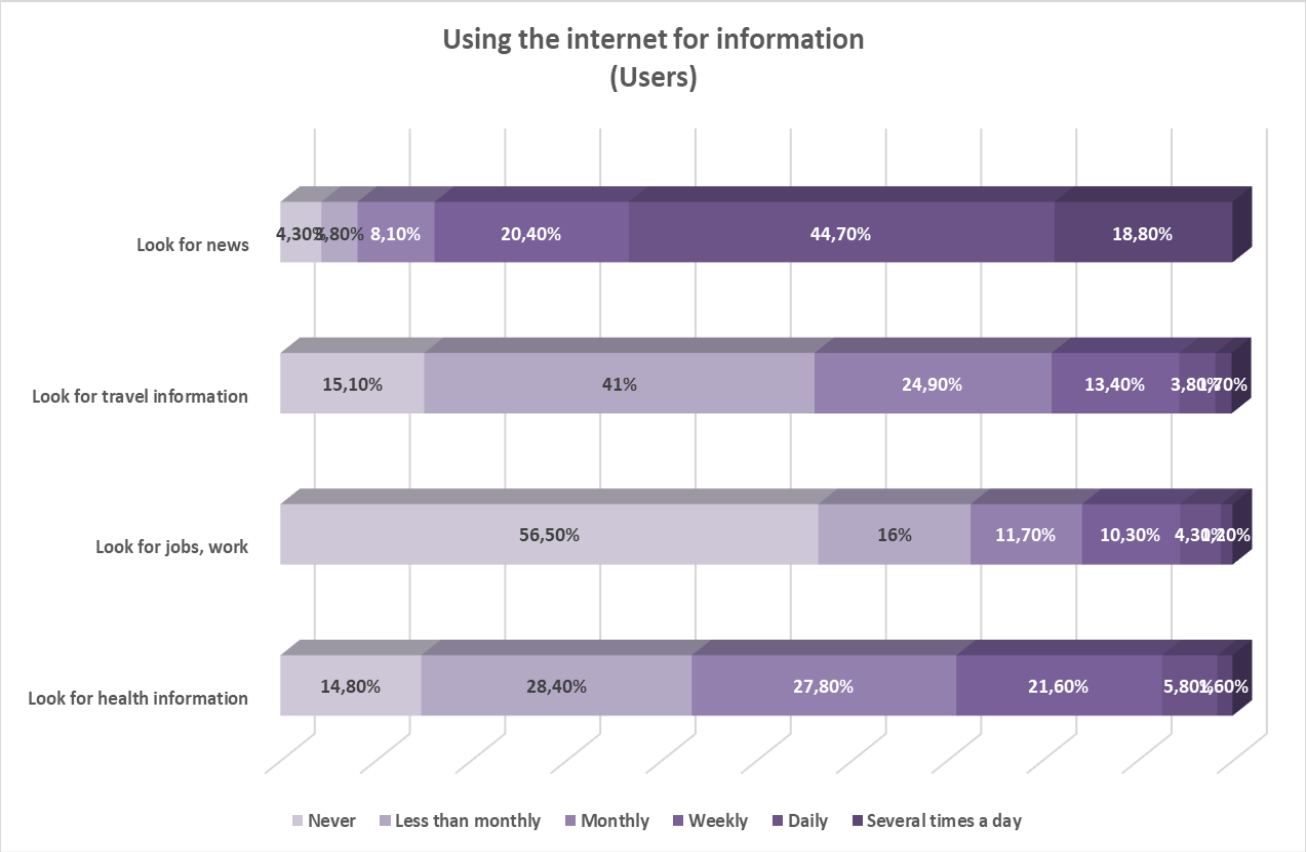
Moreover, 63.3% of the user population check their e-mails at least once or several times a day. As it is commonly found in most countries participating in the World Internet Project, electronic mail is a very popular activity. In nine of the 11 countries included in the World Internet Project[37], the majority of users say they check e-mails at least daily (from one to several times a day). Phone calls over the internet

[37] WIP International Report 2018, 8th edition.

are also popular among Greek users, with 40.1% of them making online calls at least once a day, and 25.7% of them at least once a week, while other activities, such as posting original content, as well as sharing or reposting content, are less frequently reported.

Internet use as information source mostly involves searching for news, with 63.5% of the respondents turning to the internet for news consumption on a daily basis, in order to read local, national or international news (see Figure 13)[38].

Figure 13. How often do you use the internet for each of these informational activities?



Also, Greek users access the internet to search for issues related particularly to their health, with 29% of them searching at least once a week, and 27.8% of them at least once a month. Searching for employment opportunities, as well as for travel information, seems to pertain to the least popular online informational activities. It is worth noting that both the communication and information use of the internet in Greece has significantly increased during the COVID-19 pandemic[39].

[38] In the recent work of Newman et al. (2019), it is reported the very high use of social media platforms for news in Greece (a behaviour that has been linked to incidental exposure to news sources), with 20% of Greeks online (and 32% of those under 35) claiming that social media are their main source of news.
[39] https://medianalysis.net/media-research/erevna-ellines-koronoios/

As far as the entertainment uses of the internet are concerned, the most frequent activity of Greek users is searching for music and videos, as the majority reports that they download or listen to music and download or watch videos, with one-third of them engaging in such uses many times during the day. Playing videos games is also a quite popular online activity (see Figure 6 in the Appendix). To paraphrase Neil Postman (1985), entertainment seems to be the super-ideology of the internet.

Moreover, the overwhelming majority of the users report that they never visit online dating sites (90.9%)[40], e-gambling sites (82.1%), or religious content websites. In addition, over a half of the surveyed users report that they never visit sexually explicit websites.

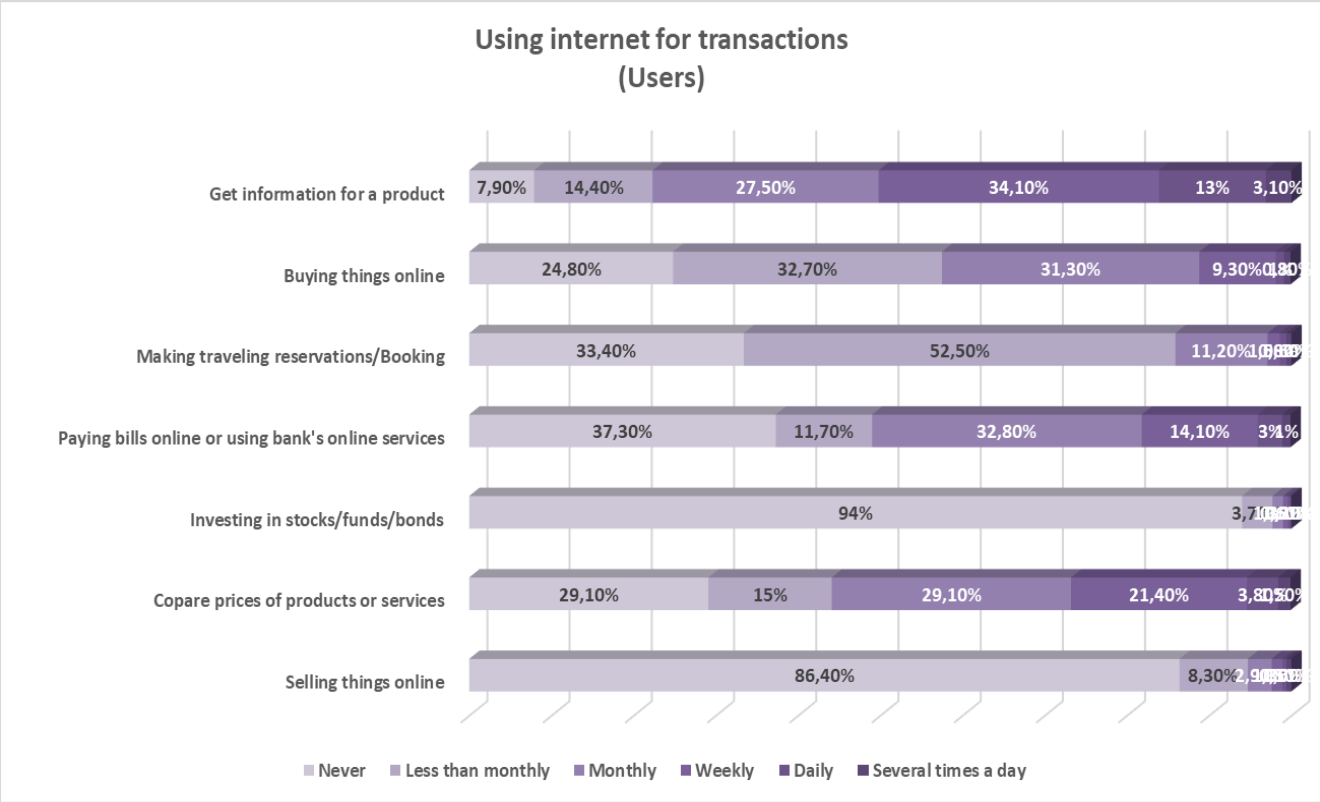
Internet use for transactions between Greek users is relatively limited, but with increasing trends. In fact, 32.8% of internet users report paying online or using online banking (e-banking) at least once a month, while 37.3% of them state that they never used electronic services (see Figure 14). This is a significant change to the previous WIP survey, where almost 60% of the users reported that they never had online transactions such as paying bills online or using internet banking services.

Additionally, there is limited use of the internet for comparing prices of products or services (29.1% report once a month and 21.4% weekly), as well as for travel bookings. Almost all respondents (94%) say that they never use the internet to make any investment. Similarly, 86.4% report that they never use the internet in order to sell things, while 31.3% make online purchases at least once a month. It is arguable, however, that the reported online transaction practices have significantly changed during the COVID-19 era[41].

[40] Cf. https://www.pewresearch.org/internet/2020/02/06/the-virtues-and-downsides-of-online-dating/

[41] See e.g. http://news4money.gr/greek-consumers-significantly-increase-use-of-e-commerce-survey-shows/. For a research analysis of how Americans adapted their relevant practices in order to cope with the coronavirus, see https://www.digitalcenter.org/coronavirus-study-findings/.

Figure 14. How often do you use the internet for each of these transactions?



In terms of learning, Greek users mainly use the internet to find or check a fact and to look up word definitions, as the majority search for such information at least once a week (see Figure 7 in the Appendix)[42]. Finding information on school-related work is not a very common activity for the majority of respondents, something which was expected, given that such learning activity concerns students. Finally, the number of internet users participating in distance learning programs is very small. Nevertheless, more empirical research is needed to investigate the role of online learning in our lives during the COVID-19 era.

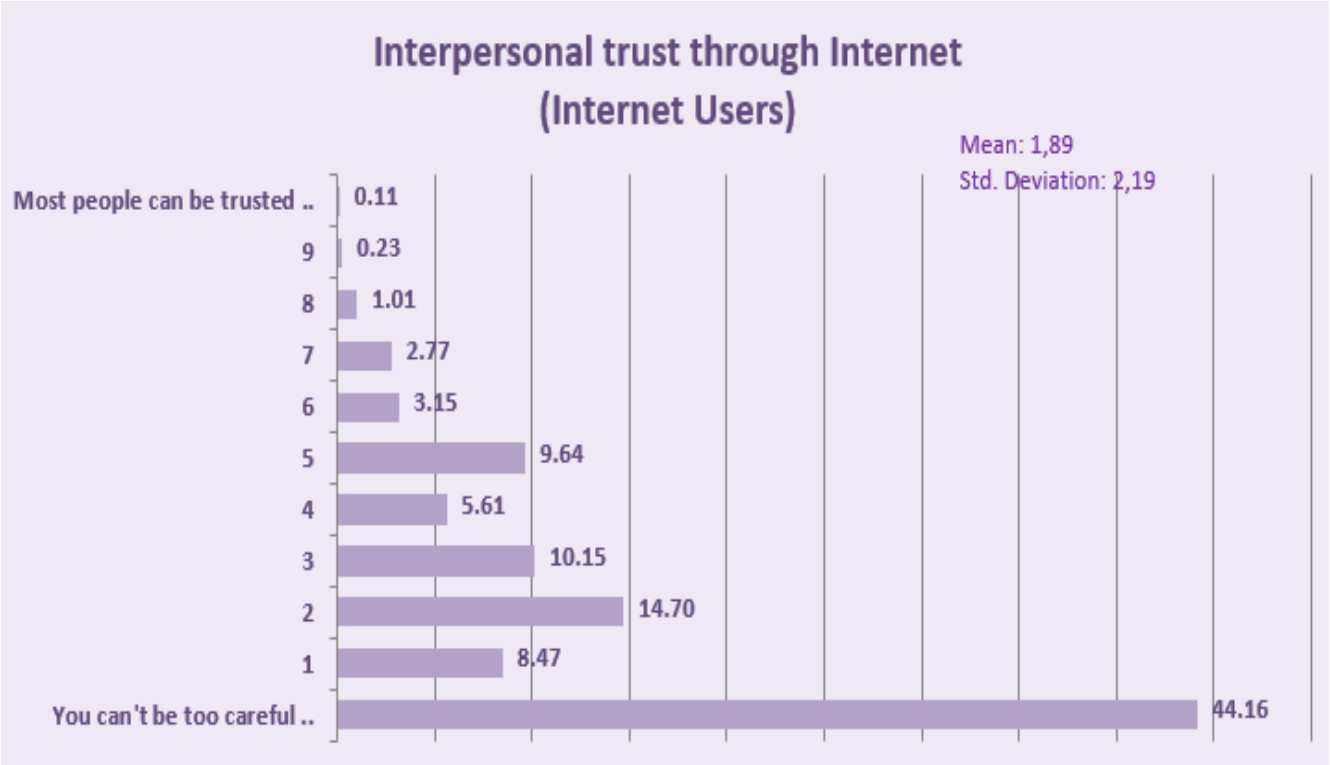
[42] Of course, in a messy internet "where the archive is unreliable, impermanent and imperfect and where the tools with which we find things are neither neutral nor designed for the interests of those using them, finding that truth is hard. Where what is true is deliberately obscured and what is fake is promoted it is easy to end up being controlled and manipulated" (Bernal, 2018: 229-230).

6. Social capital inside & outside the internet world

Online interpersonal trust through the internet was measured on an 11-point scale, ranging from 0 to 10. This question was addressed only to internet users, as follows:

"Generally speaking, would you say that most people on the INTERNET can be trusted, or that you can't be too careful in dealing with people? Please tell me on a score of 0 to 10, where 0 means you can't be too careful and 10 means that most people can be trusted."

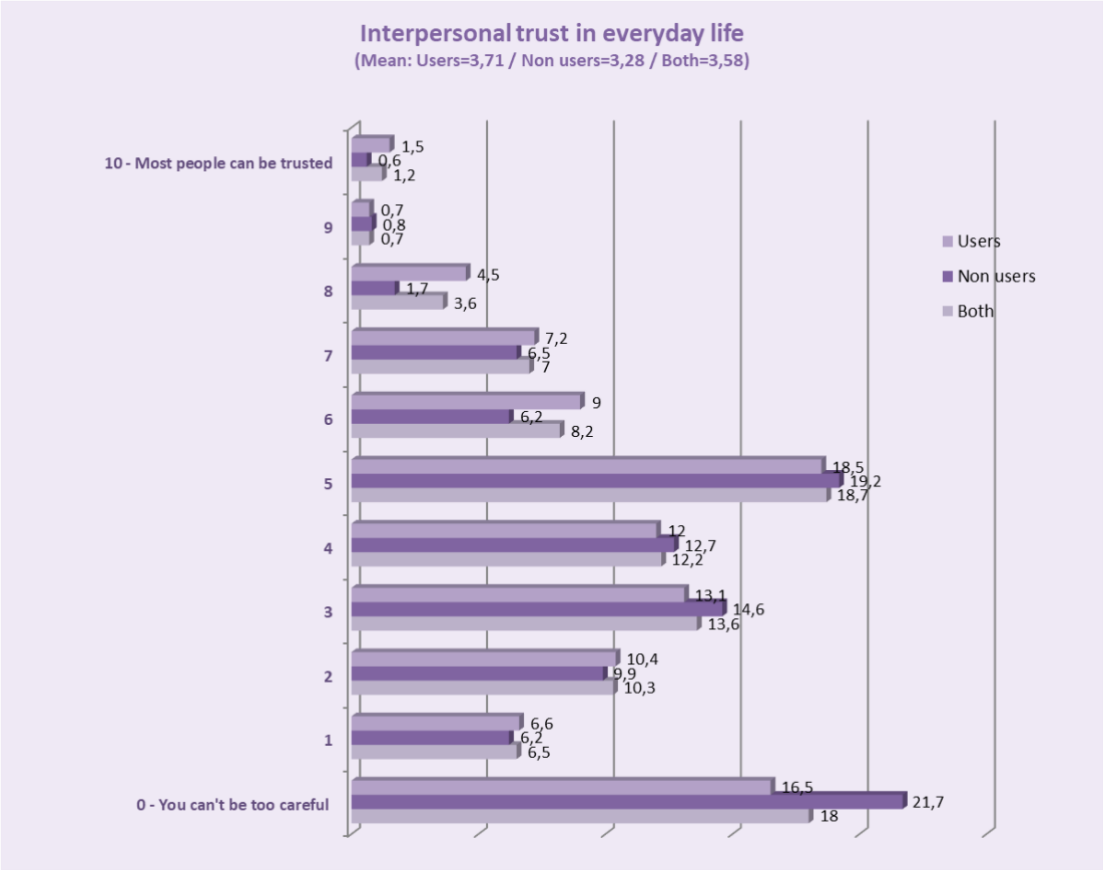
Figure 15. Interpersonal trust through internet (Internet Users)



The mean value of interpersonal trust for internet users is just 1.89. Only 7.27% of the sample scored values above 5. Notably, 44.16% of the sample scored the minimum value (zero), while 48.03% scored values between 1 and 5 (see Figure 15).

Correspondingly to interpersonal trust through the Internet, offline interpersonal trust in everyday life was questioned. The sample included both users and non-users. The mean value of interpersonal trust in everyday life is close to 3.58, which is clearly higher than the corresponding mean value of interpersonal trust through internet. It is worth noting, that there is statistically significant difference in mean interpersonal trust between internet users and non-users (see Figure 16).

Figure 16. Interpersonal trust in everyday life (Internet Users vs Non-Users)



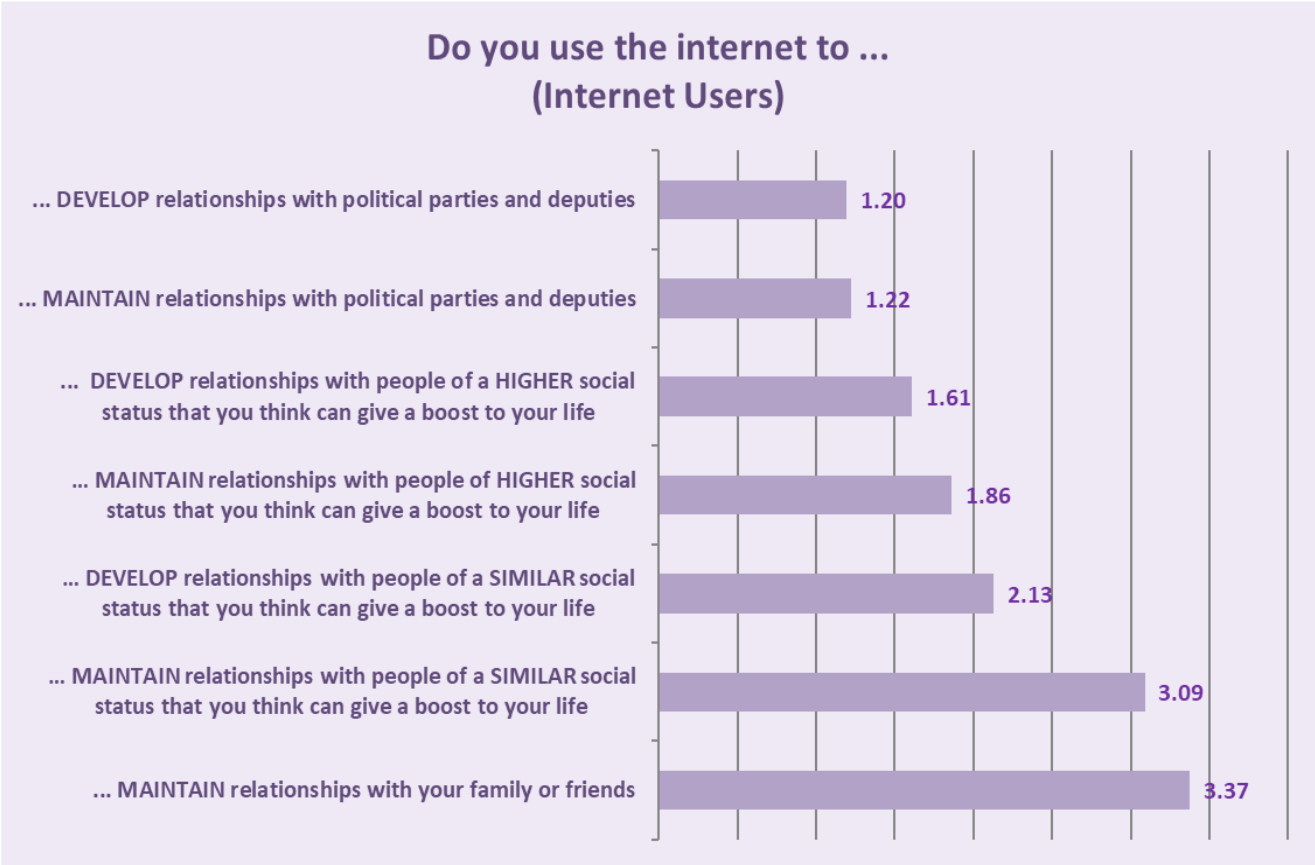
Users score a higher mean value of trust approaching 3.71, while the corresponding mean value for non-users is 3.28. Amidst the widespread distrust and mistrust of the Greek public, this finding suggests that although internet users are suspicious of the internet itself as a means for conveying valid information and surveillance-free communication they seem to be more open to other people outside the internet world compared to non-users. From a medium theory perspective, the likelihood is that the grammar of the internet biases users toward sociability.

Having that in mind, in an effort to measure different types of social capital among Greek users, respondents we asked a number of pertinent questions tapping bonding, bridging and linking social capital. Concerning the maintenance and development of relationships through Internet, they were asked seven questions ranging from 1 to 5, where 1 corresponded to "Not at all" and 5 to "To a great extent". The questions were negotiated on maintaining - developing relationships online: with people of "similar social status", "higher social status" and "political parties or deputies". In addition, there was a question negotiating maintaining relationships with family or friends through the internet.

Figure 17 shows that people use the internet mainly to maintain relationships with family or friends at an average of 3.37, and to maintain relationships with people

of similar social status at an average of 3.09. Secondarily, the internet is used to develop relationships with people with a similar social status (mean 2.13), to maintain relationships with people of higher social status (mean 1.86), and to develop relationships with people of higher social status (average value 1.61). Remarkably low is the internet use to maintain or develop relationships with political parties or deputies (average values 1.22 and 1.20 respectively).

Figure 17. Multiple reasons to use the internet (Internet Users)

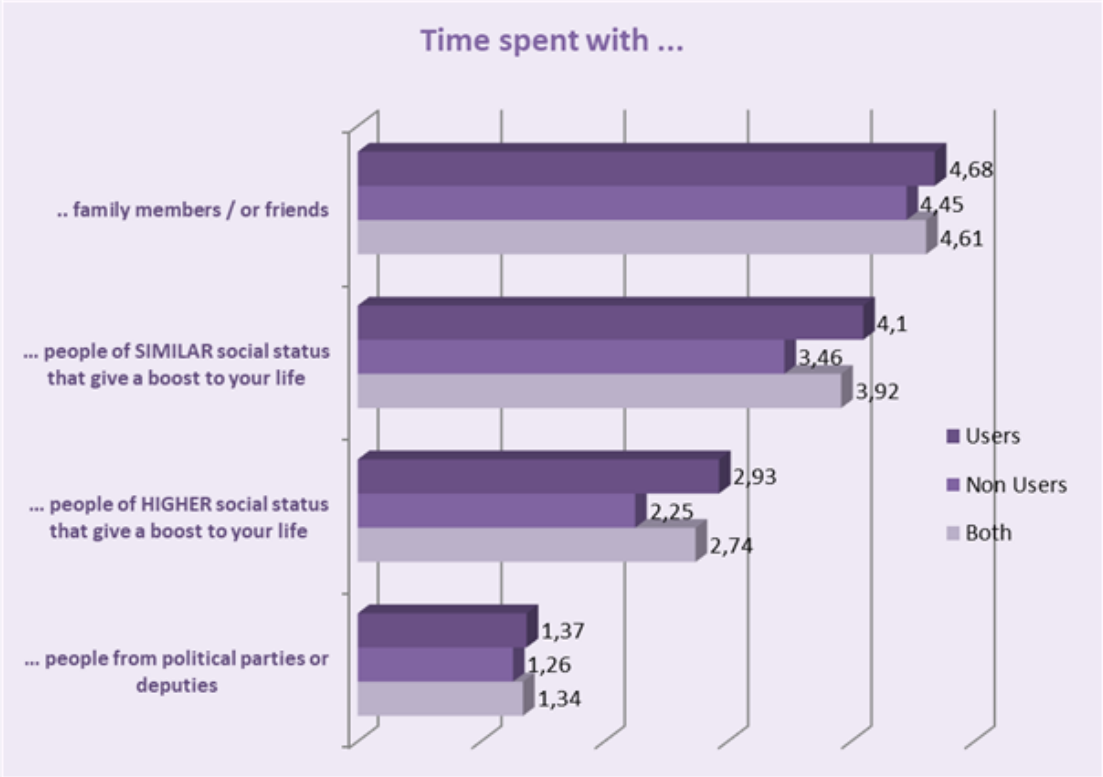


Four questions were asked to both users and non-users about the time management for relationship maintenance. The questions were asked on a five-point scale, with 1 corresponding to "Never or almost never" and 5 to "Daily or almost daily". As shown in Figure 18, people spend more time with family members or close friends (mean 4.61), and lesser time with people of similar social status (mean 3.92) and of higher social status (mean 2.74), and finally with people from political parties, or deputies (average 1.34).

Comparing internet users and non-users, we conclude that there are statistically significant differences for all three types of social capital, with users scoring higher than non-users. The highest relative differences between internet users and non-users

concern the bridging social capital, i.e. the time management with people of similar or superior/higher social status that give a boost to respondent's life.

Figure 18. Time management for relationship maintenance



Trying to understand online and offline sociality better, users and non-users were asked about the number of greeting phone calls or video calls they receive or make during Christmas or Easter, as well as about the number of greeting messages.

Figure 19. Greeting cards/messages people make/receive during Christmas/Easter

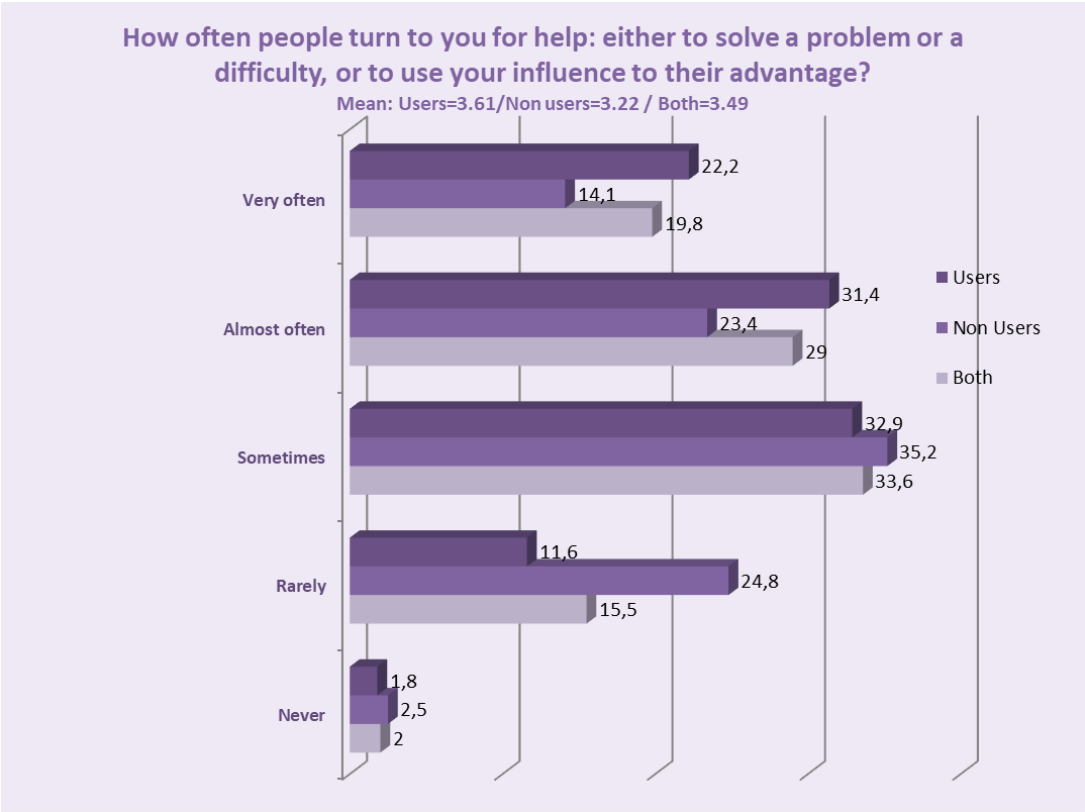
Considering that phone calls or video calls concern more strong ties, whereas text messaging (e.g. SMS, e-mail, mms, messenger, viber, etc., excluding corporate texts) concerns weak ties, the average values of the number of calls or messages are depicted in Figure 19. The average number of greeting calls received was 21.93, while the average number of greeting calls made was 19.08. The corresponding values for the messages were 20.56 and 17.54 respectively.

In relation to internet users and non-users, the mean number of greeting calls received by internet users during Christmas or Easter was 24.25, while the corresponding mean number for non-users was 16.26. The difference was statistically significant. Statistically significant differences between internet users and non-users apply to all other variables of this section. Users score higher than non-users on outgoing calls (20.63 vs. 15.29), incoming messages (26.65 vs. 5.64) and outgoing messages (23.42 vs. 3.16). Extremely large differences detected in the number of messages - either for outgoing or incoming messages - probably occur due to the fact that non-internet users make limited use of their mobile phone and do not make or receive text messages considered to be helpful in strengthening or maintaining weak ties.

Finally, in order to assess the role of respondents as “nodes” within social capital networks they were asked: "*How often do other people turn to you for help: either to solve a problem or difficulty, or to use your influence to their advantage?*" (Figure 20). Answers ranged from 1 – “Never” to 5 — “Very often”. We found that 48.8% of the respondents think that people turn to them for help "very often or almost often", while only 17.5% think that people turn to them for help "Never or rarely".

Comparing internet users and non-users, 53.6% of internet – users self-identify as 'node' (people turn to them for help "very often or almost often"), while the corresponding percentage for non-users is 37.5% (we come to similar results if we assume means instead of percentages, since the mean score for users is 3.61 versus 3.22 for non-users).

Figure 20. Frequency of asking for help



The above pattern seems to be the same either for offline everyday life or for the online internet world. We also documented the superiority of internet users in all dimensions of social capital examined as well as the large score differences between users and non-users in terms of bridging social capital and messages. *Nevertheless, as indicated above, the dimension of bonding social capital (connecting* with family members or close friends) is much stronger than the dimensions of bridging or linking

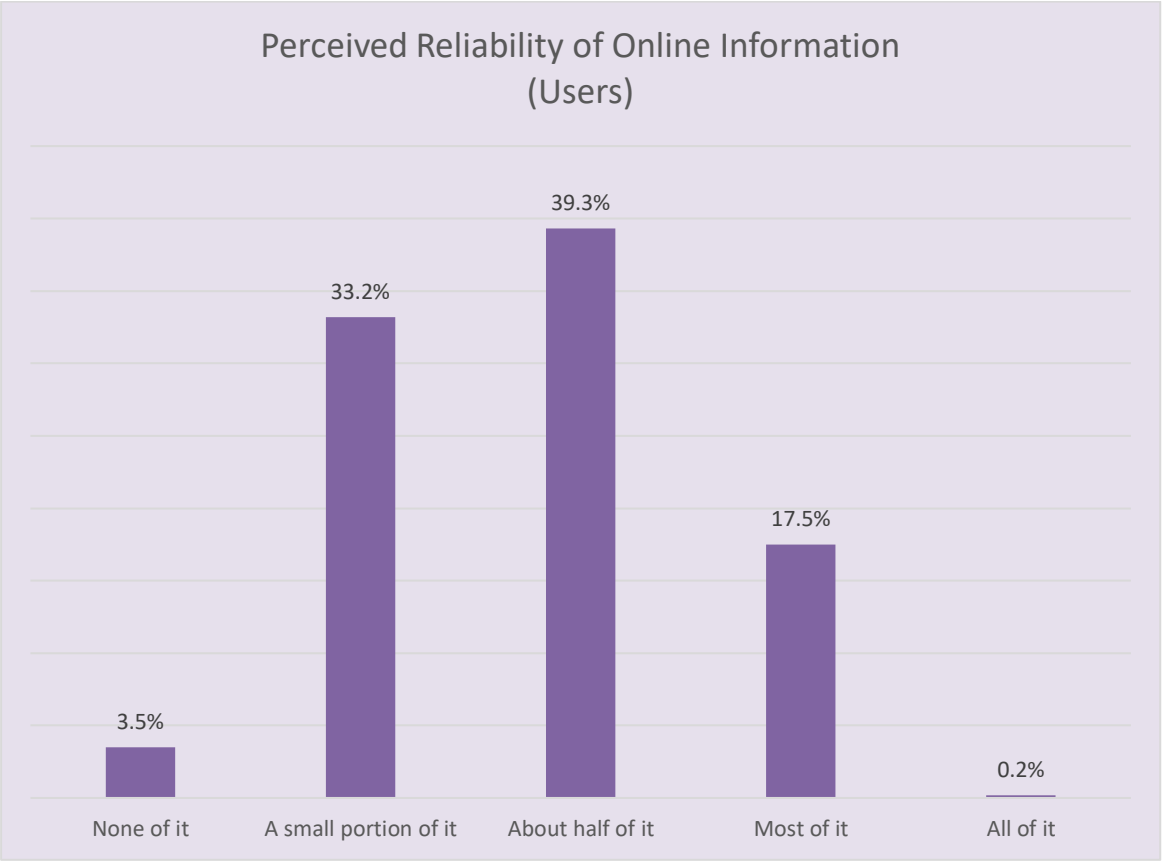
social capital, associated to civic mindedness, public spiritedness and civil society processes[43].

7. Perceptions, experiences and concerns

The majority of internet users in Greece (72.5%)[44] appear to be rather sceptical regarding the reliability of information they find online. As Figure 21 shows, most users (39.3%) hold a moderate perception, verifying that about half of the information they find online is reliable, while 33.2% estimate that only a small portion of the relevant information is reliable. Interestingly, less than one out of 100 internet users believe that all information conveyed on the net is reliable. Nonetheless, respondents avoid rejecting online information completely; only 3.5% claim that none of the online information is reliable. These research results correspond to Media Trust Index[45] among EU countries (Special Eurobarometer 452), where Greeks consider social media rather trustworthy (38%), ranking them second after radio (40%), while newspapers (33%) and TV (16%) are considered as less reliable.

[43] For this conceptual approach, see the classical work of Robert D. Putnam (2000).
[44] Total percentage for answers: "*A small portion of it*" and "*About half of it*".
[45] The Media Trust Index has been constructed on the basis of levels of trust in four media analyzed in the Eurobarometer, namely, Radio, Newspapers (printed and online), Television, Social Media (online social networks, blogs, video hosting websites, etc.).

Figure 21. How much of the information you find online do you think is reliable?



Although Greek internet users appear skeptical as far as the reliability of online information is concerned, they seem to perceive themselves as rather *capable to distinguish fake news on the net*[46]. This is however a surprising finding given that detailed fact-checking (or proper source-checking) is considered as an increasingly difficult task (Patel, 2017; see also Bavel et al., 2020). According to our data, more than seven out of ten users state that they can distinguish fake news, while 2.5 out of ten deny that they have such ability during web browsing[47].

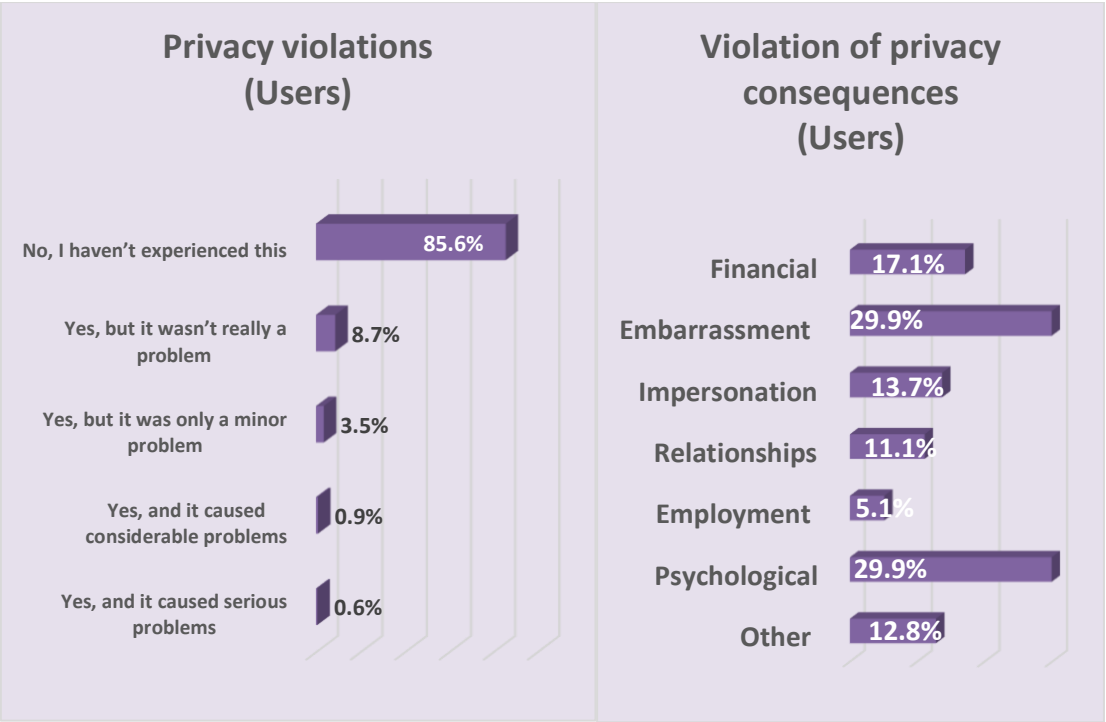
The vast majority of Greek users (85.6%) state that they have never experienced privacy violation online (during the past year). To a much smaller extent, users report cases of privacy violation that were not really problematic (8.7%) or

[46] It is notable that, according to the Flash Eurobarometer on Fake News and Online Disinformation (2018), which measured the perceptions and concerns of 26,576 European citizens around this topic, fake news are widely spread across the EU, with 83% of respondents saying that fake news represent a danger to democracy, and 85% of them perceiving disinformation as a problem in their country. See https://ec.europa.eu/digital-single-market/en/news/final-results-eurobarometer-fake-news-and-online-disinformation

[47] Yet, according to Newman et al. (2019), the Greek media landscape appears vulnerable to fake news and disinformation, something which is arguably linked to Greek users' strong preference towards online news consumption: "in the long-tail list of the most visited websites are a number of news websites or blogs that regularly engage in dangerous conspiracy theories" (Newman et al., 2019: 87).

caused only a minor problem (3.5%). Serious privacy violations are reported rarely (see Figure 22). As far as the consequences of privacy violations are concerned, they are rather personalized, since they often involve negative emotions, such as embarrassment (29.9%) or other psychological state (29.9%) (e.g. being mocked or bullied). Also, 17.1% of the respondents report financial consequences. In addition, 13.7% state that someone had impersonated them online and 11.1% refer to interpersonal relations damage. Professional harm is reported to a much less extent. It is customary that people want privacy from those who (might) victimize them (Bernal, 2018).

Figure 22. In the past year, have you had your privacy violated online and, if so, how much of a problem was it? What were the consequences of this violation?

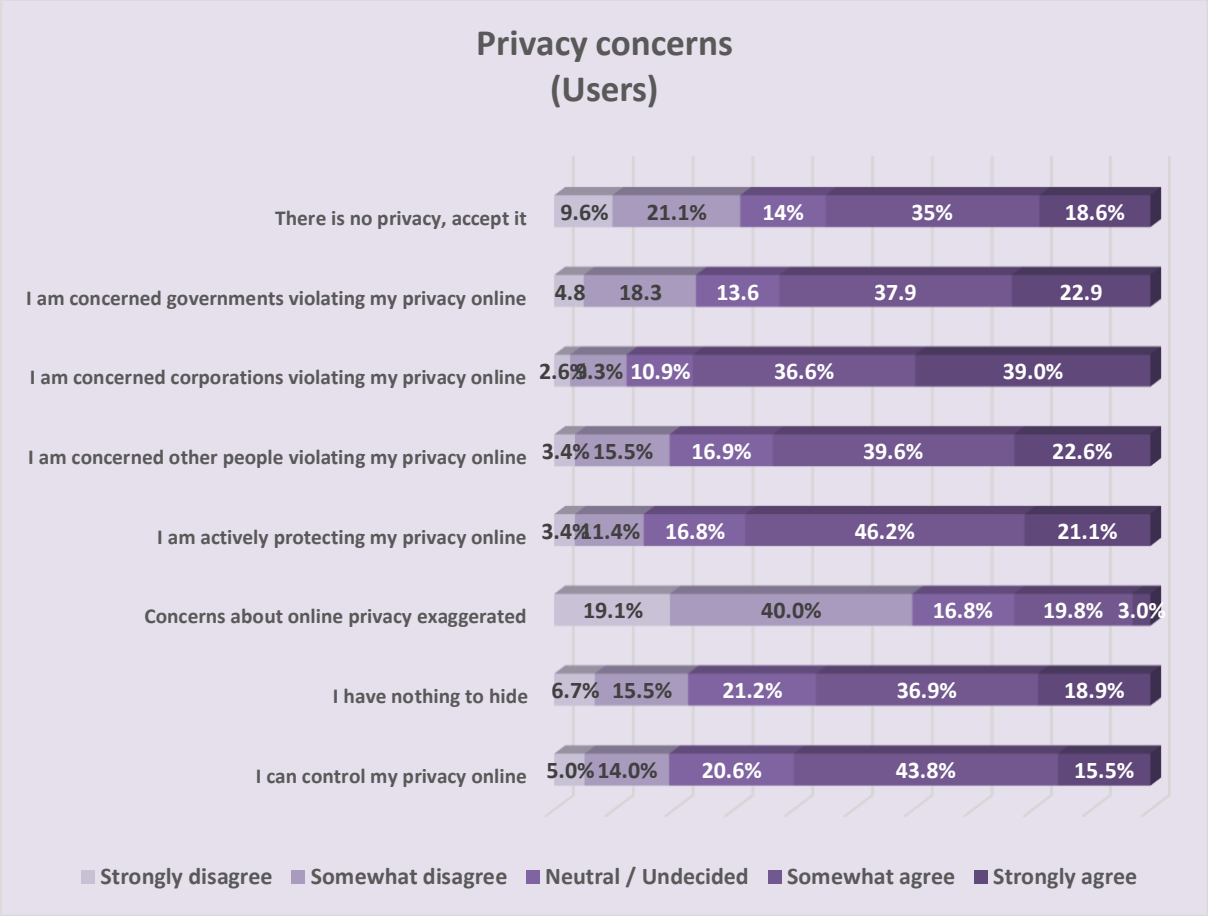


In this respect, more than one in two internet users (53,9%) in Greece perceive the internet (the Web) as an insecure space as far as privacy is concerned claiming that "There is no privacy online"; 59.1% of them do not agree with the statement that "Concerns about online privacy are exaggerated". And since 59.3% of them have the impression that they can control their privacy online, it seems that persons connected to the internet face up privacy concerns actively, something which is also verified by a large number of respondents (67.3%), who state that they protect their privacy online (see Figure 23 - total percentage of "*Somewhat agree*" and "*Strongly agree*").

However, an apparently ambiguous impression is created when we have a closer look at special privacy concerns. Although the majority state that they have nothing to hide (55.8%), special concerns about privacy violations appear. In detail,

most respondents (75.6%) concern about privacy violation by corporations, 62.2% by other persons, and 60.8% by governments.

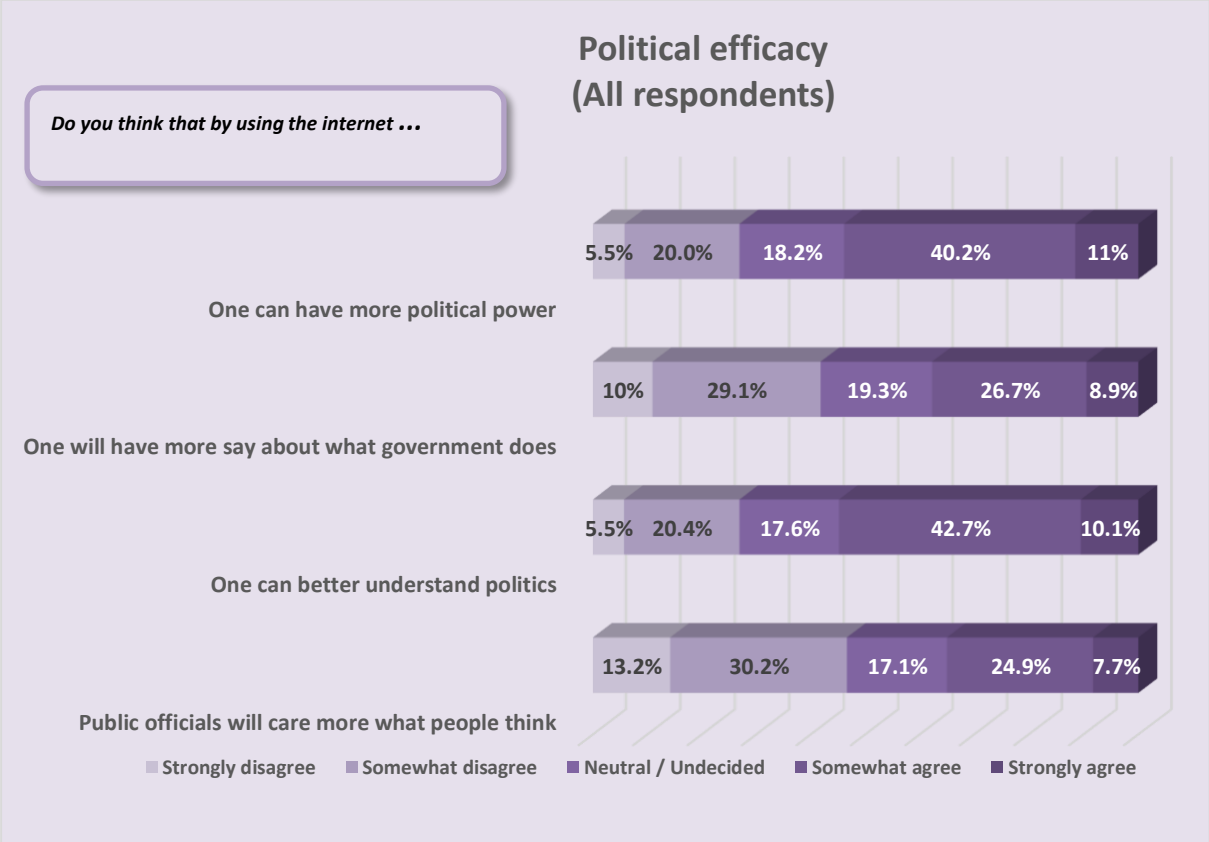
Figure 23. How much do you agree with the following concerns about privacy online?



For the purpose of assessing perceptions on political efficacy, both users and non-internet users were asked to state agreement on four statements which tap both internal and external political efficacy. Drawing from Figure 24, it is worth noting that almost two out of ten users hold a neutral state or have not decided on this matter. The internet appears to be a preferable source of information gathering on politics, since most of all respondents (52.8%) verify that Web surfing can support a person on better understanding politics. In addition, approximately one in two (51.1%) perceive the internet as an effective means to have their voices heard, since they agree on the statement that *by using the internet one can have more political power*. But respondents' perception of the effectiveness of the internet on increasing the citizen potential to influence political reality is low. This pertains to their disagreement on two statements. Namely, 39.1% state that using the internet does not enable people to have more say about what government does, while 43.4% state that public officials will not care more on what people think. Actually, the responses here seem not to align with the optimistic view (or imaginary) of the internet as a means for increasing "collective intelligence" (Bostrom, 2014), or "for reinvigorating politics", for providing

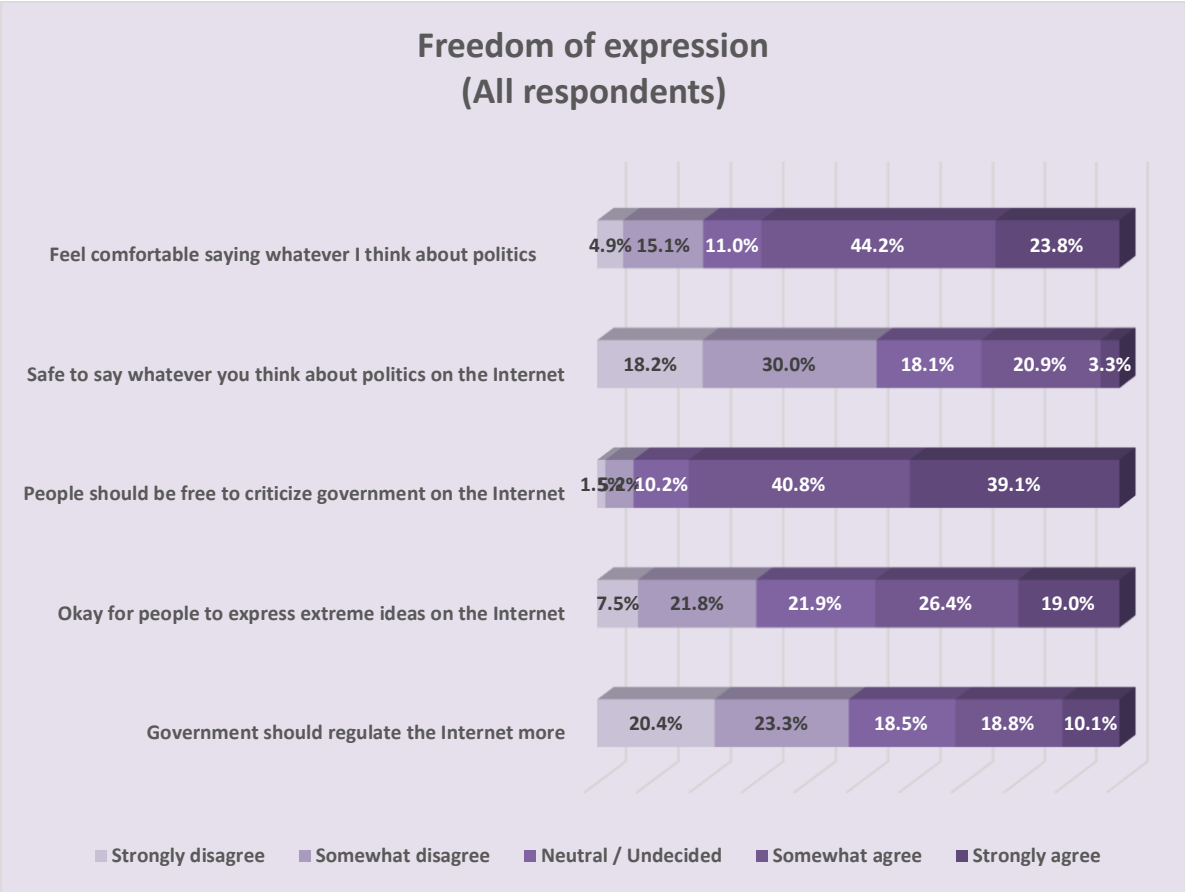
possibilities "for beginning something new", and for facilitating "various aspects of politics in a way that is simply not possible offline" (Smith, 2017: 3).

Figure 24. How much do you agree with these statements on political efficacy?



All participants were asked to state agreement with five statements reflecting perceptions of freedom of expression. As seen in Figure 25, the majority (68%) express that they feel comfortable saying whatever they think about politics in general, confirming a significant degree of freedom of speech in Greece. As far as the internet is concerned, most users and non-users define it as a rather unsafe place to express political ideas. Also, 48.2% affirm that it is not safe to say whatever you think about politics on the internet. Arguably, an atmosphere of suspicion may stifle ordinary people's expression (Bernal, 2018: 134). In addition, it appears that the respondents support freedom of expression on the Web, since almost eight out of ten (79.9%) agree on the statement that "*People should be free to criticize government on the internet*", while more than four out of ten (45.4%) accept the expression of extreme ideas on the Web. In the same vein, a high percentage (43.7%) reject potential increase of internet regulation by the government.

Figure 25. How much do you agree with the following statements on freedom of expression?



8. Concluding remarks

Under the research prism of the 3rd wave of the World Internet Project-Greece, the "Greek internet" can be characterized as a complex space of antinomies and ambiguities. Despite the mass of potentialities offered by current digital technology, there is a high level of inequality of internet uses, as well as a considerable number of non-users who refrain from internet use, mainly because they are not interested or convinced about the internet's usefulness; or are afraid of (or confused by) technology; or lack technical skills, rather than internet access per se. Digital divides and inequalities of any kind inevitably lead to new forms of social exclusion, marginalization, discrimination and poverty, thus further undermining (digital) citizenship, democratic participation and trust[48].

[48] For a relevant discussion on trust in contemporary digital economies, see the most recent edition of the Digital Evolution Index (DEI 17), https://sites.tufts.edu/digitalplanet/2017-digital-evolution-index. Regarding the current digital divides and inequalities debate, see Roth and Luczak-Roesch (2020).

Moreover, even though internet users generally appear to possess a relatively higher social capital stock in comparison to non-users, the particular dimension of bonding social capital (i.e. maintaining and developing connections with strong ties, family members or close friends), within the digital world, is much stronger than the dimensions of bridging and linking social capital, associated to openness and social responsibility, civic engagement and deliberation, public spiritedness and civil society processes. Notably, Greece's bridging and linking social capital has always been very low, as a result of "the low levels of trust, of a proliferation of free-riding, of the low levels of cooperation and reciprocity, of high levels of corruption and high levels of tolerance toward that corruption. […] An institutionally immature society that combines institutional sclerosis and institutional atrophy" (Hatzis, 2018: 843). Perhaps this gives us one more reason to dig further into the (digital) realm of the Greek "entrenched self" (Ramfos, 2011).

Another antinomy has to do with the so-called disinformation processes (or information disorders). Although Greek users perceive themselves as rather capable to distinguish fake news on the Web and exhibit a strong preference towards online news consumption, they concurrently appear as highly skeptical towards the reliability of online information. In addition, most respondents (users) stated that they have *nothing to hide*[49] but, at the same time, the majority is actively protecting their privacy online, expressing strong concerns about privacy violations by corporations and the government, as well as by other people. The latter paradoxically coexists with a reported impression that online privacy can be managed or controlled by the users themselves[50], thus calling us to investigate the particularities of the Greek "culture of surveillance" (Demertzis, Mandenaki & Tsekeris, 2020).

Furthermore, although most respondents believe that the internet helps to better understand politics and to have their voices heard (or represented), the majority of them do not expect that online participation will actually increase their ability to influence government decisions, or that public officials will be more interested in their opinions. It seems, therefore, that internet use somehow enhances internal political efficacy, albeit leaving people's external political efficacy almost unaffected. In this regard, Jodi Dean (2005) has anticipated the devaluation of the *content* of political discourse and elaborated on the *Fantasy of Participation*, that is, the secret belief that our "likes", status updates, opinions or contributions online have

[49] At any rate, in the datafied information society, stating that "I have nothing to hide" can be interpreted as submission to the widespread culture of surveillance, or as a means of naturalizing and domesticating surveillance. In addition, it is argued that even if we try to protect our privacy, we become bearers of this culture (Lyon, 2018). As Paul Bernal puts it, one of the best known of the privacy myths is the "nothing to hide" delusion: "It comes in a number of variants but most boil down to either 'if you've got nothing to hide, you've got nothing to fear' or 'if you've done nothing wrong, why do you want to hide?'" (Bernal, 2018: 143). See also Solove (2011).

[50] Cf. https://www.pewresearch.org/internet/2019/11/15/americans-concerned-feel-lack-of-control-over-personal-data-collected-by-both-companies-and-the-government/

an intrinsic value which is more than simply contributing to circulation (or to communicative capitalism in general).

A similar paradox is manifested in self-reported political expression online. Most users/non-users recognize people's right to criticize the government and also report that they feel comfortable in expressing their political opinions, contending that people should be free to express even extreme opinions online. However, the majority of all respondents believe that it is not safe to express their political opinions online. Over against the all-pervasive and persistent imaginary of unity (wholeness), free expression and online democratization, the digital social order is now full of fear and online communities appear "fragmented, composed of ideological tribes, and exacerbated further by algorithmic sorting that empowers filter bubbles that deliver content that conforms to the respective worldview of each user on social media" (Faucher, 2018: 46; Sunstein, 2017; Zeri, Tsekeris & Tsekeris, 2019)[51].

By and large, Greece appears as a digitally immature, unready and vulnerable society, with strong internal antinomies, which are in tandem with internet's "radical ambivalence" in general (Demertzis & Tsekeris, 2018). Nevertheless, the multilayered, nonlinear and complex dynamics of the Web 2.0 or Social Web (Tsekeris & Katerelos, 2014) in the country is far from exhausted. Arguably, institutional betterment, policy-relevant reforms and a systematic increase in digital human capital (e.g. digital education, skills and competencies) would significantly contribute to value modernization and the effective exploitation of this evolving dynamics in the networked spheres of society, culture, economy and politics.

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[51] In such context, social media must be perceived as "accelerated, high-speed media. Nobody can read all tweets posted about an important topic. Tweets and online information flow at such a speed that there is no time for real debate and controversy. Postings tend to be short, entertaining, and superficial. Online brevity provokes superficiality and the negation of the world's complexity. Online communication tends to take place in fragmented and isolated publics, filter bubbles, and echo chambers that lack constructive controversy" (Fuchs, 2018: 87).

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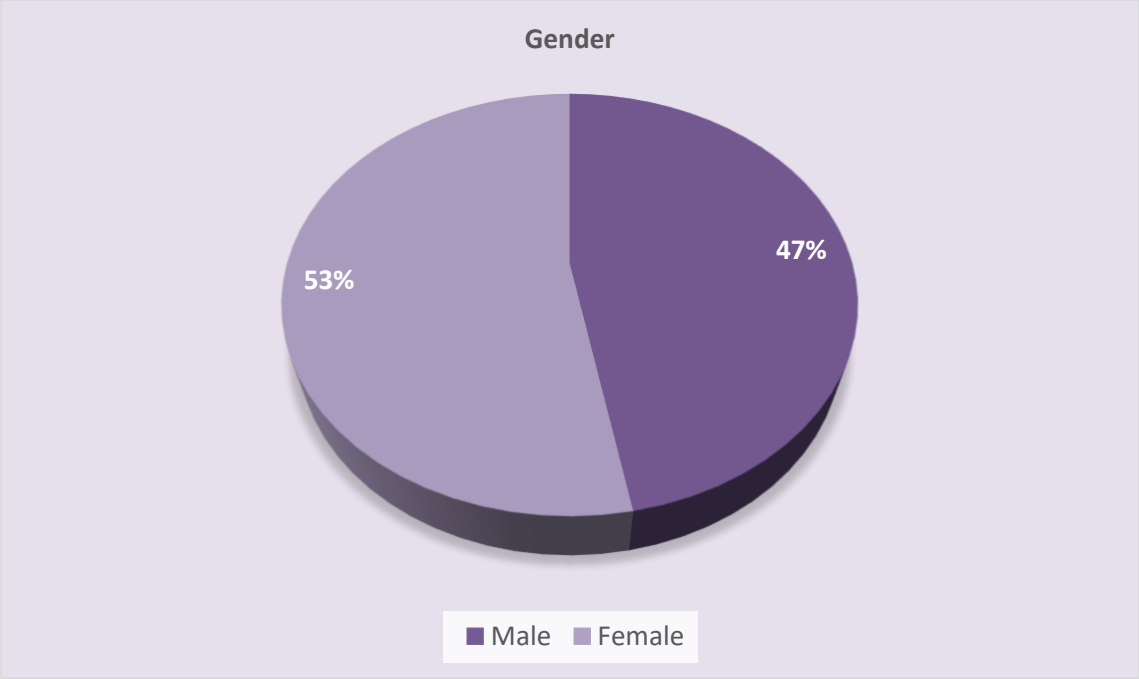
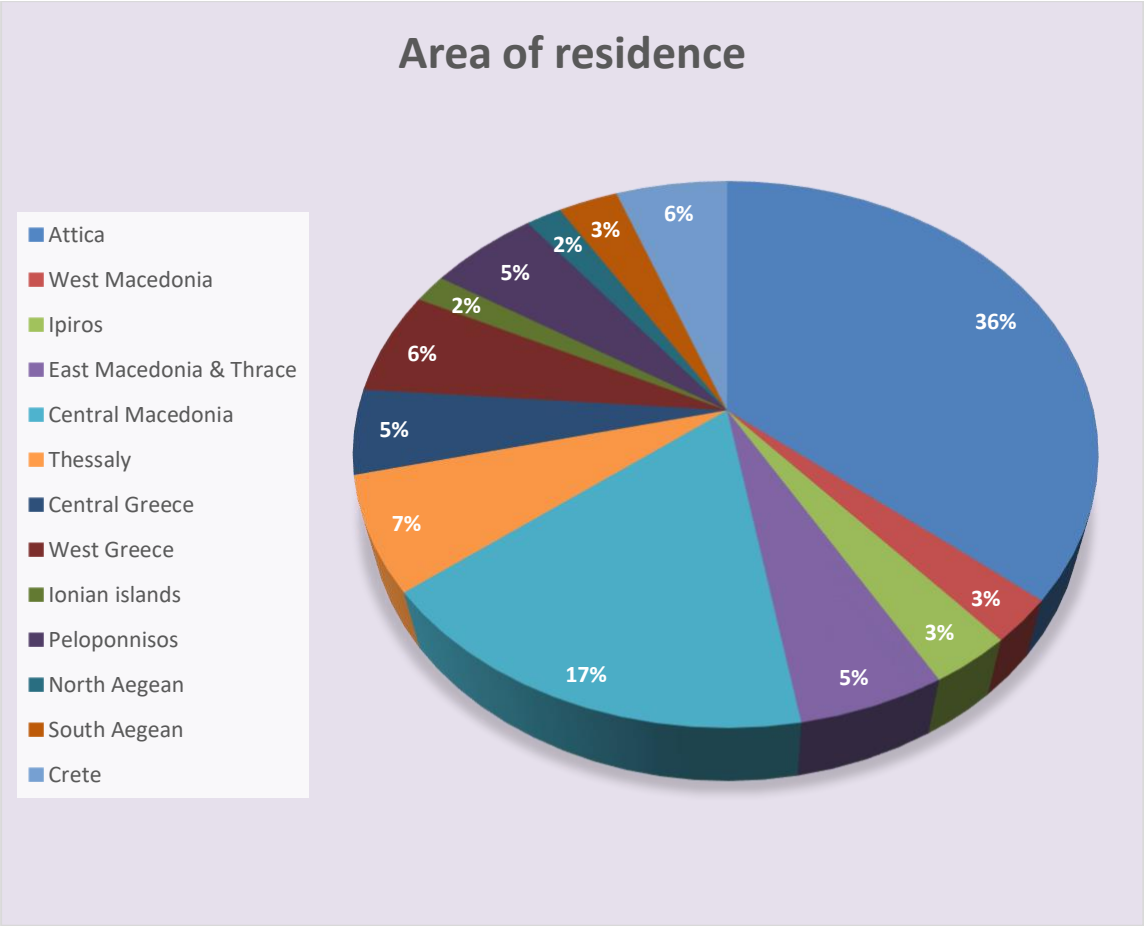
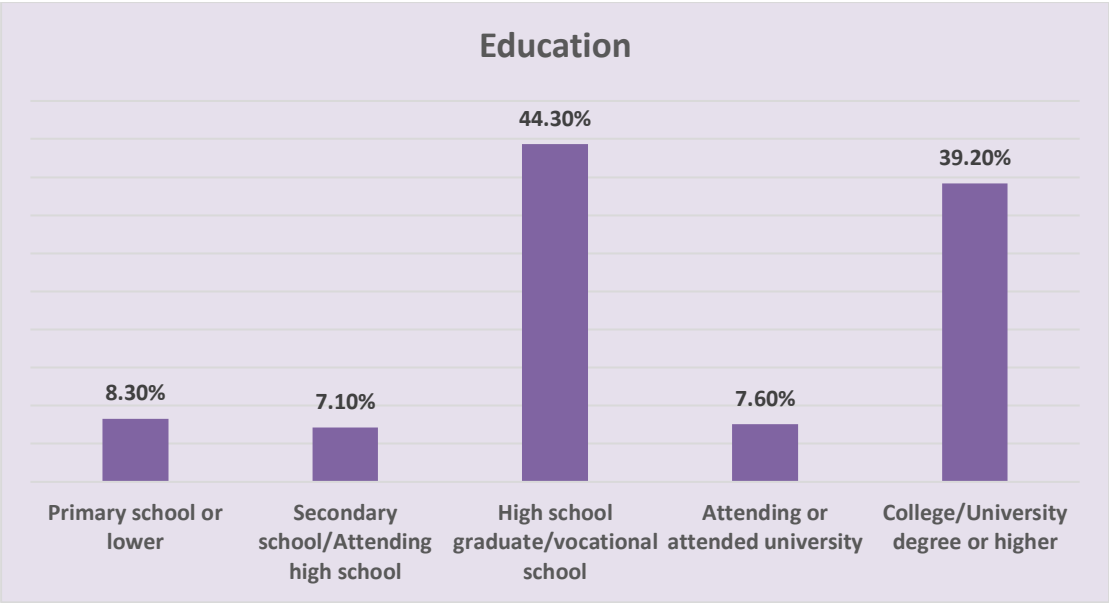
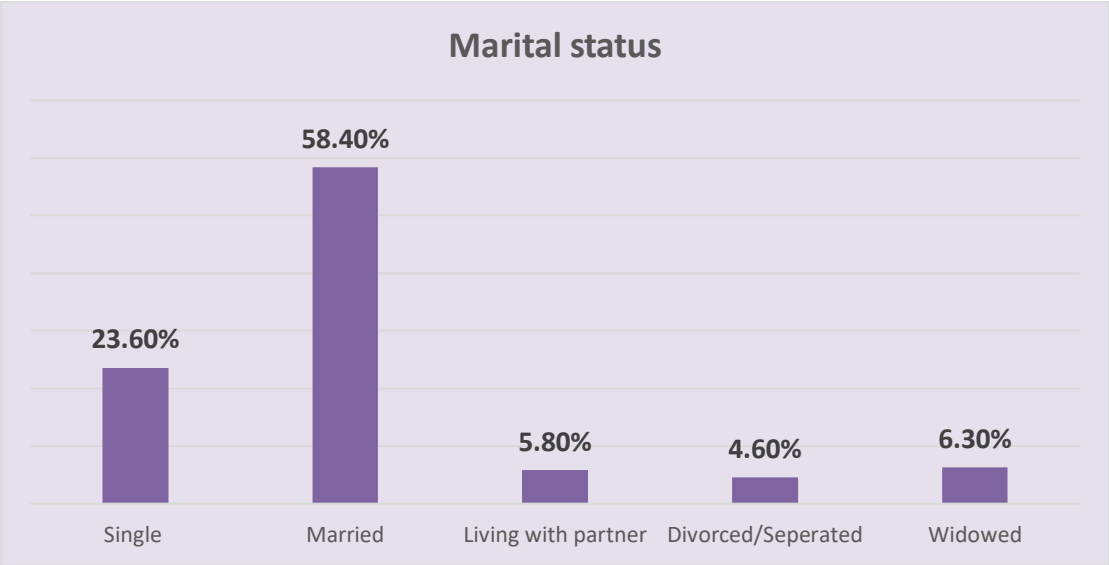
APPENDIX

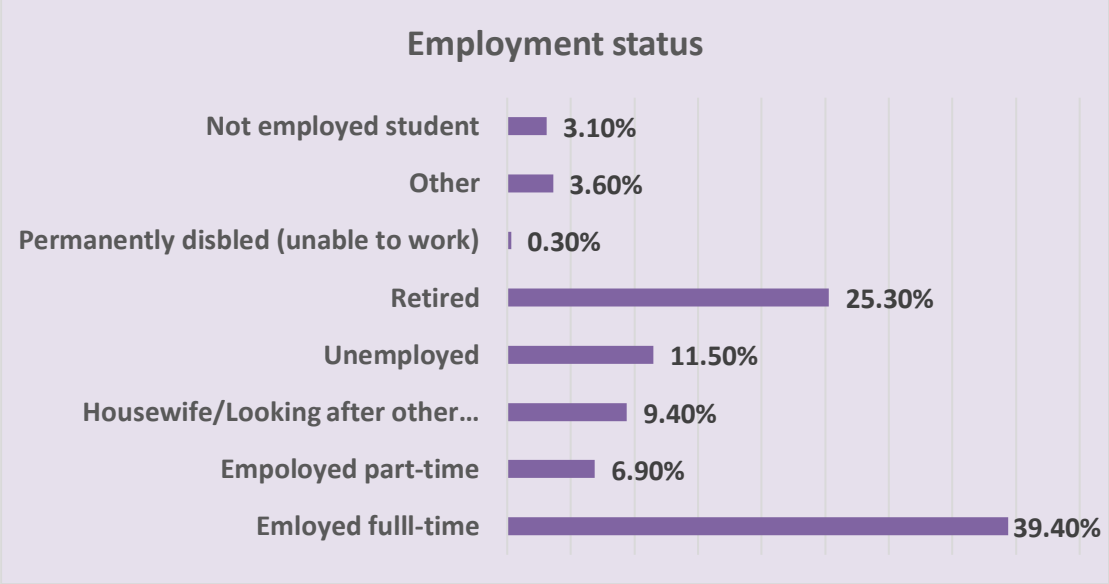
Figure 1. Demographic composition of the sample

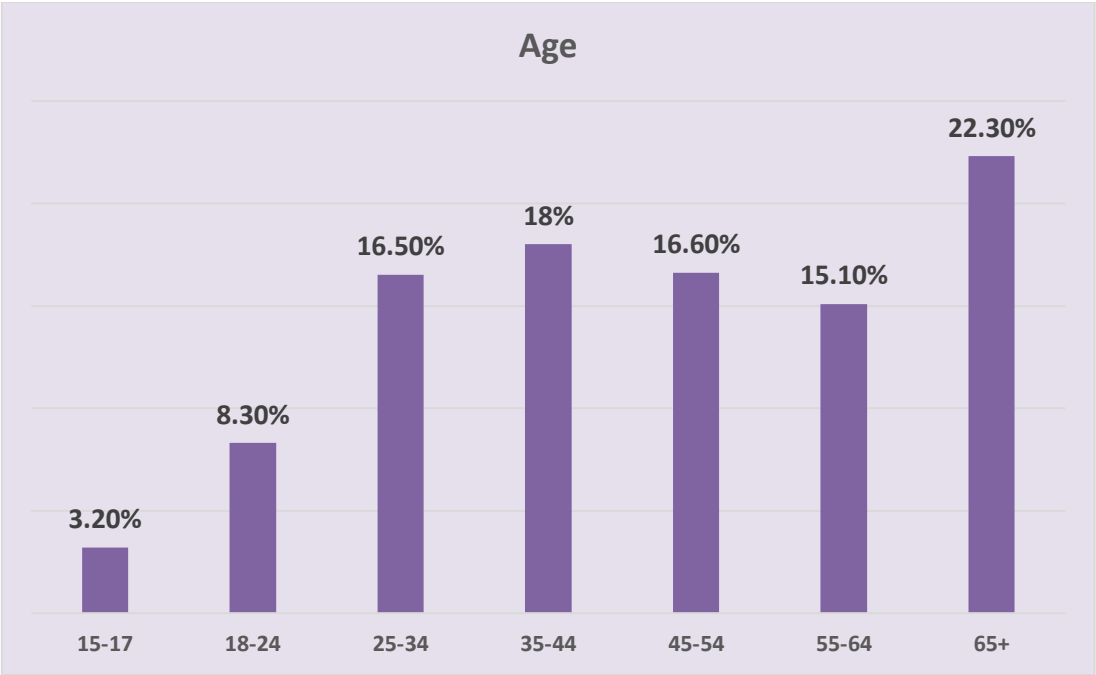





Education
8.30%
7.10%
44.30%
7.60%
39.20%
Primary school or lower
Secondary school/Attending high school
High school graduate/vocational school
Attending or attended university
College/University degree or higher


Marital status
23.60%
58.40%
5.80%
4.60%
6.30%
Single
Married
Living with partner
Divorced/Seperated
Widowed


Employment status
Not employed student 3.10%
Other 3.60%
Permanently disbled (unable to work) 0.30%
Retired 25.30%
Unemployed 11.50%
Housewife/Looking after other... 9.40%
Empoloyed part-time 6.90%
Emloyed fulll-time 39.40%


Age
3.20%
8.30%
16.50%
18%
16.60%
15.10%
22.30%
15-17
18-24
25-34
35-44
45-54
55-64
65+

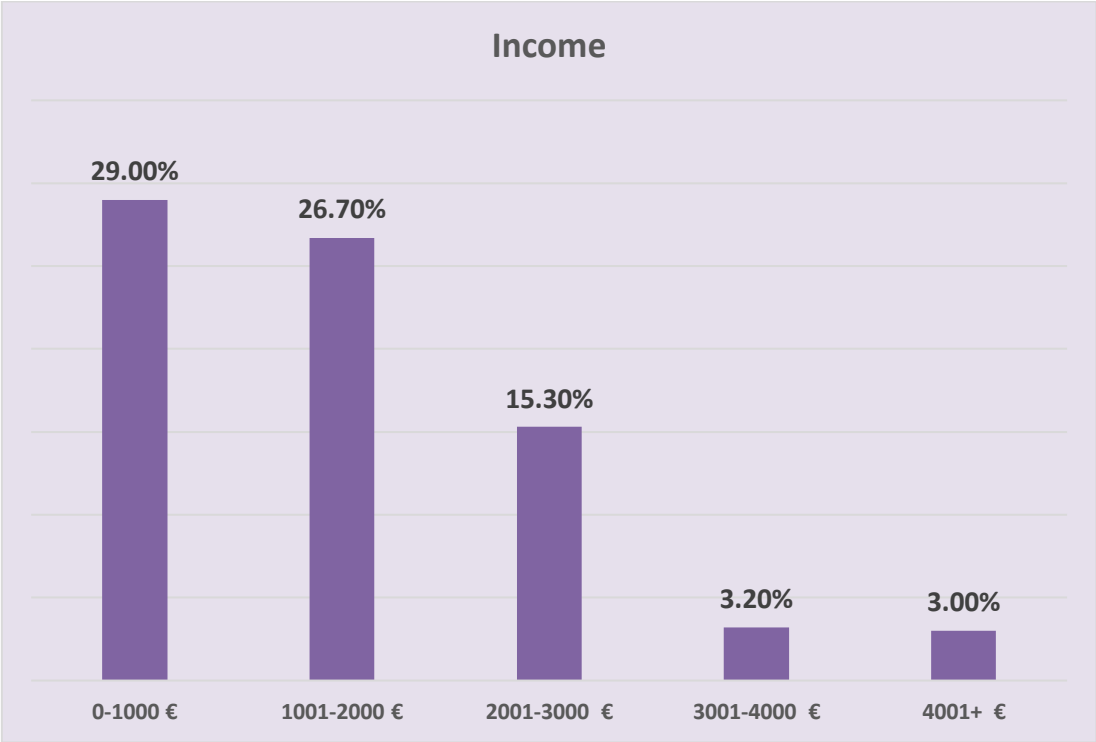

Income
29.00%
26.70%
15.30%
3.20%
3.00%
0-1000 €
1001-2000 €
2001-3000 €
3001-4000 €
4001+ €

Figure 2. Internet Use History and Employment

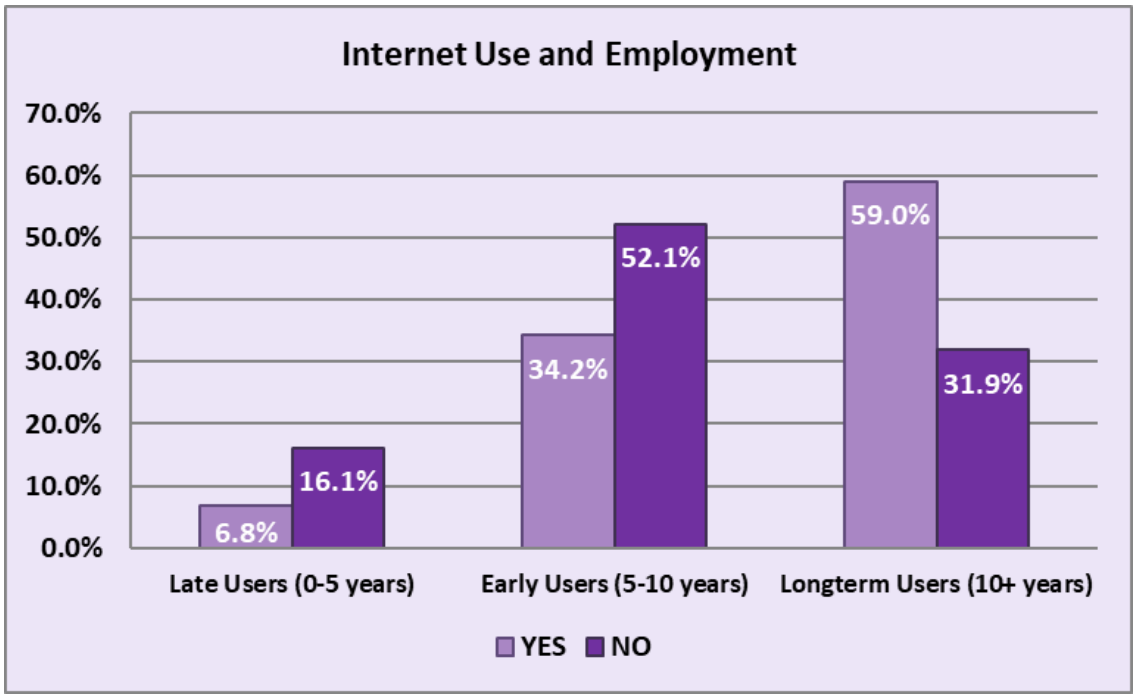


Figure 3. Internet Use History and Employment Status

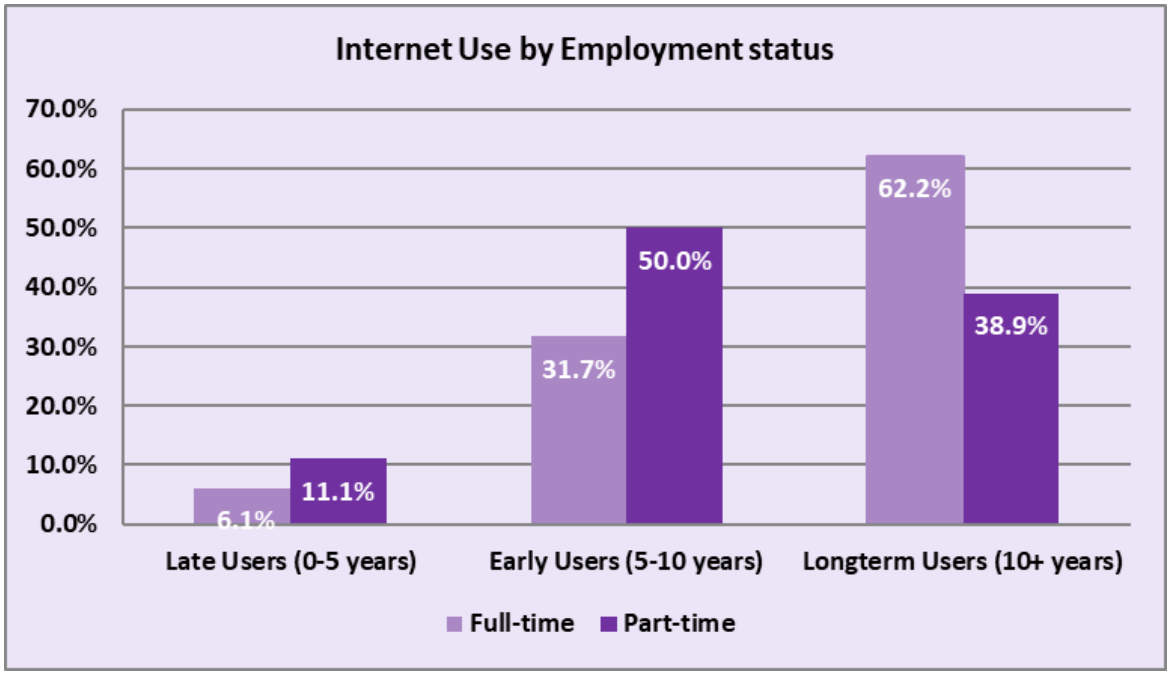


Figure 4. Internet Use History by Income

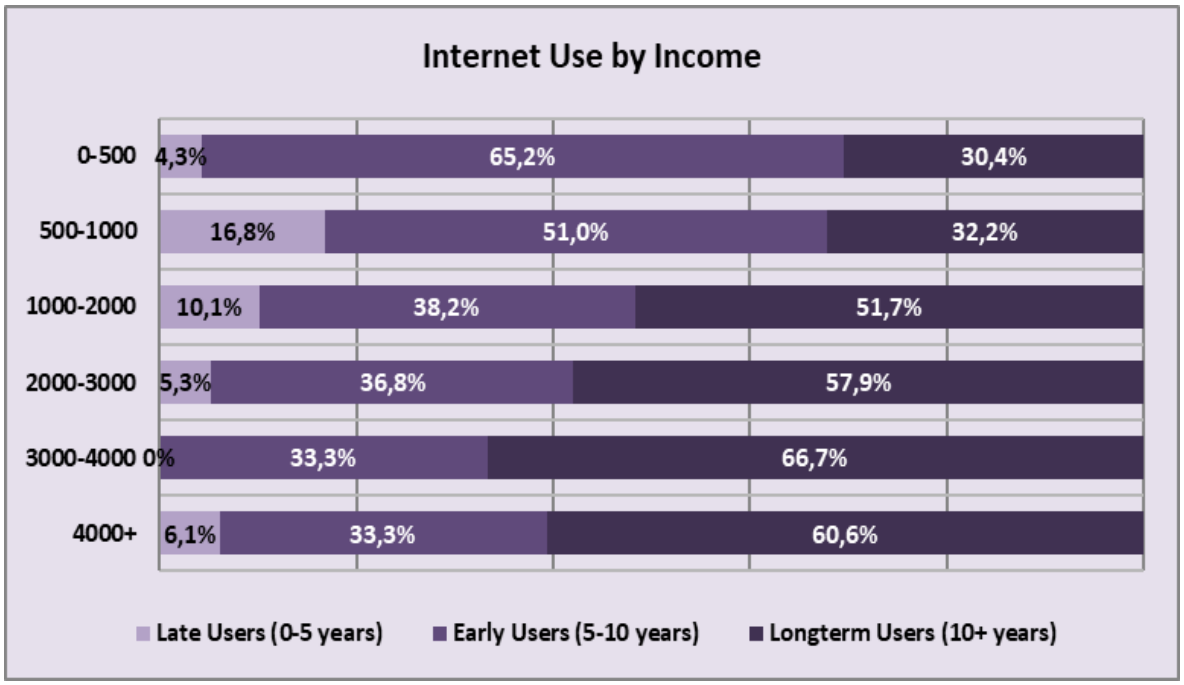


Figure 5. Internet Use History by Education

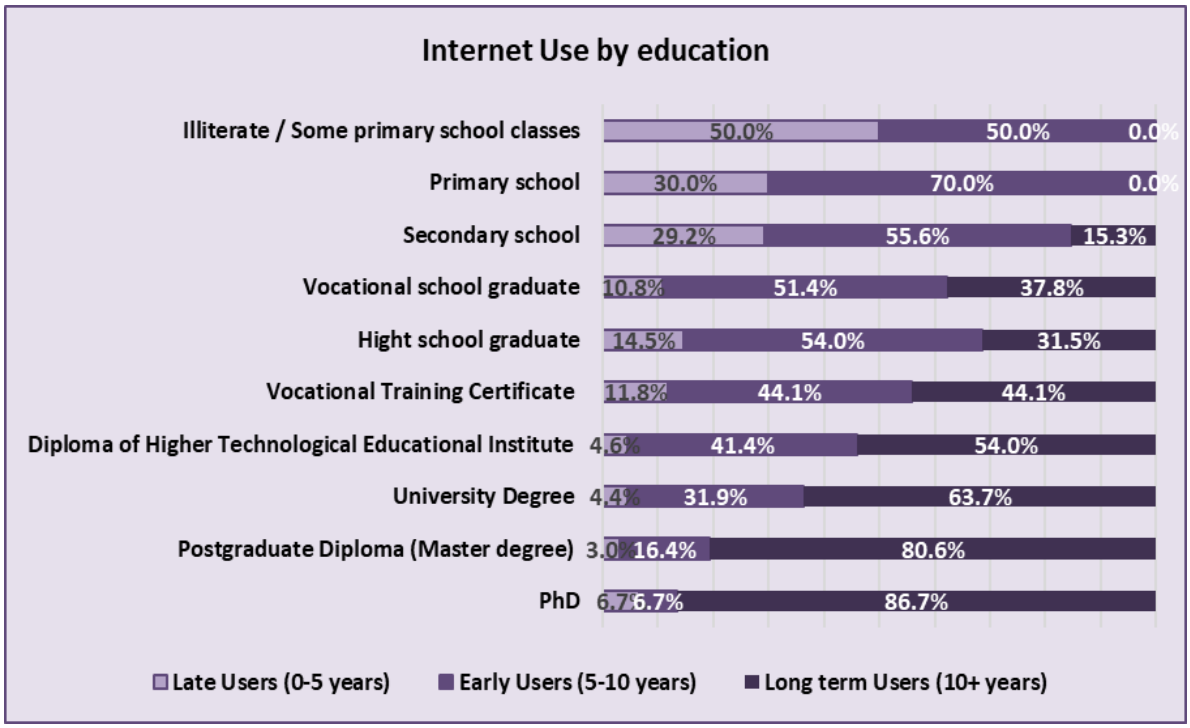


Figure 6. How often do you use the internet for each of these entertainment activities?

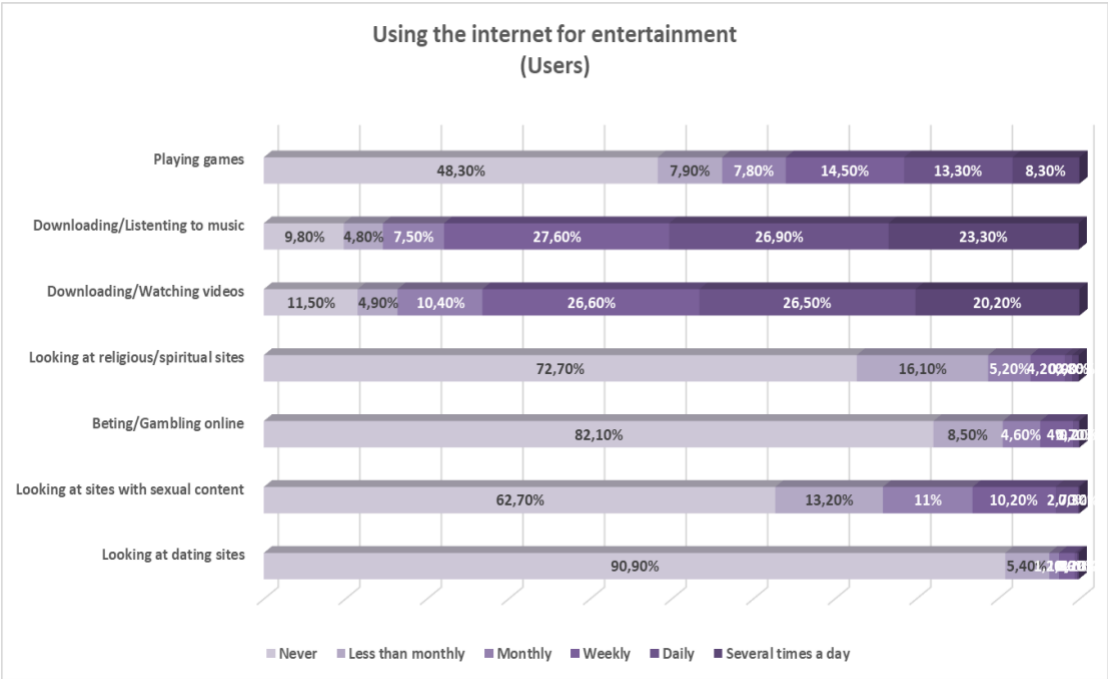
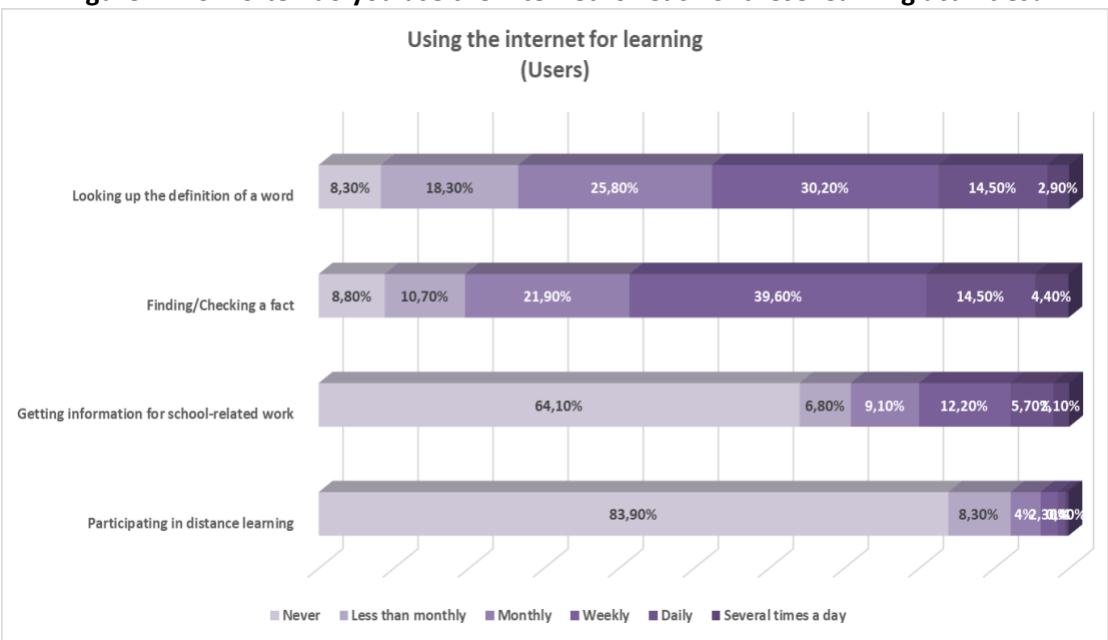


Figure 7. How often do you use the internet for each of these learning activities?



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