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2023

The Internet in Greece

World Internet Project
Final Report





NATIONAL CENTRE FOR SOCIAL RESEARCH
2023

The Internet in Greece

FINAL REPORT

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HELLENIC REPUBLIC
Presidency of the Government
Special Secretariat of Foresight

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EXECUTIVE SUMMARY

The National Centre for Social Research (EKKE) places rapid socio-technological developments at the epicenter of scientific analysis, with the aim of boosting evidence-based digital policy-making and responding to the need for reliable, comparative and forward-looking knowledge about internet use in Greece. Therefore, since 2015, it has taken the initiative to conduct large-scale research with the main field of study recording the penetration and multiple effects of the internet and its infrastructure in Greek society. Specifically, the World Internet Project Greece (WIP-GR) empirical sample survey is implemented by EKKE and is part of the World Internet Project (WIP), an international partnership of universities and research centers consisting of more than 30 countries on different continents. It is an international research project that started in 1999 and is led by the Annenberg School Center for the Digital Future of the University of Southern California (USA), under Professor Jeff Cole. This report presents the contents of the most recent wave of the World Internet Project Greece (Autumn-Winter 2022), concerning the highlighting of critical issues of the "Greek internet", such as the digital divide, the uses and informational/entertainment value of the internet, the social media and AI algorithms, the future of privacy and the future of work, as well as the degree of trustworthiness, freedom of expression, political sufficiency, victimization and breach of privacy. The report aspires to a scientifically verifiable, multidimensional and forward-looking view of aspects of our country's complex digital transformation process, resulting in concrete proactive digital policy recommendations.

INTRODUCTION

About Greece and the Greek ICT infrastructure

It is now a given that we are living on the edge of the 4th industrial revolution (Industry 4.0) and in the new digital phase of globalization (Globalization 4.0). In this context, digital technologies, as a current mega-trend, evolve and diffuse faster, radically disrupting politics, the economy, the labor market, the society itself and the place of the citizen in it.¹ The global phenomenon of the Covid-19 pandemic, which has repeatedly been characterized as a "digital pandemic",² has given a huge boost to the internet, the digital "Network of Networks" or the "System of Systems", and therefore to the relationship between knowledge production and public forms of its organization.

Regarding the development of the internet, Greece could not be an exception. In our country, the pandemic has in fact acted as an accelerator and multiplier of the digitization of public services, whereas through the Digital Public Portal (www.gov.gr) a solid foundation was laid for the overall digital transformation of the public administration, which still has a long way to go (as does the digital transformation of the production and commercial web).³ However, it should not be taken for granted that this transformation is always beneficial, to the extent that the current changes do not get translated into adaptiveness. Nor does it automatically imply structural or attitudinal modernization. After all, modern elements, such as technology, occasionally feed and strengthen traditional or obsolete structures, in the context of a dynamic political-cultural process of "inverted syncretism", where the co-articulation of tradition and modernization favors the former over the latter during a country's dependent path towards its own modernity.

These cultural processes shape the particular character of the internet of each society. In this regard, the Greek internet is one of many internets, which, on a planetary level, are constantly evolving and mutating together with dynamical socio-political processes and through conflicts, contradictions, claims, interests and desires. More specifically, in 2019, EKKE's research on the Greek internet demonstrated idiosyncratic risks, weaknesses and vulnerabilities, a digital society that indeed appeared unprepared but, at the same time, did gain degrees of resilience after facing the pandemic.

Particularly in the last three years, at the European level, the pursuit of resilience has been closely linked to the development of strategic foresight,⁴ – i.e., a systematic, participatory, and interdisciplinary approach to the exploration of the medium-term and long-term future. In the context of this approach, which acquires particular practical value in the midst of global interdependent risks⁵ and an emerging "polycrisis",⁶ what is actually important is the *dynamics* of a phenomenon such as the internet, namely its evolution in time and space (global networks). In other

¹ <https://foresight.gov.gr/studies/Megatrends-2040-metavlitotita-avevaiotita-epinoitikotita/>

² <https://ejournals.publishing.ekt.gr/index.php/homvir/article/view/25445>

³ According to the annual report of the National Productivity Council for the year 2022, Greece continued to improve in terms of digitization. But it needs to increase the number of companies providing ICT training, the fixed coverage on very high-capacity networks (VHCN), the fiber coverage to several premises, the number of SMEs with at least a basic level of digital intensity, the number of companies using cloud technologies, digital public services for businesses and citizens, and the number of pre-filled forms. cf. <https://www.kepe.gr/index.php/en/research/recent-publications/national-productivity-board/item/3212-national-productivity-board-annual-report-2022.html>

⁴ https://commission.europa.eu/strategy-and-policy/strategic-planning/strategic-foresight_en

⁵ <https://www.weforum.org/reports/global-risks-report-2023/>

⁶ Davies, M., & Hobson, C. (2022). An embarrassment of changes: International Relations and the COVID-19 pandemic. *Australian Journal of International Affairs*, 1-19. <https://doi.org/10.1080/10357718.2022.2095614>

words, the development and use of digital technologies take place in a historical continuum and in a networked environment of constant interconnection and interaction. Therefore, we must see the technological progress of Greece not in an isolated and fragmented manner but always in comparison to that of other countries.

In this light, the National Centre for Social Research (EKKE) constantly monitors international socio-technological developments, with the purpose of providing impetus to evidence-based digital policy-making and responding to the need for reliable, comparative, and future oriented knowledge regarding the use of the internet in Greece. Therefore, since 2015, it has taken the initiative to conduct large-scale research, aiming to investigate the penetration of the internet and the effects of its infrastructures in Greek society. Specifically, the World Internet Project Greece (WIP-GR) empirical sample survey is implemented by EKKE and is part of the World Internet Project (WIP), an international consortium of universities and research centers consisting of more than 30 countries from different continents.⁷ It is an international research project that started in 1999 led by the Annenberg School Center for the Digital Future of the University of Southern California (USA), under Professor Jeff Cole. The main objective of WIP-GR is to highlight critical issues related to the various uses of the internet in Greece, the digital divide, the informational and entertainment value of the internet, as well as the systematic examination of parameters such as the degree of reliability, political efficacy, victimization and violation of privacy, the degree of freedom of expression, etc.

This study concerns the fourth wave of the WIP-GR research⁸, which also has additional questions about the future of privacy and work, social media and Artificial Intelligence algorithms. It is based on field research conducted in the Autumn-Winter of 2022, with the financial support of the Presidency of the Government-Special Secretariat of Foresight⁹ and aspires to a scientifically verifiable, multidimensional and future-oriented consideration of the aspects of the complex process of digital transformation and modernization of our country, resulting in concrete proactive digital policy recommendations.

The fourth wave of WIP in Greece

This report presents the findings of the fourth wave of the WIP-GR survey and investigates the evolution of internet penetration among the Greek population by providing comparative data on various aspects of the respondents' behavior and perception regarding the internet between the four phases of the survey (2015, 2017, 2019, 2022). It includes descriptive presentations of the results of the analyzes as well as diagrams that mainly include relative frequencies and, in some cases, variable means, so that the reader has a clear and accurate picture of the percentages.

Methodology

The results of the fourth wave WIP-GR survey were obtained through 1,200 interviews, with people who could express themselves in Greek, following a mixed model: quantitative Research with Telephone (CATI) & Online (CAWI) Completion of structured questionnaires. The research methodology was designed by the National Center for Social Research (EKKE).

Geographical coverage

The research covered all thirteen districts of the Hellenic Republic.

⁷ <http://www.digitalcenter.org/world-internet-project/>

⁸ For the data of previous WIP-GR waves c.f. <https://datacatalogue.sodanet.gr/dataverse/wip>

⁹ <https://foresight.gov.gr/>

Statistical units

Households with at least one member aged 15+ years old - Individuals aged 15+ years old.

Data Collection Period

25 November – 13 December 2022.

Sampling Method

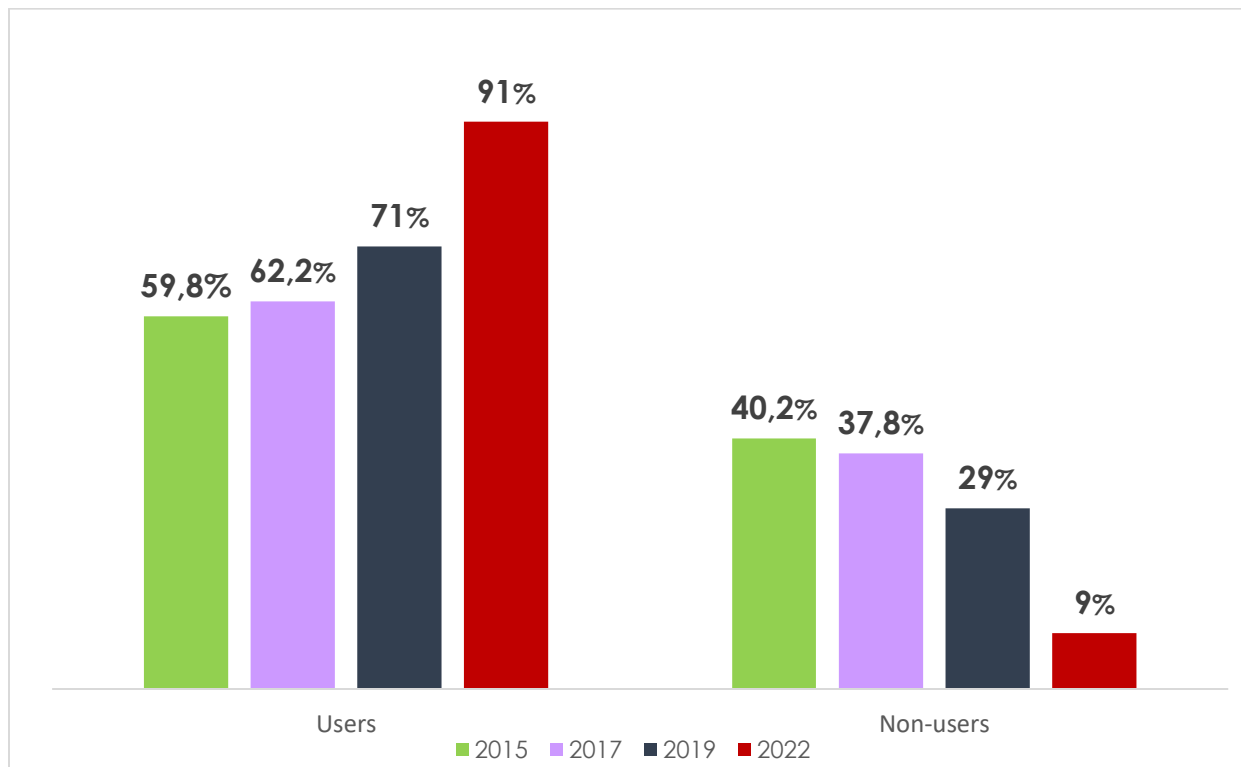
Stratified sampling based on gender, age and region of residence, use of soft quotas on educational level. Weighted results based on the joint distribution of sex, age and region of residence.

INTERNET ACCESS AND USE

Internet use

The use of the internet in Greece, as shown by all four waves of the WIP- Greece (Figure 5), is steadily increasing, as 91% of the population of the last survey identify themselves as users, thus registering an increase of around 20% since the last measurement in 2019 (71%). This should not be surprising, as in the Spring of 2022, in an international comparative survey by the Pew Research Center,¹⁰ the percentage of adults in Greece who had access (in the sense of using the internet or owning a smartphone) was 94%.

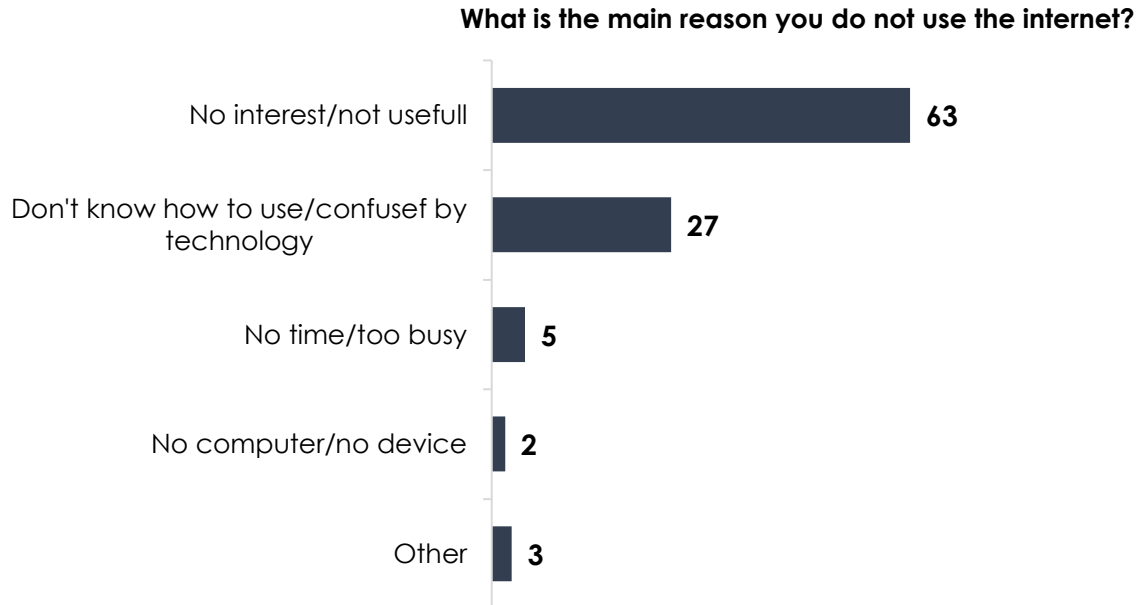
Figure 1: Internet use



For 9% of non-users, two are the main reasons for not using the internet: the declared lack of interest and usefulness of the internet (63%), and the lack of knowledge and familiarity with technical knowledge or fear/confusion with technology (27%).

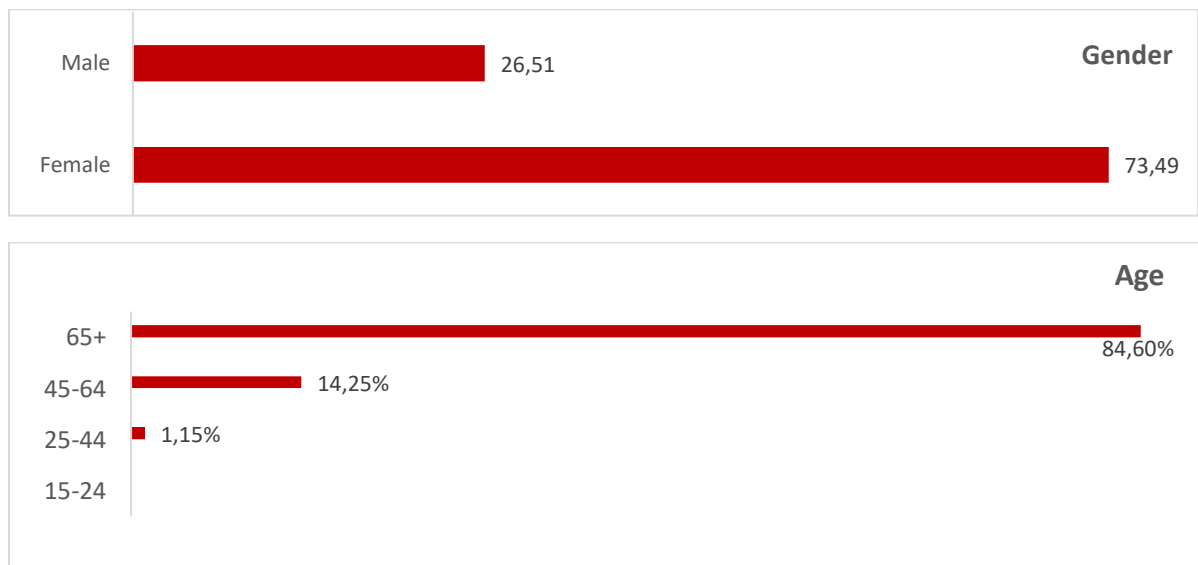
¹⁰ <https://www.pewresearch.org/global/2022/12/06/social-media-seen-as-mostly-good-for-democracy-across-many-nations-but-u-s-is-a-major-outlier/>

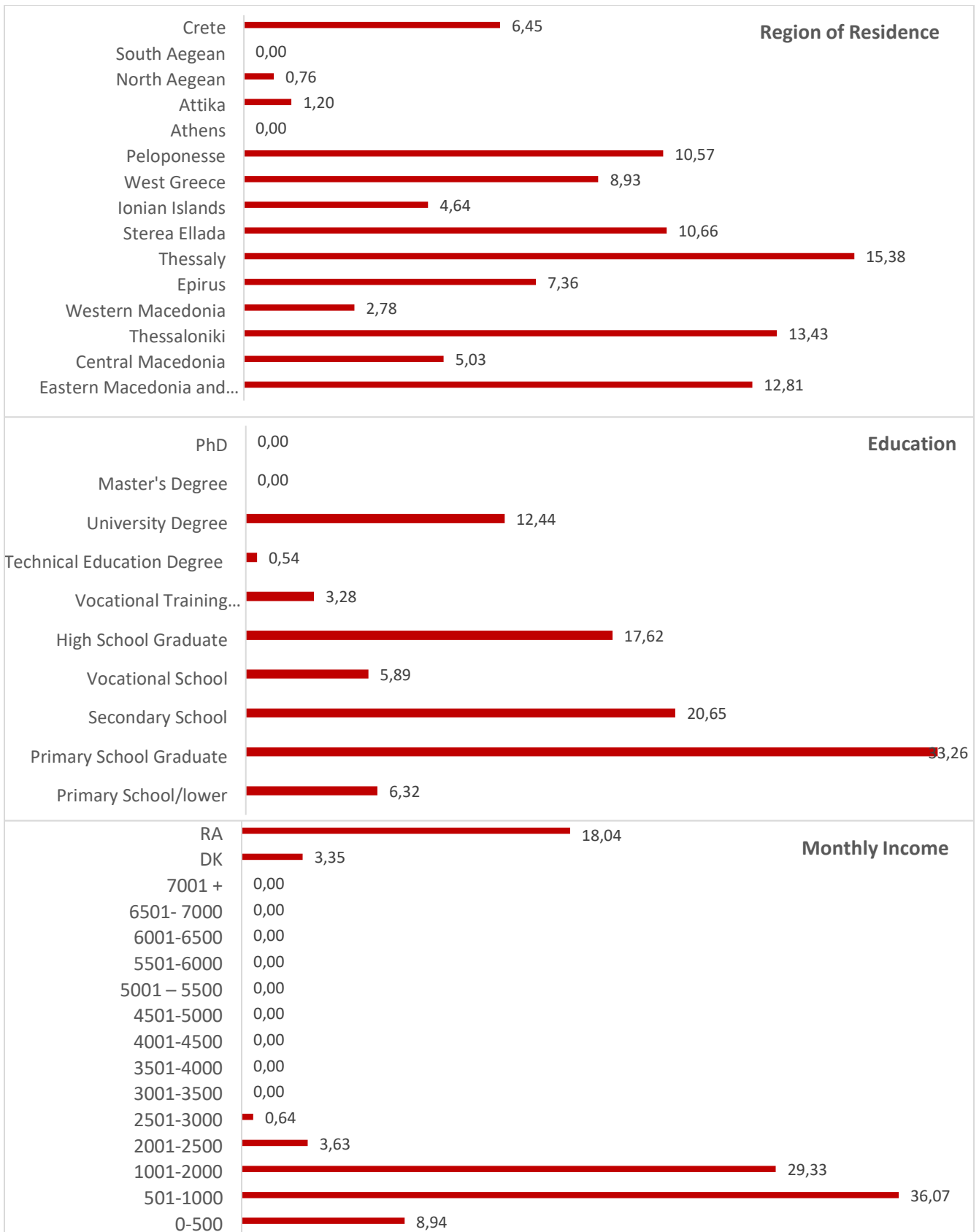
figure 2: Reasons for non-use



The identity of non-users is illustrated in Figure 7, where a large difference of 46.98% (women 73.49%, men 26.51%) is being observed between non-users in terms of gender. Regarding the age of non-users, the highest percentage (84.6%) belongs to the group of 65+ years, while no non-users are recorded in the young age group of 15-24 years. About a third of non-users (35.8%) belong to the lowest income category (income up to €1,000 per month), while 29.2% of non-users belong to the highest income category (income up to €2,000 per month). Also, the majority of non-users are Primary School graduates (33.26%), whereas 12.44% with a university degree state that they do not use the internet. The majority of non-internet users are residents of Thessaly (15.38%), Thessaloniki (13.43%) and Eastern Macedonia and Thrace (12.81%).

Figure 3: Demographics of non-users





Almost 9 out of 10 non-users not only do not intend to use the internet in the current year, they also state they won't in the next year either. There is also another, smaller, group of non-users, the so-called "internet users of discontinued use" (Figure 8), who had used the internet in the past, with the main reasons for stopping being lack of interest (40%) and the consumption of time they considered that it is required (34%) (Figure 9).

Figure 8: Discontinued internet use

Have you used the internet in the past?
among those who do not use the internet

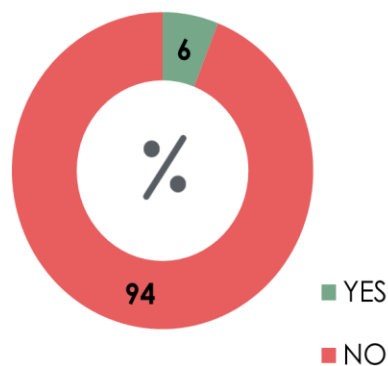
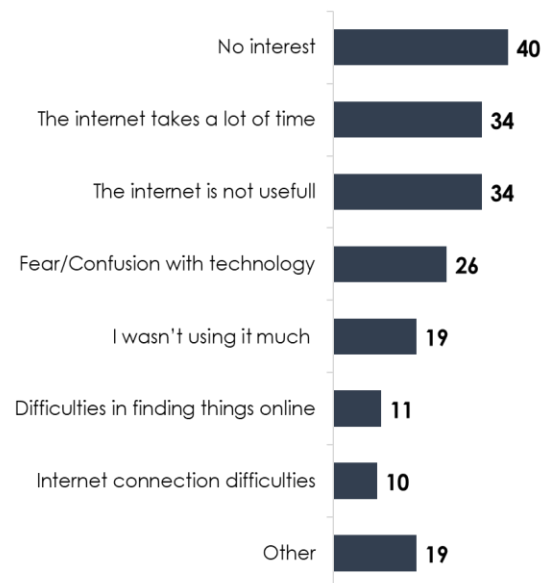


Figure 9: Reasons for discontinuing internet

Reasons for non use



It is clear that thousands of our fellow citizens are still suffering the adverse consequences of the primary digital divide, which are added to the burdens of previous inequalities. However, these are population categories that will probably be drastically reduced in a relatively short period of time due to the ever-increasing penetration of the internet. Therefore, the digital divide is essentially shaped and mutated from primary to secondary, therefore it will no longer regard the socio-demographic characteristics of citizens but rather digital skills or digital human capital in general and, by extension, "digital citizenship".¹¹

¹¹ C.f. <https://www.kathimerini.gr/opinion/1065842/oi-en-elladi-polloi-mi-christes-diadiktyoy/>

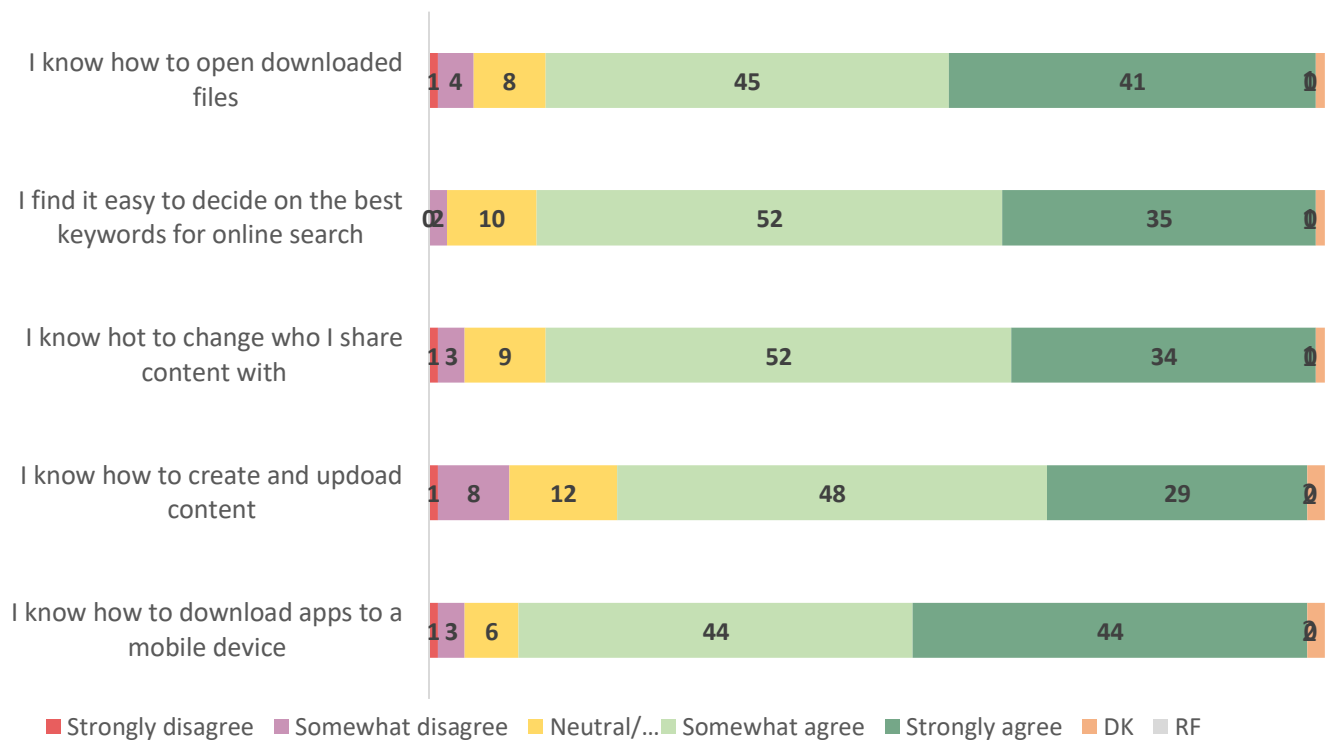
DIGITAL DIVIDE, SKILLS AND INTERNET USES

Internet use skills

Users' self-perception of their level of digital skills appears to have increased compared to the 2019 rates. As shown in Figure 10, 86% of the respondents stated that they know how to open files (compared to 82.3%) and 87% believe they know how to use correct keywords in search engines (84% in the 2019 survey). A significant increase is also noted in the knowledge of setting privacy parameters in terms of content sharing (86%), as well as the "downloading" of mobile applications to 88% (78.4% and 84% respectively in 2019), although the knowledge of creating content shows a small drop from 78.3% to 77%.

Figure 10: Internet use skills

How much do you agree with the following statements about internet skills



It appears that due to the recent health crisis the respondents' digital literacy, as well as their skills, accelerated also within the wider processes of digitization of employment. However, the auspicious picture is offset by the difficulties and inadequacies of the labor market in view of the digital transition. In the case of Greece, the weaknesses are mainly due to the growing severity of social inequalities in the field of the development of the digital skills of employees, but also to the wider systemic weaknesses of the country's productivity model. Therefore, despite the participants' relatively high rating of their online performance, other available data create contradictions.

According to the 2022 Eurostat report,¹² in Greece one in two workers (52%) possess “basic digital skills”, which indicates a tendency to recover lost ground, that is also confirmed by the parallel increase in participation of employees in continuing vocational training programs (12%, 4 points increase compared to the 2019 respective rate).¹³ However, this trend is not necessarily an indication of a more general mobilization in the field of digital transition. Despite the momentum taking shape, Greece remains low in the latest measurements of the European Digital Economy and Society Index (DESI), and only 12% of Greek businesses appear to be contributing to the development of employees’ digital skills. However, it is worth noting that, among professionals in Information and Communication Technologies (ICT), the share of women is increasing at a rapid pace (from 20% in 2019 to 27% in 2020), placing Greece above the European average (20%).

Online transactions

There is a big increase in the use of the internet for online transactions (Figure 11) as almost 75% of the respondents¹⁴ declare that they pay bills and use online banking services at least once a month (51% in 2019), while the percentage of those who say that have never used the internet for this purpose has decreased to 8.9%, compared to the corresponding 37.3% of the previous wave of the WIP-GR. Online shopping is also on the rise, with 52.1% of users saying they buy things online at least once a month or more.¹⁵

In terms of online sales, there is a relative decline of those who state they never sell anything online, from 86.4% in 2019 to 72.8% in 2022, but the percentage remains relatively high compared to other WIP countries.

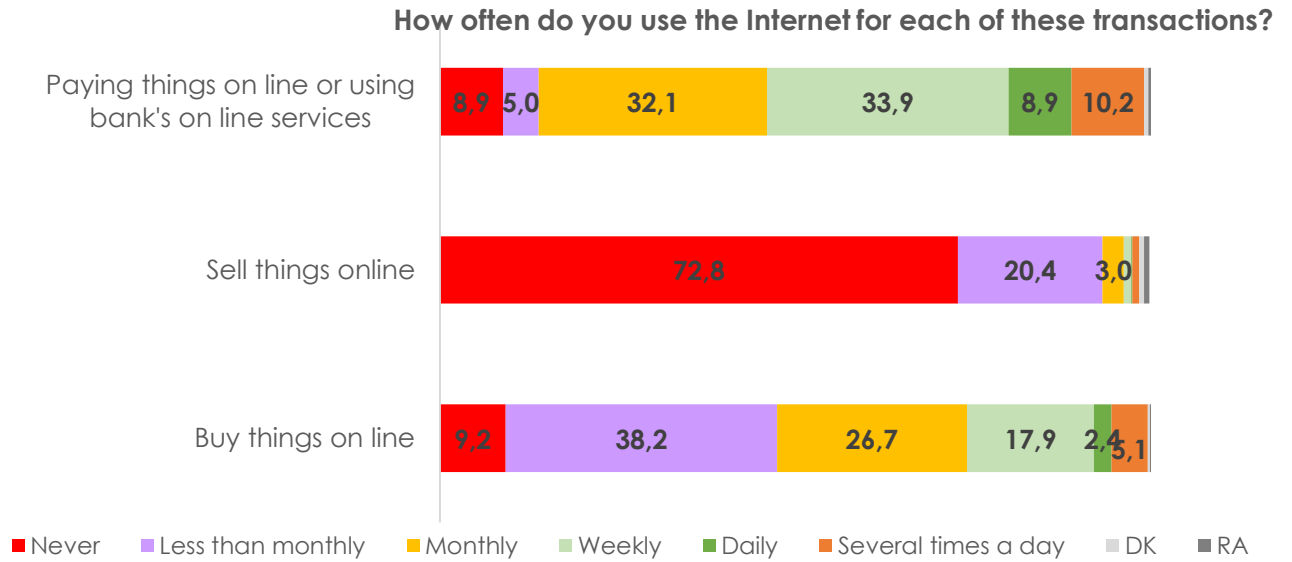
¹² <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20220330-1>

¹³ <https://republic.gr/futureofwork/el/psifiaki-metavasi-kai-apascholisi-stin-ellada-to-varos-tis-anisotitas-kai-i-paragogiki-ysterisi/>

¹⁴ Total percentage: “Monthly”, “Daily” “Weekly” and “Several times a day”.

¹⁵ Total percentage: “Monthly”, “Daily” “Weekly” and “Several times a day”.

Figure 11: Online transactions



Entertainment

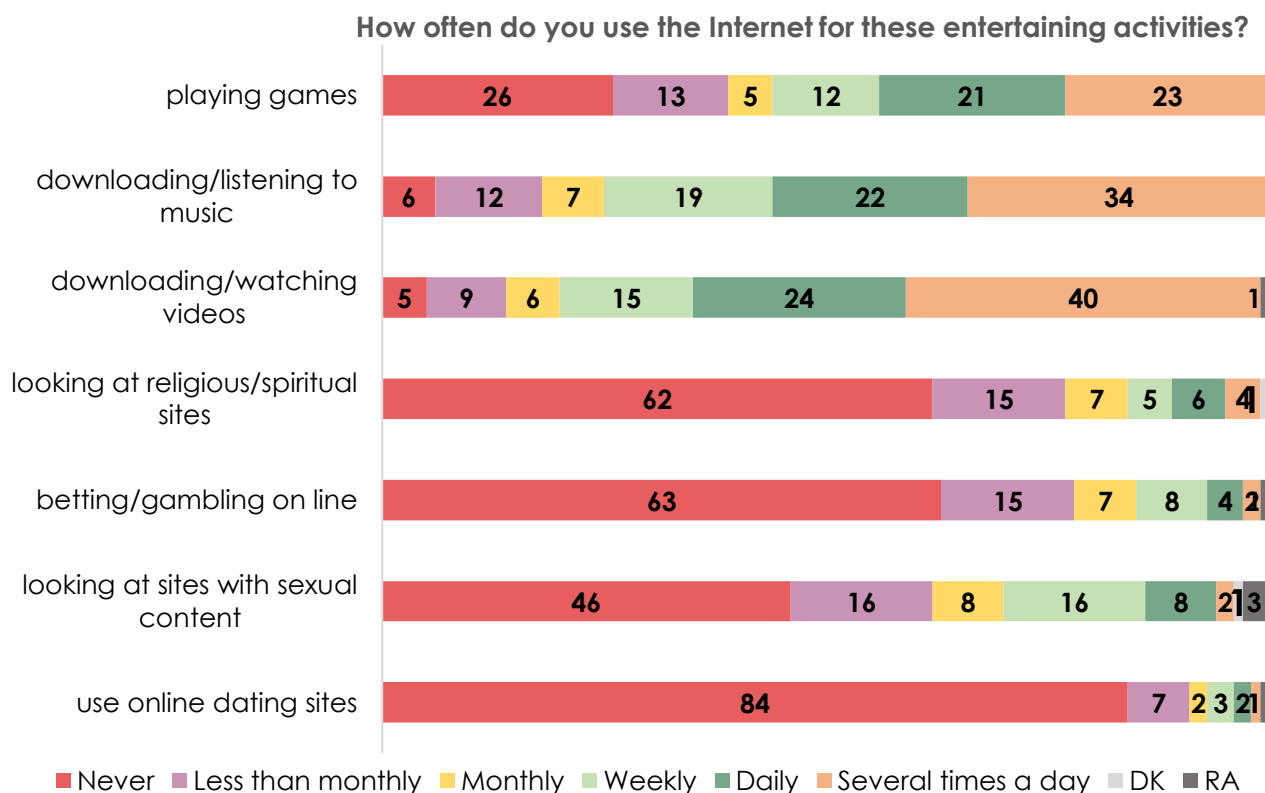
The internet is also an important field of entertainment for users in Greece with daily video watching occupying the first place of their preferences at 64%,¹⁶ followed by "downloading" or listening to music at 56%,¹⁷ and online gaming at 44%.¹⁸

¹⁶ Total percentage: "Daily" and "Several times a day".

¹⁷ Total percentage: "Daily" and "Several times a day".

¹⁸ Total percentage: "Daily" and "Several times a day".

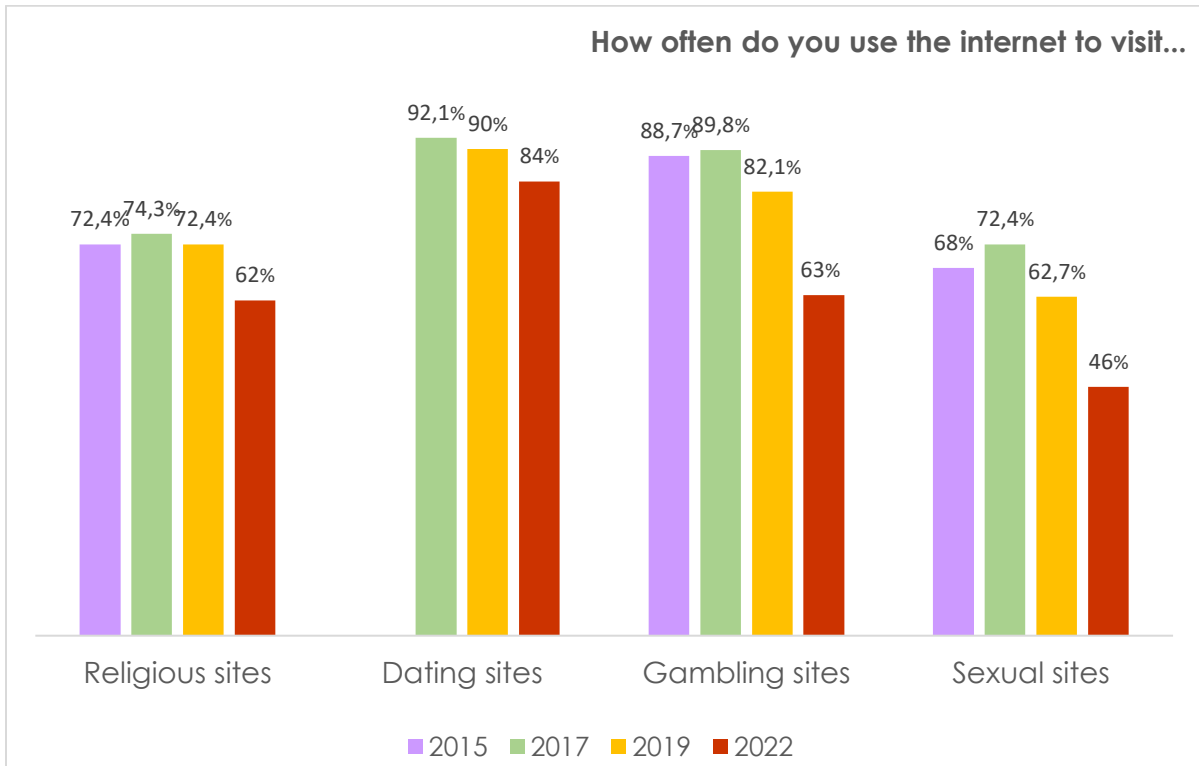
Figure 12: Entertainment



As can be seen in Figure 12, the majority of the participants declare that they "never" visit dating websites (84%), online gambling (63%), religious websites (62%) and sexual websites (46%). However, the same figure indicates that this "refusal" is showing a fairly significant drop compared to the previous waves of WIP-GR (Figure 13), especially regarding the traffic of websites with sexual content, a habit which anyway characterizes many thousands of users internationally. Also, the relative increase in electronic gambling between 2019 and 2022 can be attributed as an extenuating consequence of confinement due to a pandemic but it is also generally consistent with the spread of online gambling that has occurred in recent years. For example, while in 2015 the turnover of online gambling providers in Greece did not exceed 2 billion euros, in 2022 it reached 9.3 billion euros.¹⁹

¹⁹ https://www.businessdaily.gr/oikonomia/69845_nea-rekor-toy-tzogoy-stin-ellada-pontarismata-128-dis-sto-examino

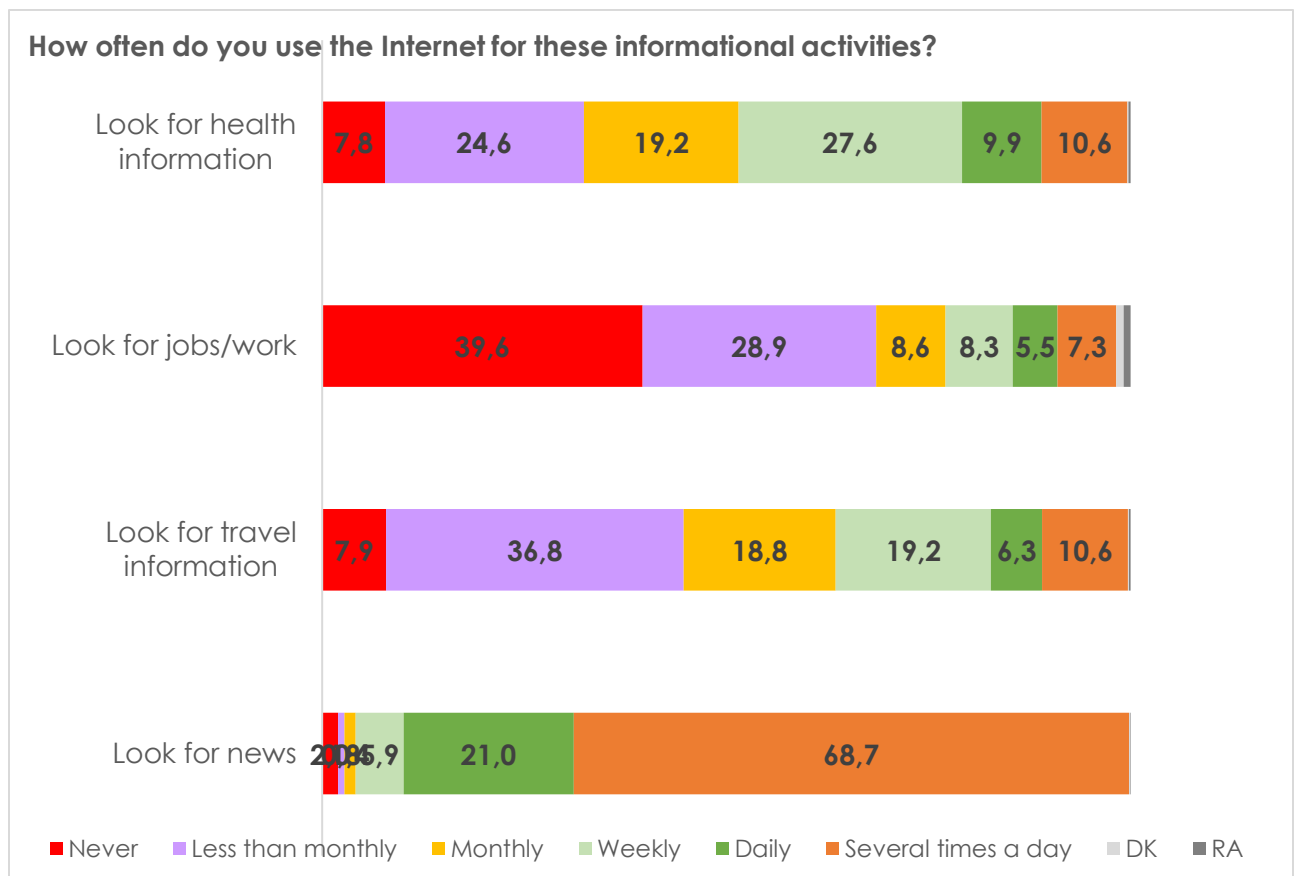
Figure 4: Frequency of Use for Entertainment - Answer “Never” (WIP Total Percentages 2015, 2017, 2019, 2022)



Information

The frequency of online information searching showed a relative increase compared to the WIP-GR 2019. Specifically, the percentage of users who search for jobs online at a weekly and daily basis rose to 21% (14.6% in 2019), while a significant increase was also noted in the frequency of searching for travel information with 17% of the participants stating that they perform this search either daily or several times a day (5.5% in 2019). Correspondingly, however, the frequency of searches for health issues showed seven points drop, as the percentage of users who look for medical information daily is 20.5% (27.4% in 2019).

Figure 54: Information



Undoubtedly, the main and most frequent use of the Internet concerns news searching. More specifically, 90% of the respondents get their information "daily" and "several times a day" from the internet (Figure 14), marking a leap of 26.6% compared to third wave of WIP-GR in 2019 (63.5%). This is also consistent with the high penetration of social media (SM) as, according to the Pew Research Center,²⁰ 73% of digital users in Greece consider the access to SM as the most important reason for the expanded information of people for both domestic and international news. More and more citizens around the world are turning to the SM for their information but also to express their positions and opinions.

However, consuming and engaging with news content is largely casual (Boczkowski et al. 2018, Fletcher & Nielsen 2018), as a large proportion of internet users adopt a News-Find-Me (NFM) attitude, the belief, that is, that there is no reason to actively follow a traditional medium in order to follow current events, since the social media will bring to the informative "doorstep" of each user all the information they need (de Zuniga, Weeks & Ardèvol-Abreu 2017). As various digital platforms are transformed into spaces for shaping public discourse, the phenomenon has negative effects on citizenship, to the extent that it is linked to lower levels of political knowledge and participation (de

²⁰ <https://www.pewresearch.org/global/2022/12/06/social-media-seen-as-mostly-good-for-democracy-across-many-nations-but-u-s-is-a-major-outlier/>

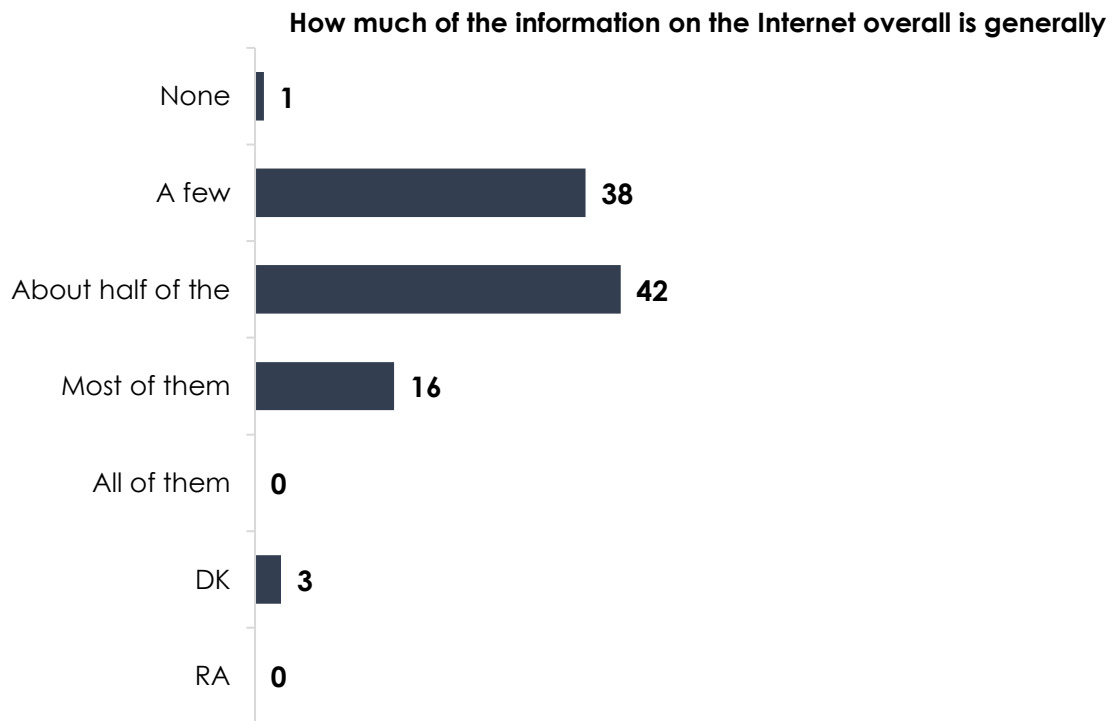
Zuniga & Diehl 2019, Shehata & Strömbäck 2018). In the same context, the aforementioned survey by the Pew Research Center showed that social media are one of the main reasons for the deterioration of democracy's "health", with the majority of users in Greece believing that social media lead to political polarization (64%), they facilitate the manipulation of the public and the spread of false/falsified news (84%).

TRUST, PRIVACY, ONLINE EFFICACY AND FREEDOM

Assessments of the reliability of information on the Internet

Given the widespread climate of mistrust, both in Greece and on a global basis, towards the news in general and especially towards the internet as a source of information,²¹ the increase in the penetration of this medium is not accompanied by a corresponding strengthening of its credibility. Indeed, 38% of our sample chose the answer option "none" or "only a few" to the question "in general, how much of the information on the Internet do you think is reliable?", while 42% declared "about half of it" (Figure 15).

Figure 6: News credibility

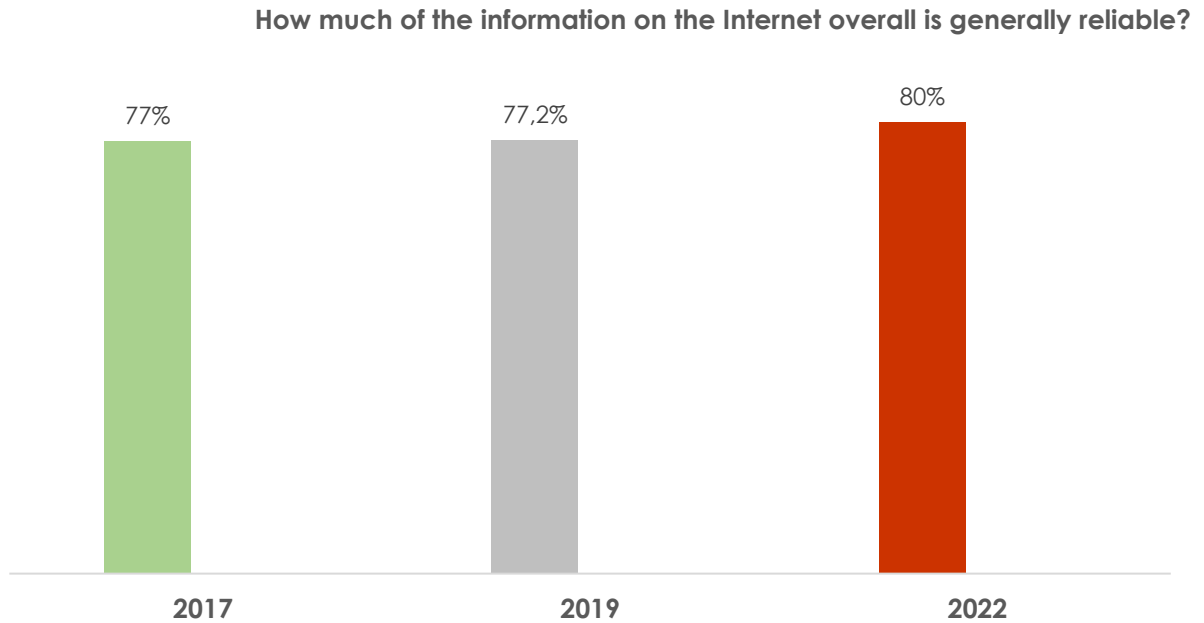


This wariness regarding the reliability of online news is in fact presenting a slight increase of 3% compared to the 2019 survey (77.1%). However, the percentage of those who believe that no online news is reliable has fallen to 1% (3.6% in 2019), whereas none among the respondents believe that all online news is unreliable. As can be seen in Figure 16, the general mistrust of users is slightly increased compared to the two previous WIP-Greece in 2017 and 2019.²²

²¹ <https://www.ipsos.com/en/trust-in-the-internet-2022>

²² Total percentage: «Only a few» and «About half of it».

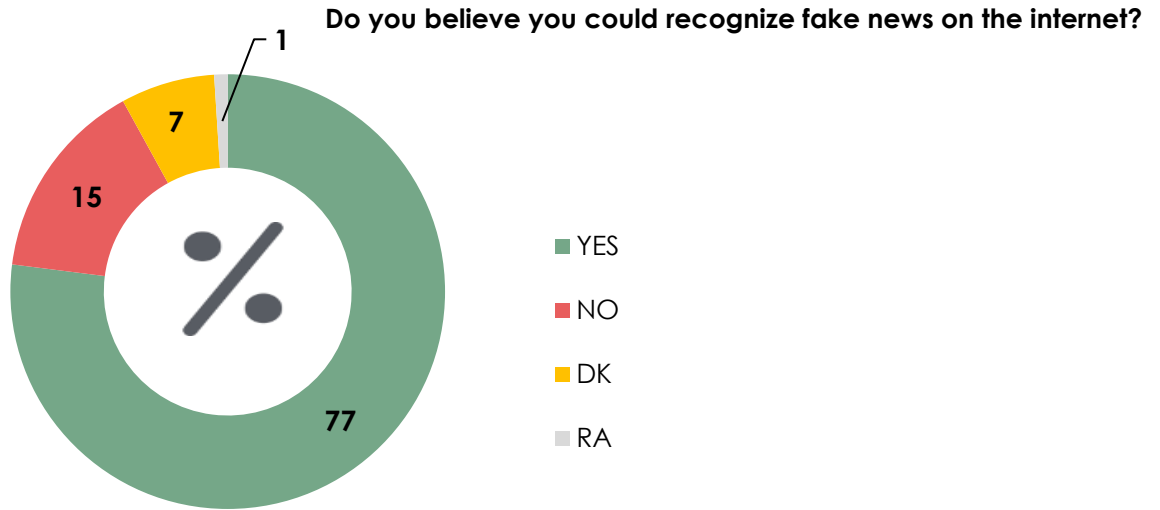
Figure 16: How much of the information you find on line do you think is reliable (Total percentage: «Only a few» and «About half of it»)



Recognizing fake news

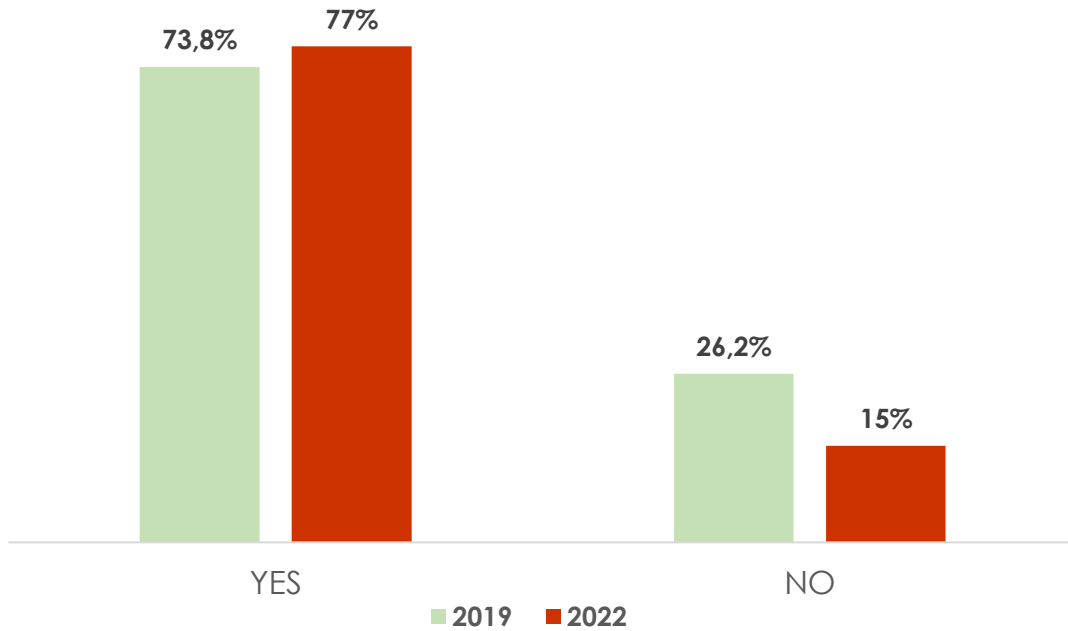
Despite the expressed high mistrust of Internet users in Greece regarding the credibility of the news they find there, more than seven out of 10 (77%) consider themselves capable of distinguishing fake/falsified news, while only 15% state that they do not have this ability (Figure 17).

Figure 77: Ability to recognize fake news



Compared to the previous wave of the WIP-GR, as shown in Figure 18, there is a slight increase in those who say they can distinguish a fake/falsified news story, alongside a significant decrease in those who say they cannot make that distinction. In behavioral science terms, the overwhelmingly high rate of feeling effective at dealing with fake news online could perhaps be attributed to the cognitive bias of over-confidence in one's ability to detect lies.²³

Figure 88: Ability to recognize fake news (comparison WIP 2019 - 2022)



²³ Cf. <https://www.aeaweb.org/articles?id=10.1257/aer.20191295>

In recent years, with the explosion of the internet, the collective ability of individuals in modern democratic societies to distinguish truth from falsehood or political fiction and logic from its non-existence, has been fundamentally challenged (Benkler, Faris & Roberts 2018: 4). This is still happening in the context of an indispensable change marked by today's digital media age, a cultural technique that changes the way people perceive the world, understand themselves and act accordingly (Baecker 2018: 23). As shown by the research of Hopp et al. (2020), people who place themselves at the extremes of the "conservative" and "progressive" spectrum tend to share fake news by drawing material from unreliable sources, mainly due to a lack of trust in established news organizations.

In the same context, it is no coincidence that the abundance of research on the use of machine learning systems aimed at the automatic detection of fake news, with characteristics ranging from their content itself (Pidikiti et al. 2020, Horne & Adali 2017), to the writing or the credibility of the source (Baly et al. 2018). Furthermore, as misinformation, fake news, and political mobilization appear to capitalize on collective emotions to dominate public discourse, in many studies, the emotional tone of news has been an important predictor of news inauthenticity. For this reason, blockchain technologies have also been activated (Koly et al. 2022). However, it is worth noting that the potential replacement of online search engines by chatbot technologies (GPT) and the possible effects in the field of disinformation is something that evokes deep concerns among experts.

Internet and online privacy

According to Figure 19, users in Greece do not seem to be bullied or harassed when browsing the internet (87%), while only 12% reported this problem.

Figure 9: Victimization of online users

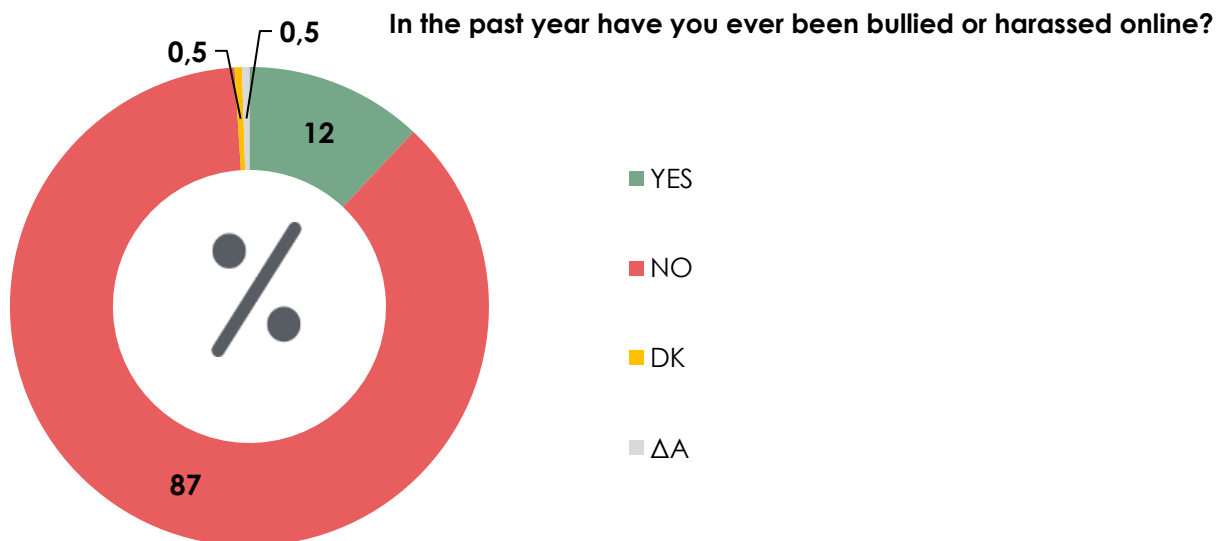


Figure 20 shows that 74% of users have not faced privacy violations, while for those who did, the consequences were not considered important (17%), or slightly important (5%) and mainly concerned causing negative emotions or other psychological consequences, such as anxiety or fear due to bullying and identity substitution. Furthermore, 20% of the victims of these violations state that they had financial consequences, 12% report problems in interpersonal relationships, while the impact on the workplace is limited to 7% (Figure 21).

Figure 20: Online privacy violation

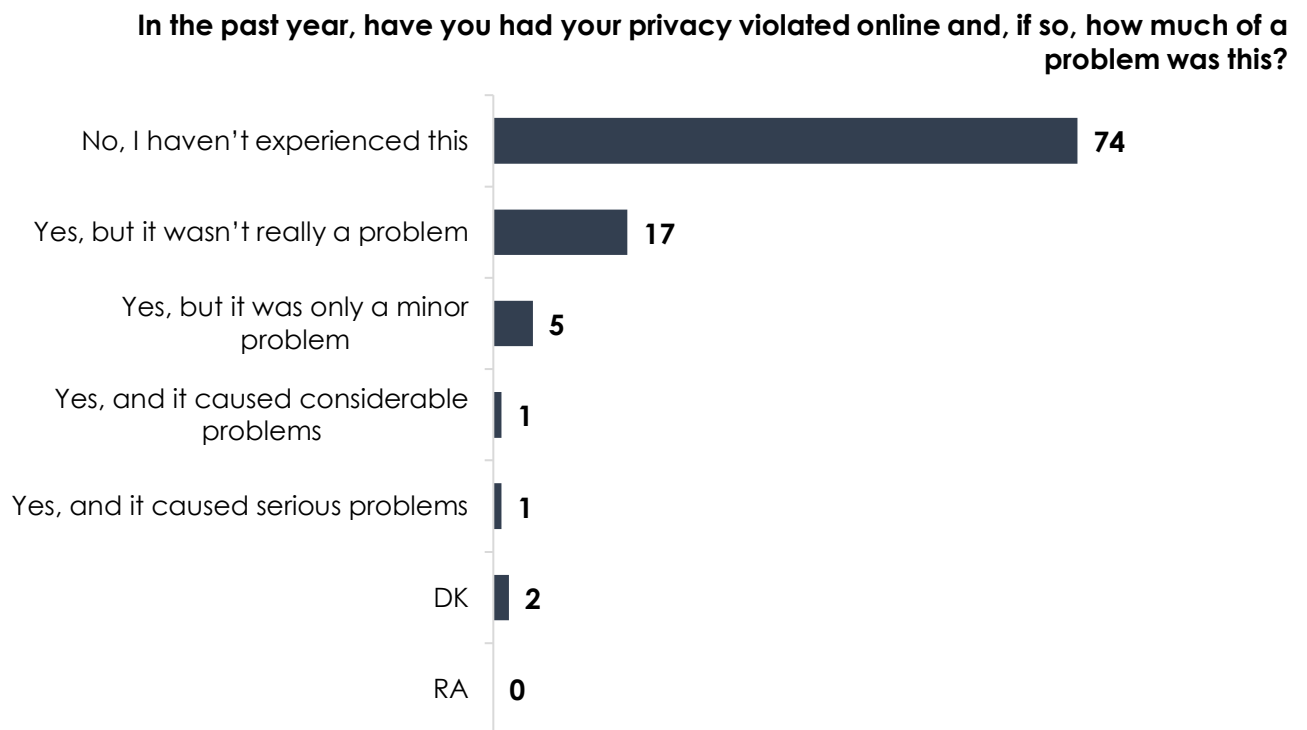
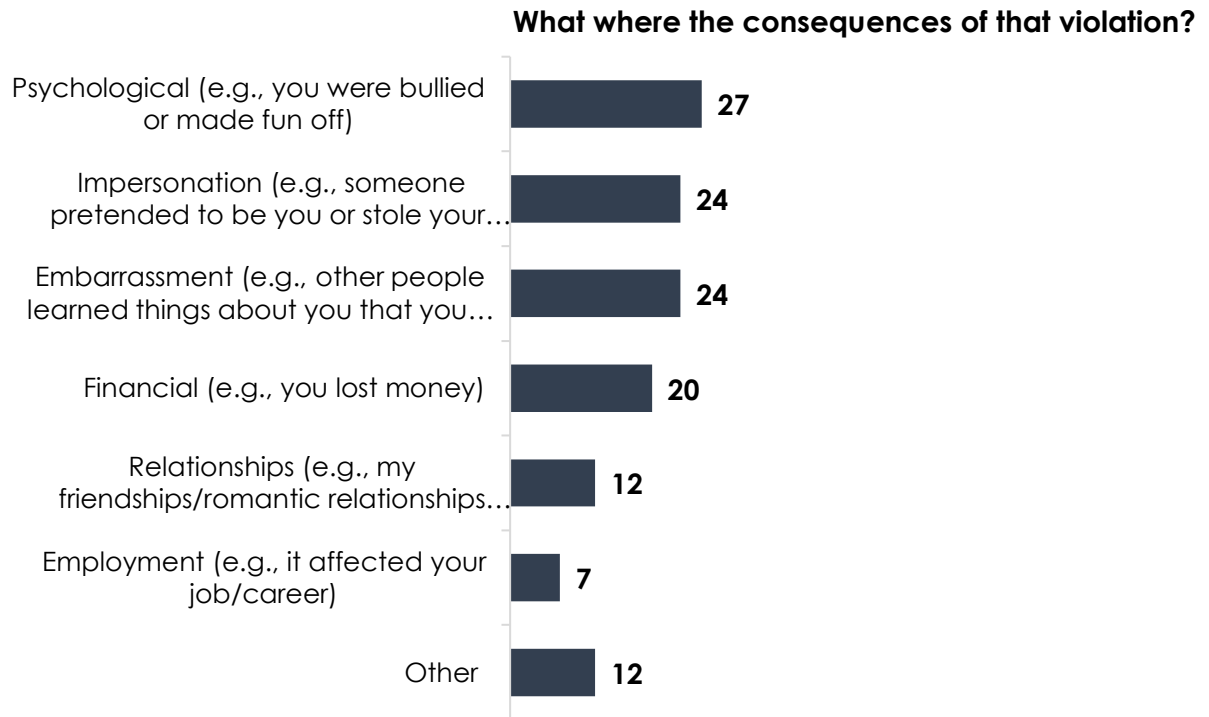


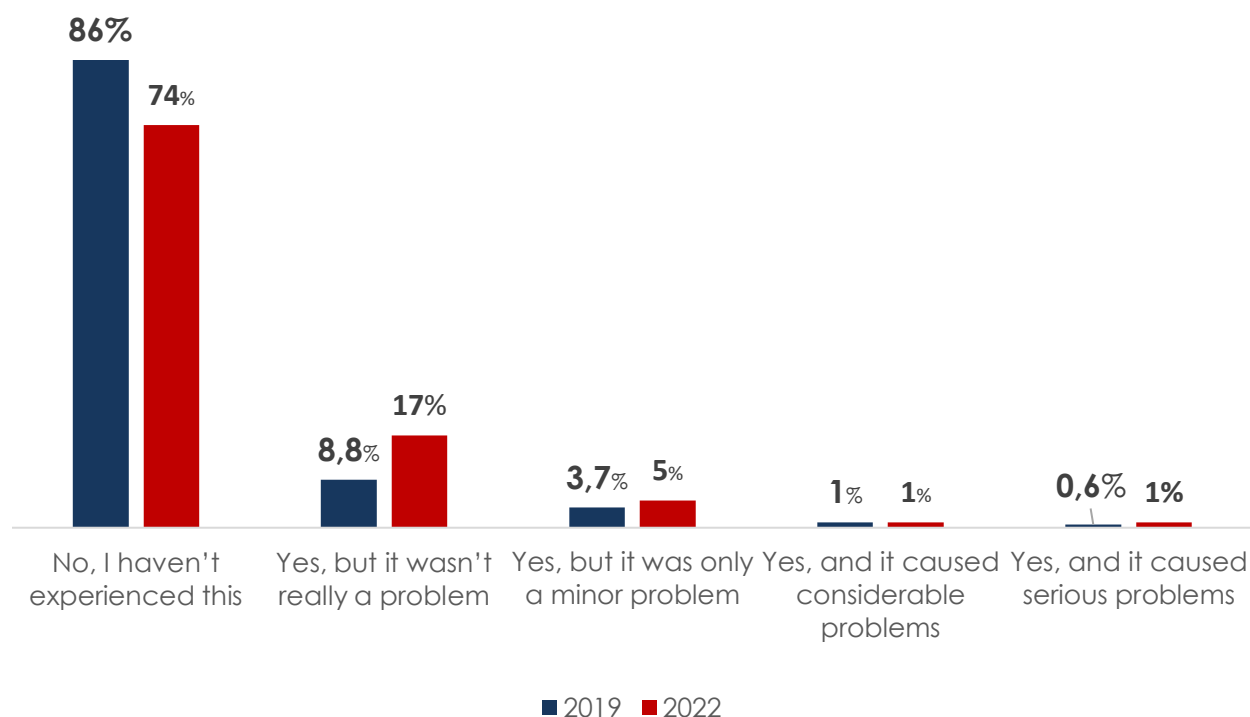
Figure 21: Privacy violation consequences



However, if we look at Figure 22, there is an 8% decrease in the percentage of those who say that their privacy was not violated and a significant increase of more than 10 units,²⁴ in those who say that they experienced the problem but without serious consequences.

²⁴ Total percentage: “Yes, but it wasn’t really a problem” and “Yes, there was a small problem «Yes, but it was a minor problem”.

Figure 22: Privacy violations (Comparison WIP 2019-2022)



Internet and privacy concerns

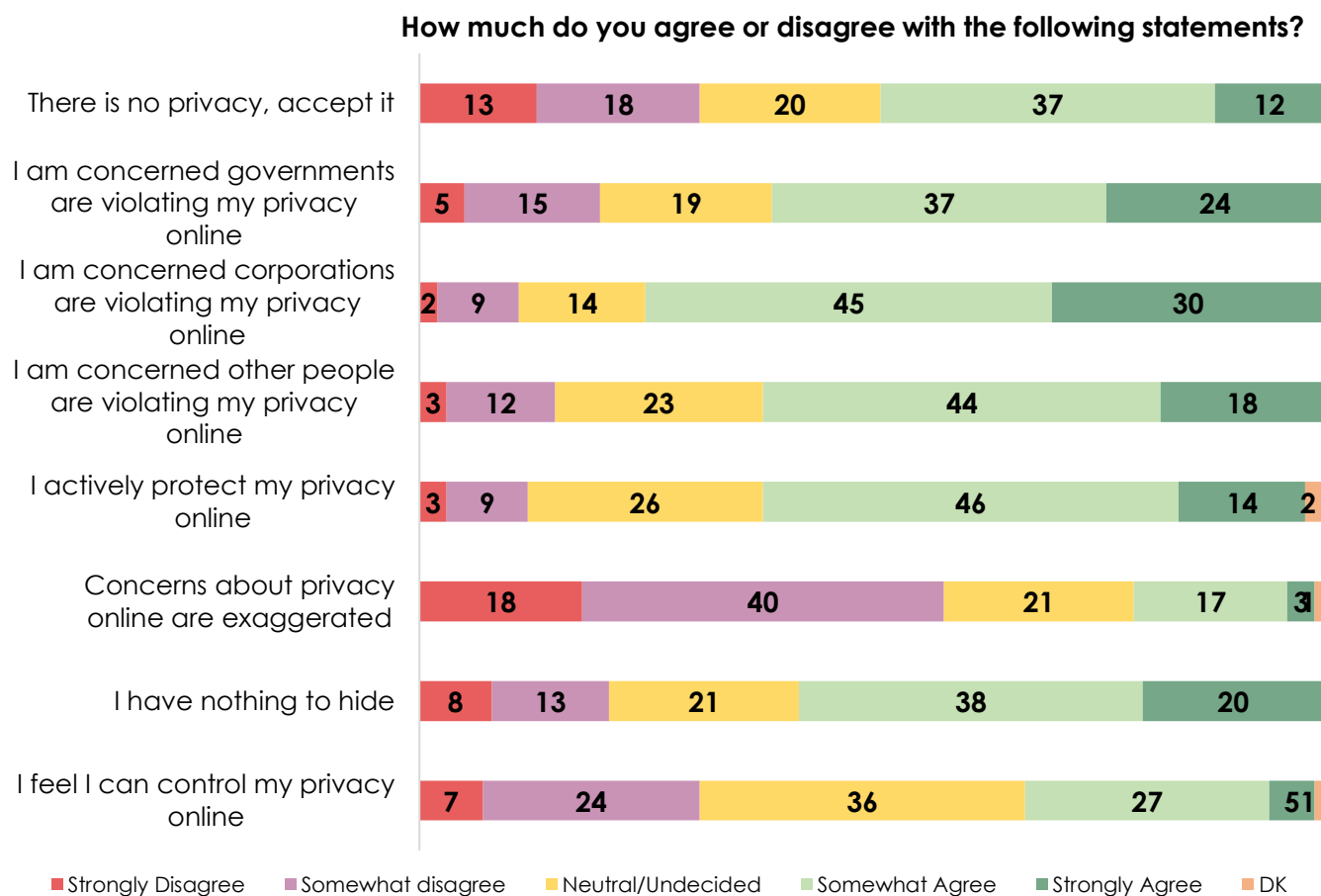
Half the internet users in Greece consider that the internet is not a safe browsing space in terms of privacy. This concern was equally strong in the two previous waves of the World Internet Project Greece (2017, 2019). As shown in Figure 23, 49% of the survey population declare that “*There is no privacy, accept it*”, marking a drop from 54.8% seen in the 2019 survey.

Similarly, those who agree with the statement “*concerns about violation of privacy on the internet are exaggerated*” also show a drop of 3%, landing at 20%²⁵ in 2022 survey, compared to 23% of the third wave of WIP-GR in 2019. It should be noted that 32%²⁶ of users in Greece feel that they “*control their privacy*” online. That is, a significant drop compared to the 59.3% recorded in the 2019 survey, while a 10% drop is also observed in users who declare they “*actively protect their privacy*”, from 70% in 2019 to 60% in the recent survey.

²⁵ Total percentage of “*Somewhat agree*” and “*Strongly agree*”.

²⁶ Total percentage of “*Somewhat agree*” and “*Strongly agree*”.

Figure 103: On line privacy (2022)



In the fourth wave of the WIP-GR, as it happened in the third, a significant contradiction as well as an empirical illustration of the privacy paradox is observed among users who declare "*I have nothing to hide*" and their privacy concerns, which in fact remain stable compared to the 2019 survey: 75% feel their privacy is violated by companies (75.6% in 2019),²⁷ by governments 61% (60.8% in 2019)²⁸ and by other individuals 62% (62.2% in 2019).²⁹

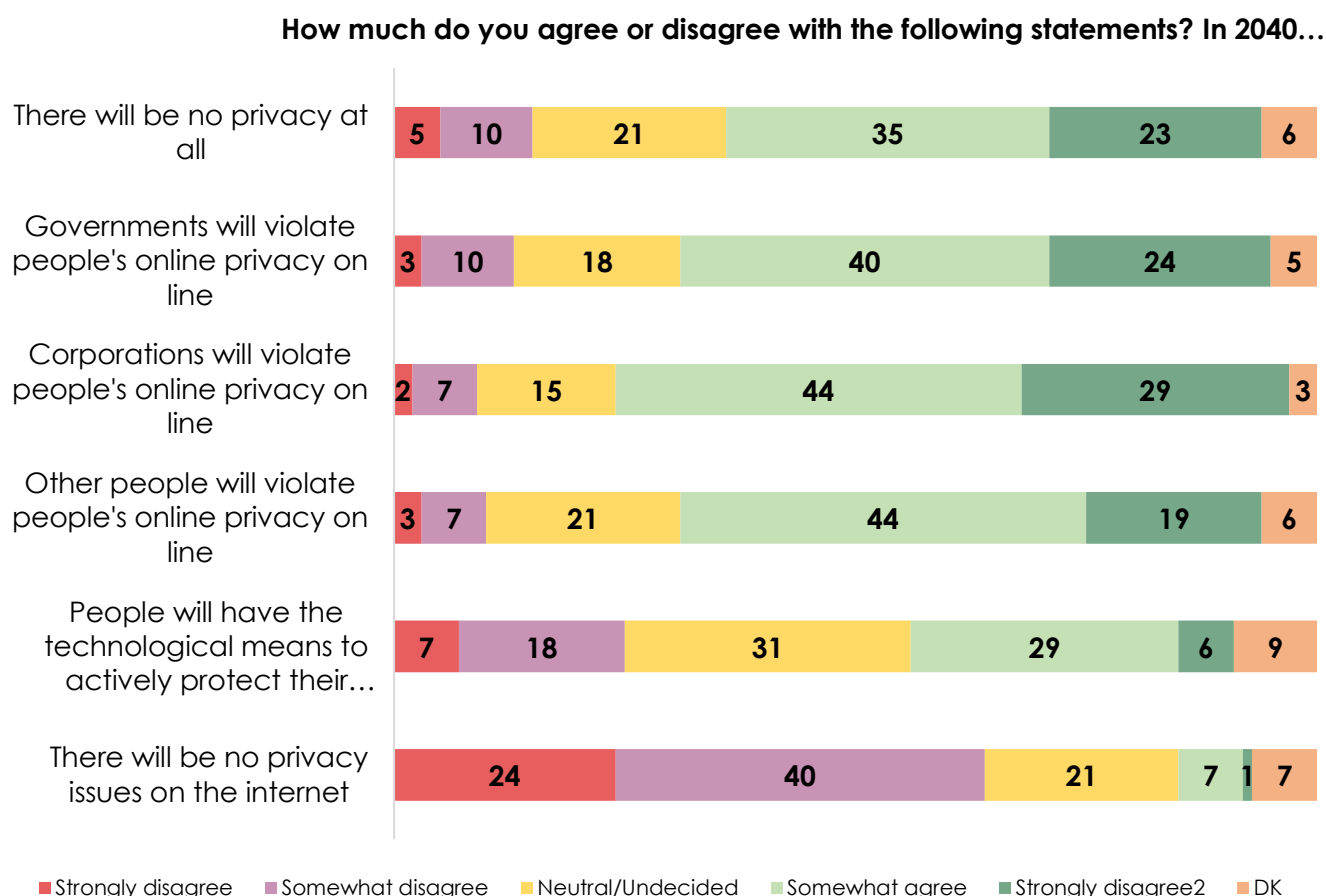
Furthermore, what should also be noted is the expressed pessimism of the respondents regarding the future condition of privacy that could be characterized as dynamic pessimism. In the third wave of WIP-GR 49% of the sample (Figure 23) agree with the statement "there is no privacy, accept it". But when it is viewed 20 years later, the percentage climbs to 58% while, at the same time, 64% of the respondents "predict" that then there will indeed be problems related to online privacy violations (Figure 24).

²⁷ Total percentage of "Somewhat agree" and "Strongly agree".

²⁸ Total percentage of "Somewhat agree" and "Strongly agree".

²⁹ Total percentage of "Somewhat agree" and "Strongly agree".

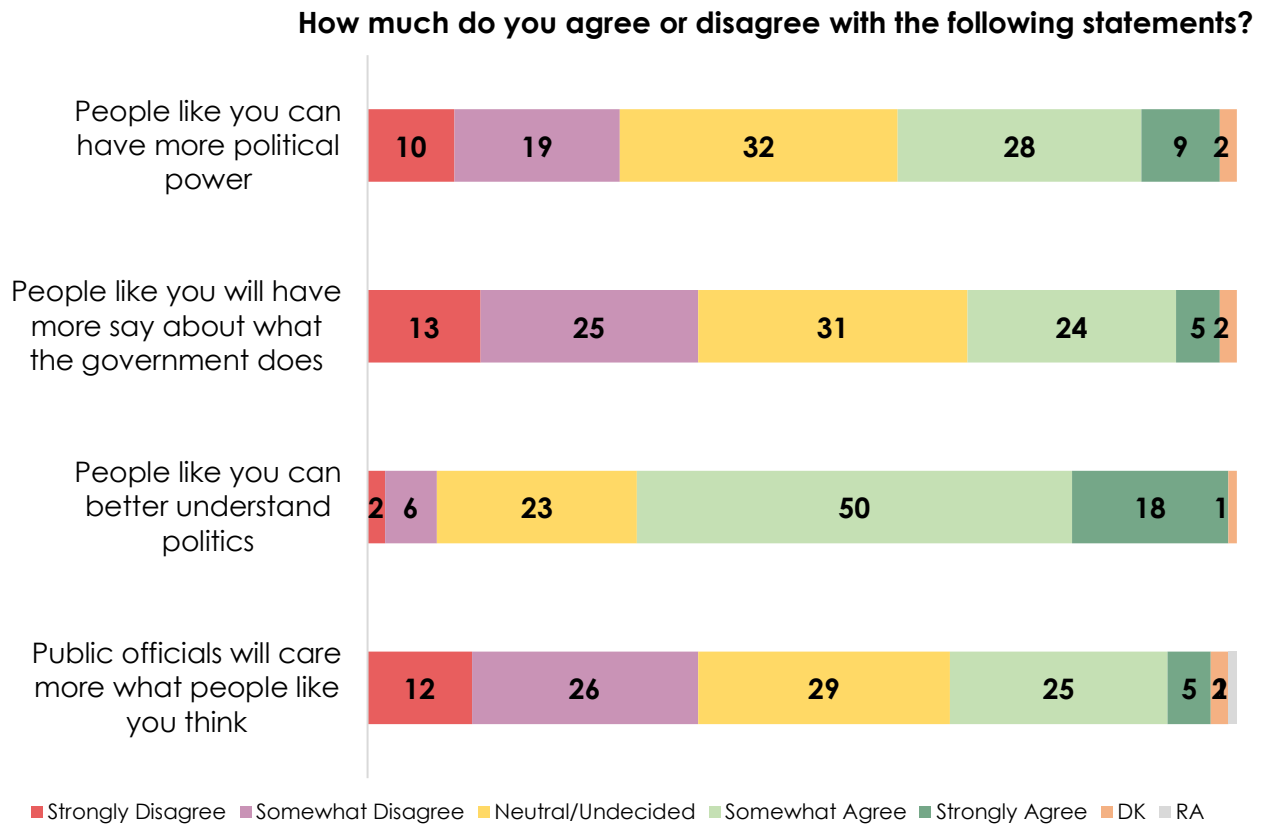
Figure 24: Online privacy (2040)



Online political efficacy

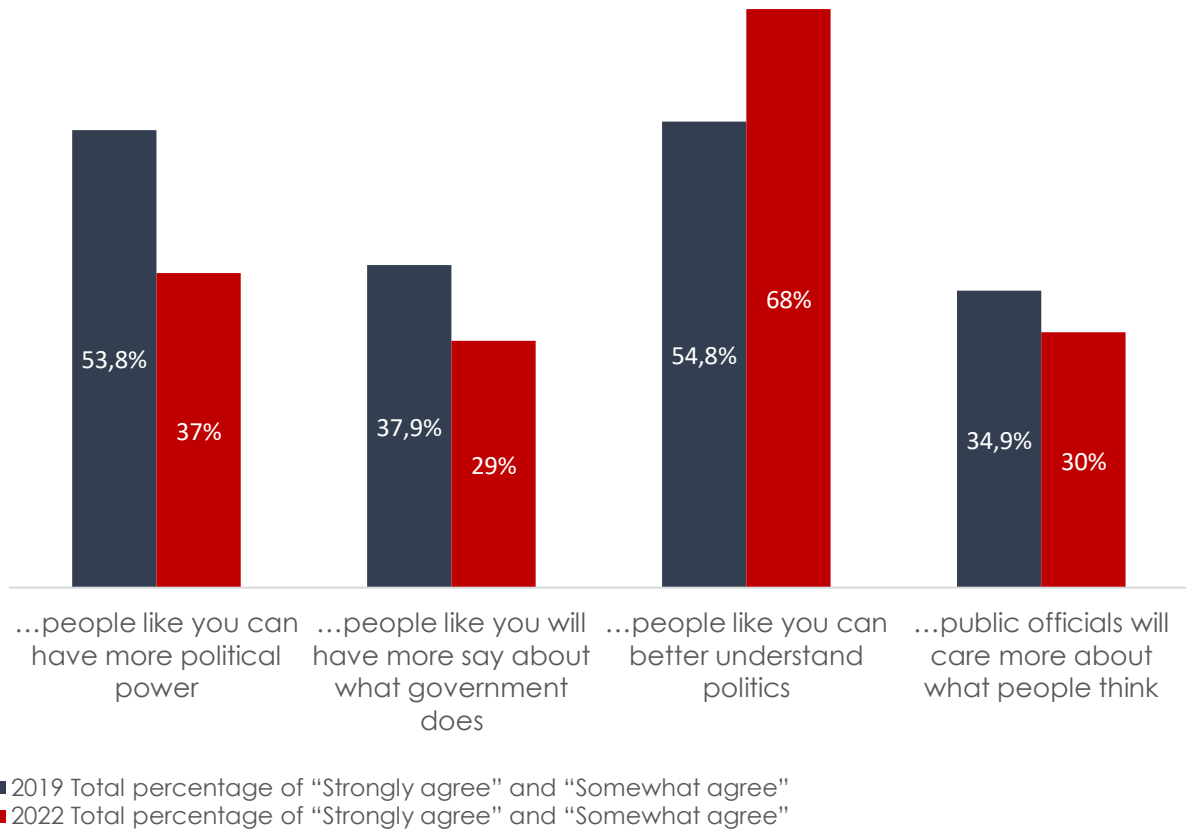
The rapid rise of social media and the increase of internet penetration coincides with the debate about the use of digital media for political participation, but also with the growing concern about the potential of citizens to influence political processes through them. Outlining users' perceptions in Greece of their own political efficacy, as "political action has or can have an impact on the political process so that it is worthwhile for a person to fulfill their duties as a citizen" (Campbell, Gurin & Miller 1954: 187), one in three participants estimate that they can have more political power through the Internet, while almost seven out of 10 (67%) believe that the internet can help them better understand politics (Figure 25), marking an increase of 12,2 units compared to the 54.8% recorded by the third wave of WIP-GR. This conviction of a better understanding of politics can be combined with both the spread of internet use in Greece (91%), as well as with its further use for daily information (90%). These findings are consistent with the results of the Pew Research Center (2022) survey, as, according to 73% of the survey participants, access to social media leads to greater and more expanded information.

Figure 25: Political Efficacy



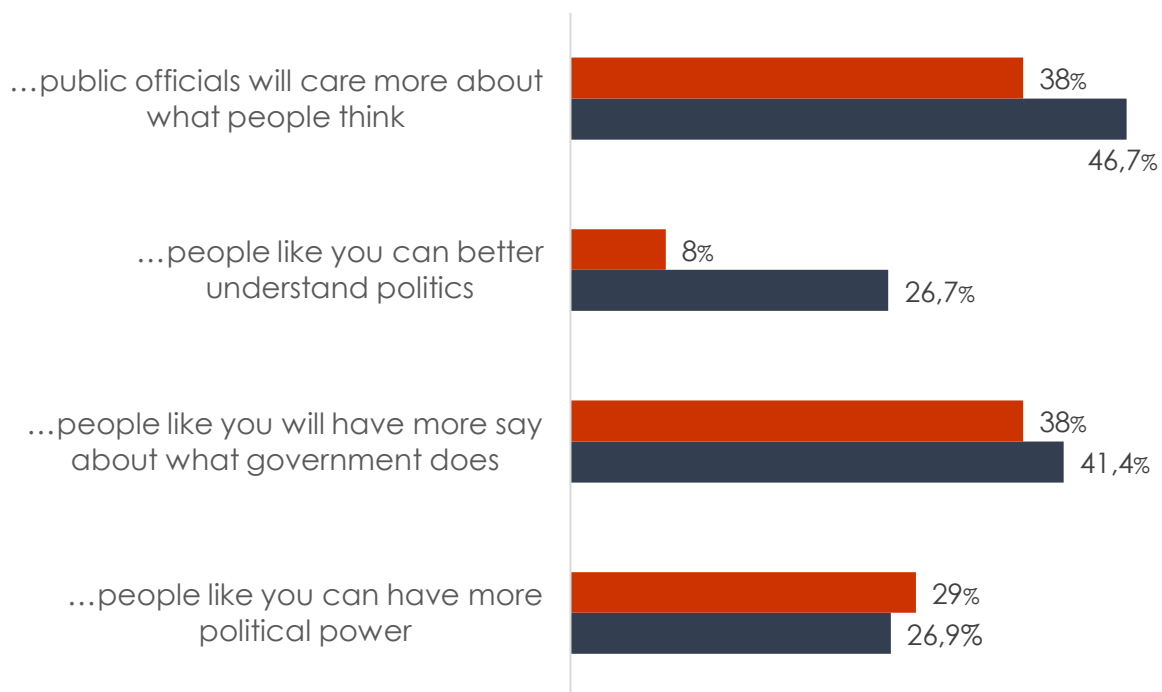
However, the fourth wave of WIP-GR probably reflects the limitation of some illusions, as can be seen in the comparative bar chart in Figure 26. In 2019, 53.4% of users agreed with the statement that "with the internet people like you can get more political power", considering that thanks to the internet their voice would be heard more loudly. In the recent survey though, that optimism has dropped to 37%, down 16.8%. Similarly, the conviction that the internet can offer citizens "more say about what government does" fell to 29% compared to 38% recorded in 2019, whereas the assessment that "public officials will care more about what people think" also fell to 30%, marking 5 units drop compared to the 2019 survey.

Figure 26: Online political efficacy - Comparison WIP GR 2019-2022 (Agree)



Apparently, this decline was mostly directed to the *Neutral/Undecided* category as reduced rates in the *Agree* category corresponded to also reduced rates in the *Disagree* category. This was not the case with the statement "*with the internet people can have more political power*", as the decrease in agreeing with this statement is accompanied by a corresponding increase in the total percentages of disagreement (29%) in 2022 (Figure 27).

Figure 27: Online political efficacy - Comparison WIP GR 2019-2022 (Disagree)



■ 2022 Total percentage of "Strongly disagree" and "Somewhat disagree"

■ 2019 Total percentage of "Strongly disagree" and "Somewhat disagree"

Freedom of expression

A large majority of the survey population (82%) believe that "*people should be free to criticize their government on the internet*", marking a slight drop of 4% from the levels recorded by third wave of WIP-GR in 2019 (86%). Fewer users (60%) feel "*comfortable saying anything they think about politics in general.*" Although this percentage indicates a relatively high degree of entrenched freedom of expression in Greece, it appears reduced by 8 units compared to the results of 2019 (68%). Even fewer users (20%), reduced by 7.2% compared to the third wave of WIP-GR (27.2%), believe that the internet is a safe place to express one's political ideas (Figure 28).

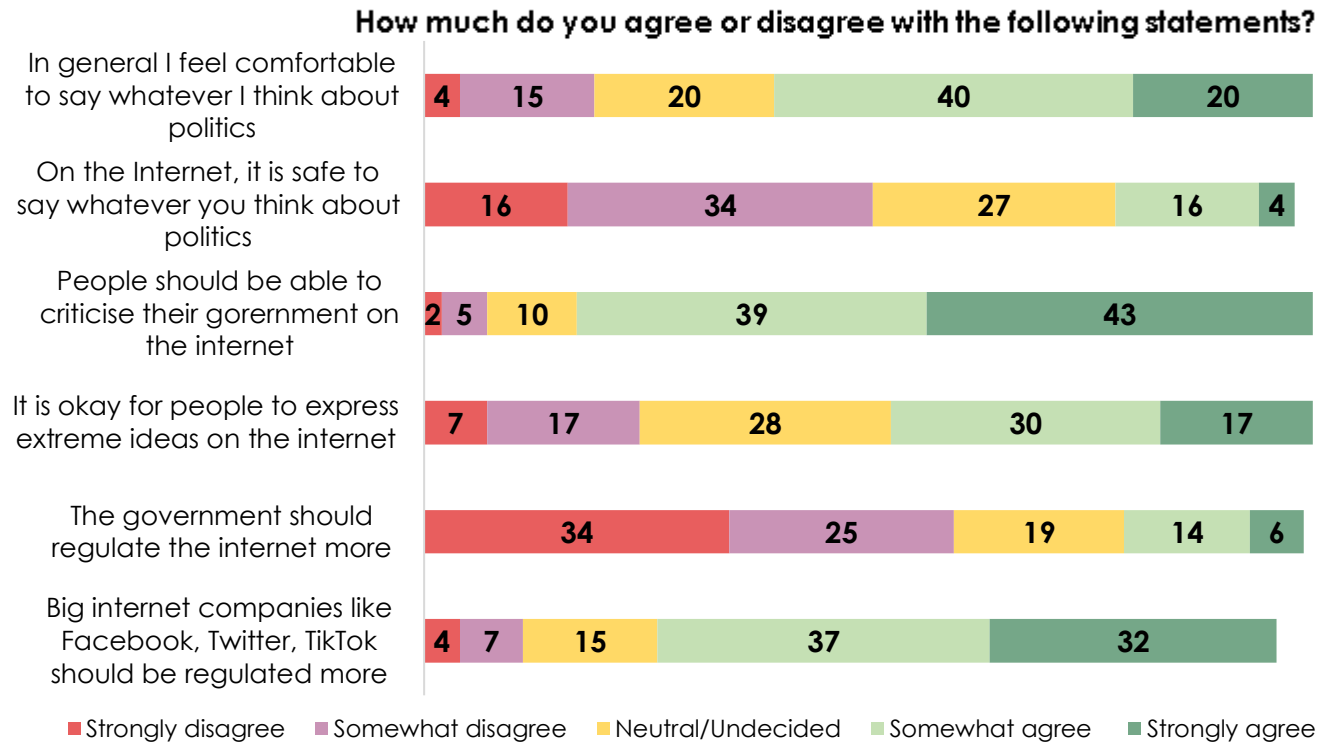
However, 6 out of 10 participants disagree that "*the government should control the internet more than it does now*" (59%),³⁰ indicating that this insecurity of political expression is less about government regulation and interference and more about the risk of exposure of the user to the opposing views of others. Beyond the avoidance of exposure, however, political freedom of expression online is also challenged by online abusive behavior, a serious issue that has emerged in various online communities as this kind of behaviors undermine social interaction, human relations and political dialogue, making it "poisonous".³¹ Perhaps this is one of the reasons why almost 7 out of 10 (69%) users in Greece believe that big companies such as Facebook, Twitter and TikTok should be subject to stricter regulation.³²

³⁰ Total percentage of "Somewhat disagree" and "Strongly disagree".

³¹ <https://www.theguardian.com/technology/2014/jan/30/labour-calls-for-better-laws-to-stop-cyberbullying>

³² Total percentage of "Somewhat agree" and "Strongly agree".

Figure 28: Freedom of Expression



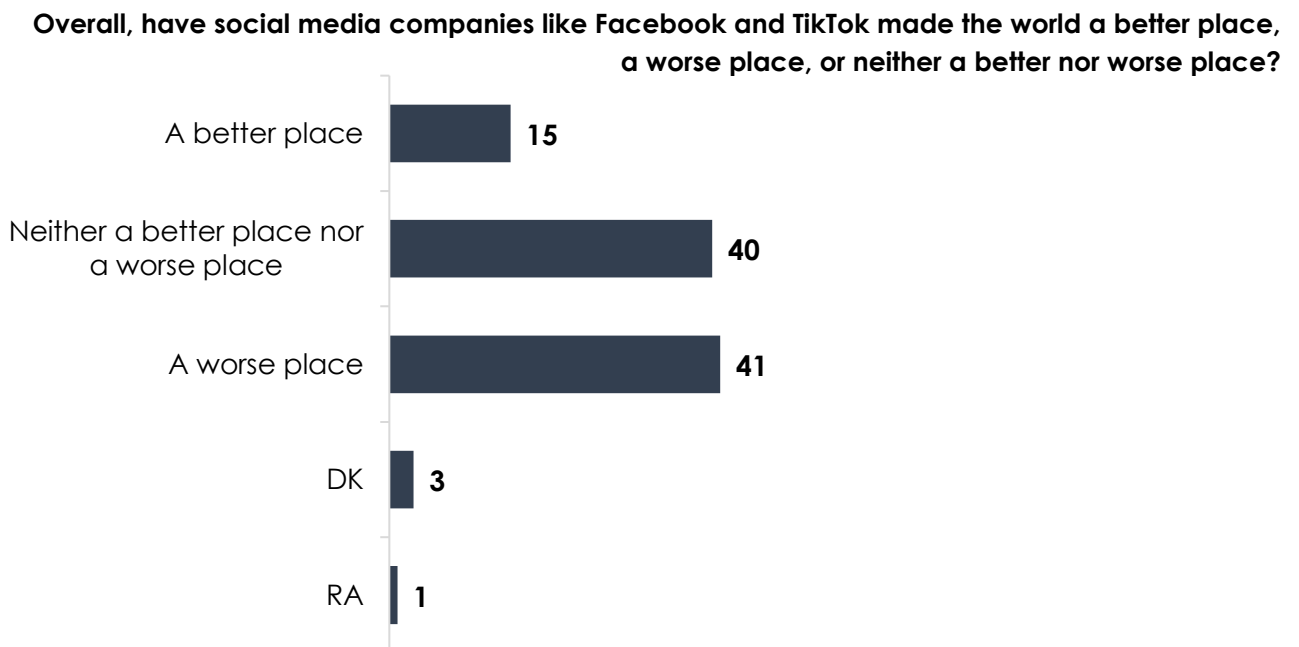
SOCIAL MEDIA, ALGORITHMS, WORK AND THE FUTURE

Social Media

With social media occupying much of the debate and literature regarding their role during the pandemic (both in terms of their interpersonal and informational ramifications, as well as the spread of fake news), digital users in Greece they appear divided between neutral and negative attitude towards the question of whether SM have in fact improved or worsened the world (40% neutral/undecided and 41% Agree/Strongly Agree). Only 15% of the survey population believes that the impact of social media on the world has been positive to date (Figure 29).

However, regardless of the dangers of misinformation and social and affective polarization, the positive impact of social media appears to be about the sense of empowerment to people, both via the ability to create content and through the community formulated by their daily interactions (Subramanian, Mitra & Ransbotham 2021). Also, for the time being, there does not seem to be the necessary volume of digital users that could threaten social networking platforms for their inaction (to conform to ethical rules), either through collective action or by leaving them (Pradel et al. 2022).

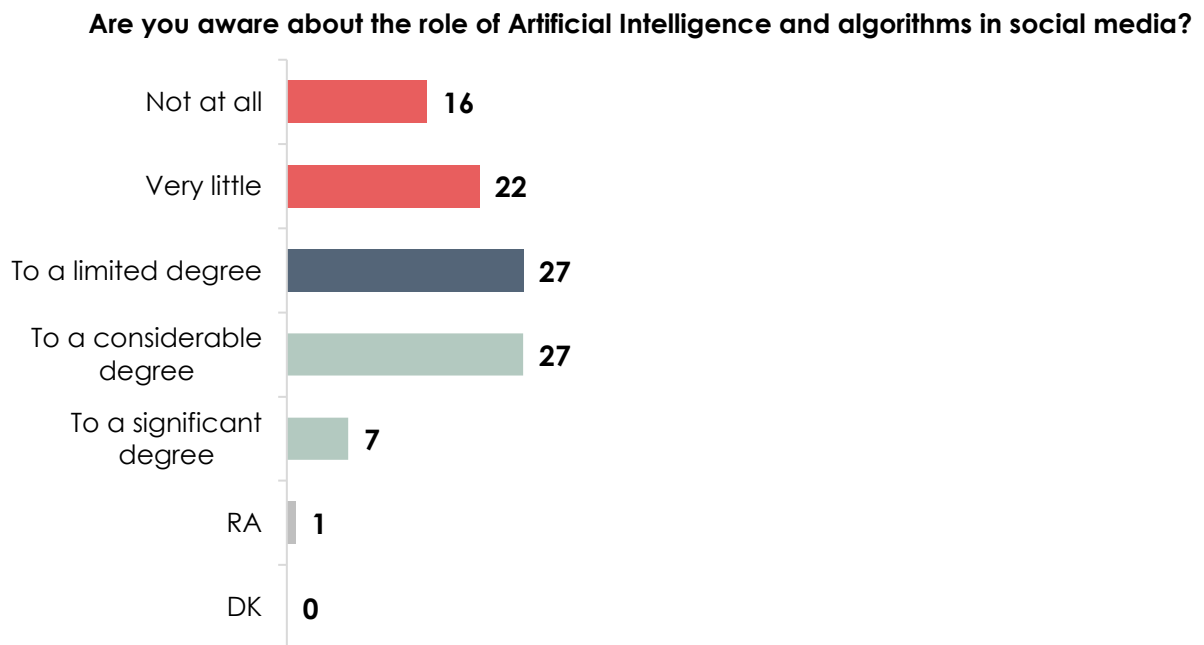
Figure 29: Social Media



Algorithmic awareness

Despite the penetration of internet use, the increase in online news searches and the high familiarization with social media, users in Greece show a low degree of "algorithmic awareness", in the sense of understanding how the algorithms of Artificial Intelligence shape content, make decisions and form our entire experience in the modern digital reality. Algorithmic awareness is considered an advanced digital skill that potentially creates new inequalities (Gran, Booth & Bucher 2021) and seems to be relatively absent from the users' community in Greece, although "smart" algorithms are now "constructing private worlds" (Latzer 2022) and significantly determine peoples' choices in both online and offline life.³³ Almost four out of 10 users are "not at all" or "very little" aware of the role of AI and its algorithms in social media, 27% are "to a limited extent", while 34% (mostly younger users) declare that they are aware (to a considerable/significant degree) how the hidden algorithmic architecture of the major online platforms works (Figure 30).

Figure 30: Algorithmic awareness



According to a recent report by the European Commission,³⁴ algorithms are an essential element of the online experience as our navigation in the world wide web would be almost impossible without the application of intelligent algorithms that organize the internet's "rivers" of data for us. At the same time, however, algorithms work beyond our control to cater to our preferences, curate the content we are exposed to and exclude what doesn't fit our behavioral profile. By computing probabilities to be able to statistically predict people's tendencies and inclinations, they can turn predictive power into behavior-modifying power as seen for example in Facebook's social contagion experiments (Kramer et al. 2014).

³³ <https://www.abc.net.au/news/2022-12-12/robodebt-algorithms-black-box-explainer/101215902>

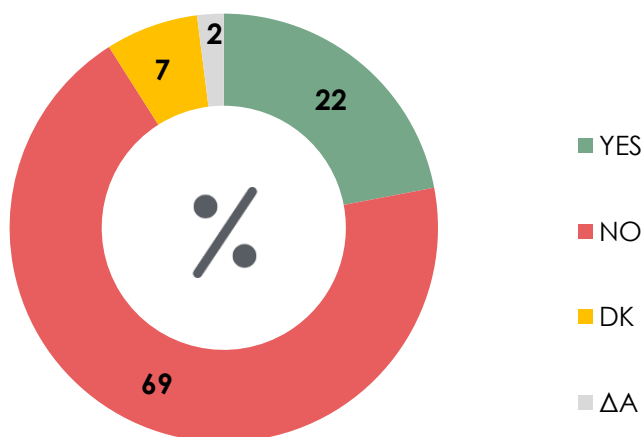
³⁴ <https://op.europa.eu/en/publication-detail/-/publication/49b629ee-1805-11eb-b57e-01aa75ed71a1/language-en>

Phenomena such as micro-targeted political messages, partisanship or automated recommendation systems, which end up driving polarizing, misleading, extreme or dangerous content into users' filter bubbles, have led the EU to emphasize a deeper understanding of algorithmic influence. It should be noted that the claim for “explainable Artificial Intelligence”,³⁵ as well as the Article 22 of the EU General Data Protection Regulation (GDPR), refer to the right of users "not to be subject to automated decision-making". Although the ambiguity of the wording of the article and the difficulty of interpreting the algorithmic decisions due to their great complexity raise questions about the real protection that can be provided to data subjects, the technology of explainable Artificial Intelligence is already making progress (Goebel et al. 2018).

On the other hand, despite the rapid advancement of algorithms and machine learning technology, in a relatively optimistic, if perhaps misguided, tone, seven out of 10 survey participants are convinced that their jobs will not be threatened by artificial intelligence, yet a 22% of participants are worried that in the future some program will replace them (Figure 31). Technological progress has changed work structures replacing humans many times since the industrial revolution, although one could argue that it has in fact freed people from mundane and tedious repeated activities. This is why today, as advanced software invades different sorts of professional fields that may not be considered tiring, tedious or mundane, the impending human replacement by technology may instigate a dialogue not only about people’s place in the labor market but also about the advancement of the skills -and definitely digital skills- they should possess.

Figure 31: Algorithms and work

Do you feel that your job is potentially threatened to be eliminated because of automation, artificial intelligence, or other technological developments?



Internet and future work

As the founder of the WIP, Professor Jeff Cole, argues, the pandemic has profoundly affected perceptions of work,³⁶ which can also be seen in the current WIP-GR survey (Figure 32). After almost two years of teleworking and telelearning, about half of the participants in the fourth wave of WIP-

³⁵https://ec.europa.eu/futurium/en/system/files/ged/ai-and-interpretability-policy-briefing_creative_commons.pdf

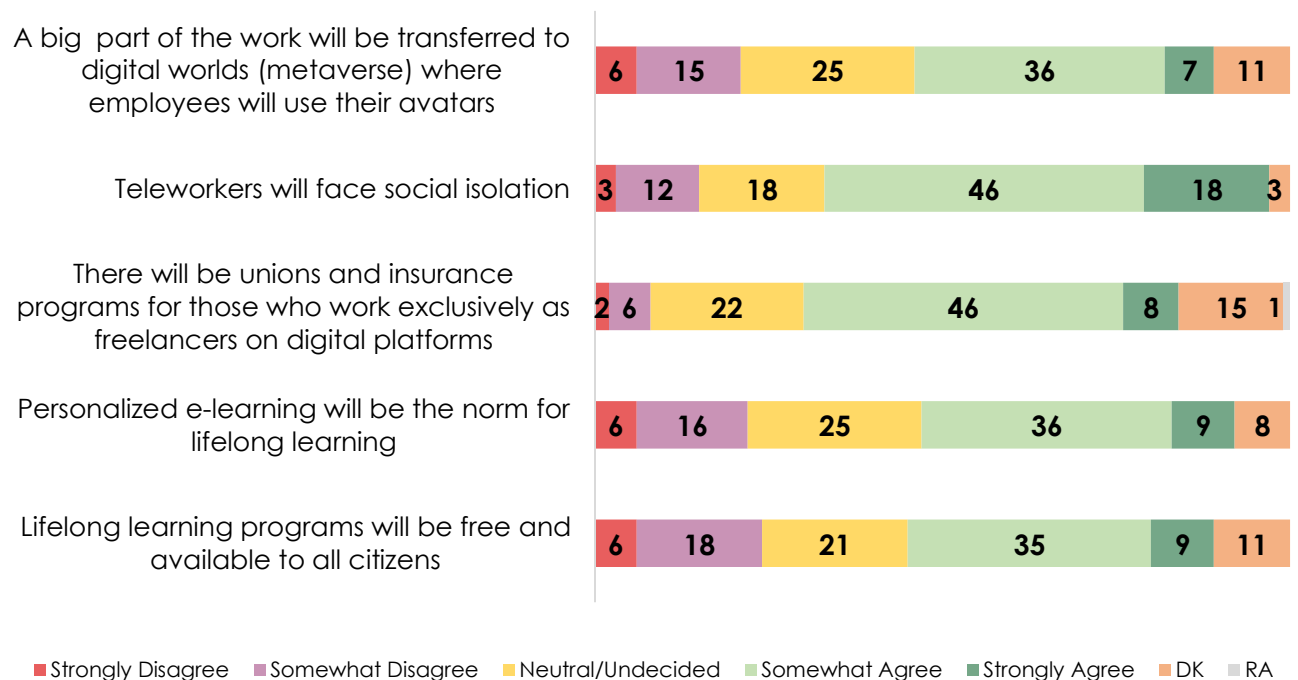
³⁶<https://www.digitalcenter.org/columns/cole-the-war-that-is-coming/>

GR "predict" that, in 2040, technology and the possibility of remote work will modify work communities and social policies, estimating that "there will be workers unions and insurance programs for those who work exclusively as freelancers on digital platforms" (54%). More than 6 out of 10 users in Greece (64%) believe that "teleworkers will face social isolation", while 41% agree that "an even greater part of the work will be transferred to digital worlds (metaverse) where employees will use their avatars." It is worth underlining not only the ominous prospect of individualization/alienation of teleworkers, with the risk of them losing the meaning of working life (Nikolova & Cnossen 2020), but also the large percentage (20-25%) of participants, who faced the questions that were put to them showed that they are unable to think imaginatively about what is likely to happen and create images of the future.

As far as education is concerned, 45% of the participants in the WIP-GR 2022 survey believe that "personalized e-learning will be the norm for lifelong learning", while approximately the same percentage (44%) are optimistic that "the lifelong learning programs will be free and available to all citizens".

Figure 32: Work and the internet

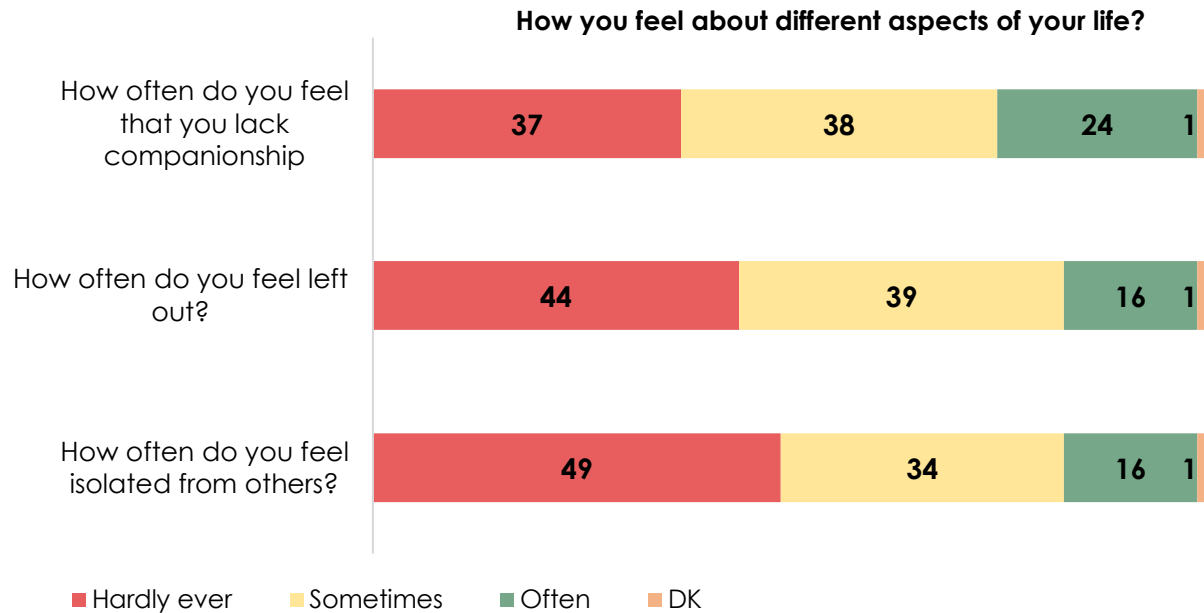
How much do you agree with the following statements about future work. In 2040...



Social and emotional relationships

The feeling of isolation, as experienced by the respondents during the pandemic in the workplace and in their interpersonal relationships, as well as the alteration of the quality of their social experience, is depicted in Figure 33. Half of the respondents declare that they still feel isolated from others, 62% say they lack companionship and 55% feel neglected.



Figure 33: Social and emotional relationships

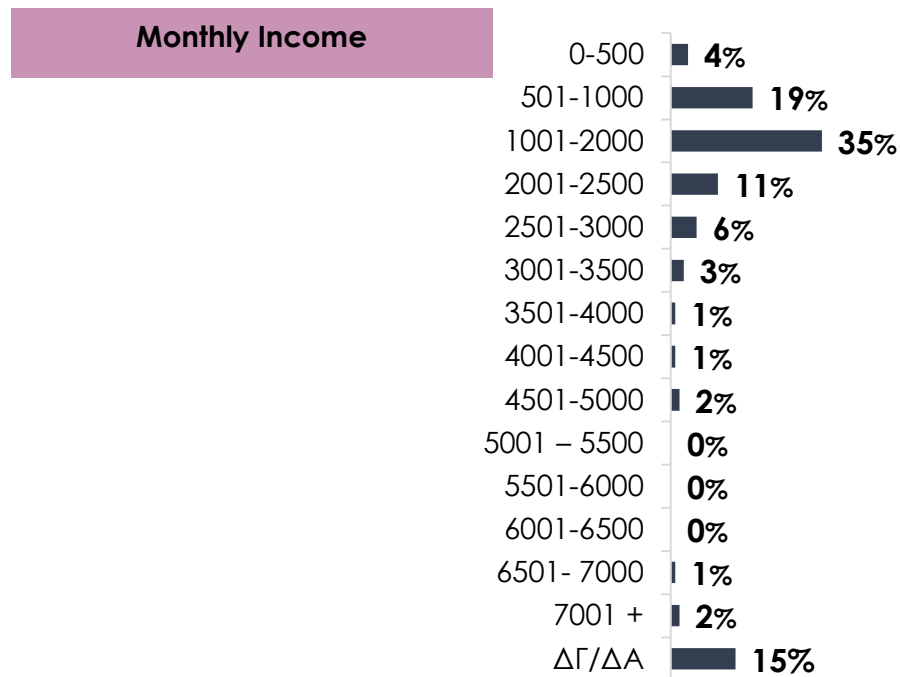
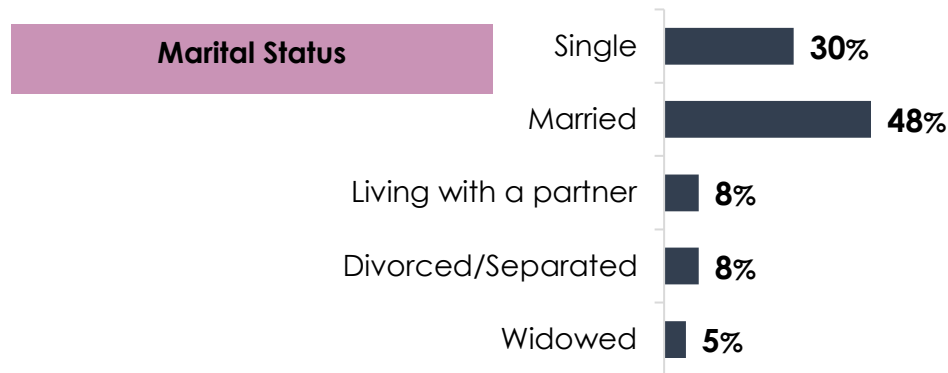


It seems that the psychological effects of the pandemic are indeed still taking a toll on interpersonal relationships. On this point, the review and meta-analysis by Ernst et al. (2022), in 34 surveys worldwide involving a total of 200,000 people, showed that the relatively small (5%) but real increase in social isolation led to the impairment of many people's social network and, therefore, to loneliness, which characterizes the feeling of a person that (s)he lacks quantitatively and qualitatively the desired social relationships.

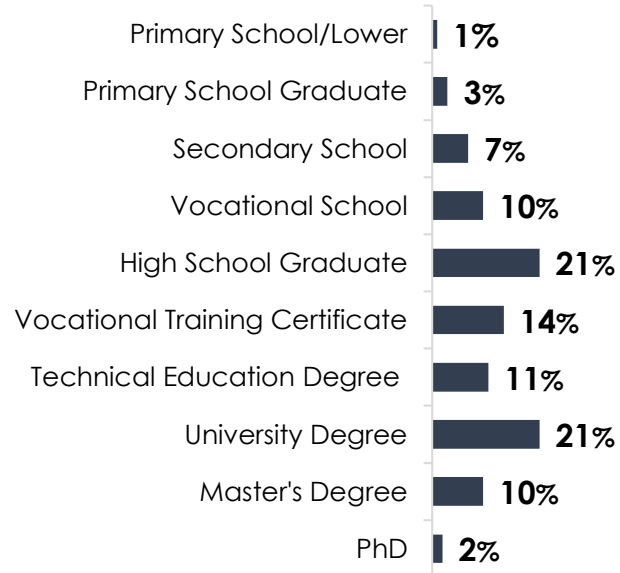
The specific results raise the question to what extent the necessary health restrictions, quarantine, physical and social distancing, telecommuting, distance education and, finally, the wider penetration of internet technology (hyperconnectivity) burdened the emotional life, intensifying phenomena of isolation and burdening mental health (see Donnelly & Montuori 2022).

DEMOGRAPHICS

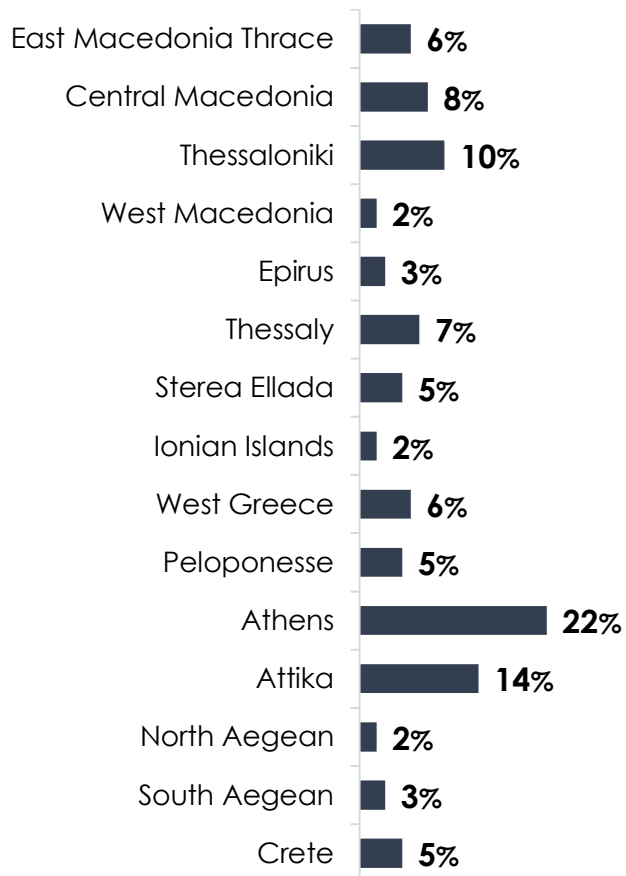
GENDER		AGE						
		15-17	18-24	25-34	35-44	45-54	55-64	65+
49%	51%	3%	9%	14%	21%	14%	16%	23%



Education



Region of Residence



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