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11. Young People's Online Engagement During and After the COVID-19 Pandemic

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The chapter investigates youth digital engagement in Croatia and Slovenia during and after the COVID-19 pandemic, with a focus on internet use, social media, and online behaviour. Findings indicate that messaging applications are the most common activity, while content creation is limited. Slovenian youth report higher rates of intensive use, whereas Croatian respondents engage more in moderate daily use. Gender and socio-economic disparities are pronounced, particularly in Croatia, where young men dominate in gaming and creative content creation, and lower-SES youth display higher levels of emotional distress from negative online experiences. Across both countries, young people prefer in-person interaction, though young people in Croatia are more open to online socialising. In general, women report greater emotional distress from negative online experiences, with Slovenian women showing the highest levels of passive use.

Keywords:
youth,
internet,
social media,
vulnerabilities,
Croatia and Slovenia

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The COVID-19 pandemic significantly disrupted young people's well-being, altering their daily routines, social interactions, and familial dynamics (Ellis et al., 2020). This period of upheaval introduced widespread stress, uncertainty, and social isolation, particularly during critical developmental transitions involving education, employment, and social integration (Xiaochen et al., 2021; Gruber et al., 2021). Although digital technologies enabled continued communication and engagement, their overuse contributed to problematic internet behaviours associated with negative psychological outcomes, including sleep disturbances, reduced physical activity, and increased screen dependency (Fernandes et al., 2020; Mohler-Kuo et al., 2021). Furthermore, the shift to online interactions has increased exposure to cyberbullying, misinformation, and maladaptive digital habits, blurring the distinction between online and offline activities and potentially intensifying feelings of isolation and stress. This change is illustrated by a quotation from a focus group conducted in Croatia:

> "As for the greatest social support, everything took place via Zoom, including socialising with friends, and that was the biggest source of support for me. Friends. Regarding university, I agree with my colleague; it was only important to them that the teaching was delivered. No one asked how things were for us on the other side. Whether we had a laptop, whether we had internet access, mobile phones, or anything through which we could participate. I know that, for me, the signal and internet connection were very weak, everything kept lagging, I didn't even hear half of it, and it was the same with exams, just stress, nothing else."
>
> (Female, employed, Croatia).

The use of social media among young people in Croatia and Slovenia carries complex individual and social implications, as evidenced by recent scientific research (Gvozdanović et al., 2019; Gvozdanović et al., 2024; Naterer et al., 2019; Lavrič, 2024). As individuals, young people often experience a paradoxical relationship with social media: while these platforms facilitate connections and foster emotional bonds with peers, they can also contribute to feelings of alienation and loneliness. There is evidence from studies conducted in Croatia that adolescents frequently engage in risky online behaviours, such as interacting with strangers and maintaining multiple social media profiles, which may pose psychological and safety risks to them (Flander et al., 2020). Furthermore, the preference for online socialising over face-to-face interactions has been linked to a weaker sense of belonging to the local community, as young people who predominantly form and maintain relationships

online tend to feel less connected to their immediate social environment (Žanić et al., 2023). A sense of isolation may arise from this detachment from traditional social support networks and community involvement. In addition, the proliferation of virtual friendships, which often far outnumber real-life friendships, indicates a shift in how social capital is constructed and maintained, which may impact the quality and depth of social relationships. Accordingly, while social media provides significant opportunities for communication and identity exploration, it also poses challenges related to mental health, privacy, and social integration. Consequently, ongoing education for young people, parents, and professionals about safe and balanced social media use is critical to mitigate adverse effects and foster healthier digital environments in both countries.

According to Hussong et al. (2021), it is evident that the most prominently observed social change among youth during the pandemic was the marked increase in the use of virtual platforms for social engagement. Social media emerged as a central resource for maintaining and fostering social relationships, thereby assisting some adolescents in coping with heightened feelings of uncertainty, health-related anxiety, and loneliness (Cauberghe et al., 2021). Wray-Lake et al. (2020) observed that adolescents experiencing low levels of familial support were particularly inclined to seek social connection through these digital platforms. Furthermore, some young people were able to regulate negative emotions and regain a sense of agency by engaging in information-seeking behaviours and participating in meaningful online conversations (Ellis et al., 2020). For instance, a study conducted by Magis-Weinberg et al. (2021) found that adolescents experienced more positive interactions online during the pandemic, suggesting that such interactions may serve to mitigate feelings of loneliness and social isolation. It has also been found that the exchange of memes, humorous videos, and interactive games functions as a form of humour coping, alleviating psychological distress and enhancing overall emotional well-being (Cauberghe et al., 2021).

Moreover, based on the data literature review performed by Draženović et al. (2023), during the initial year of the COVID-19 pandemic, social media use was found to have predominantly negative effects on the mental health of adolescents and students. The majority of studies reviewed reported adverse outcomes, particularly heightened levels of anxiety, depression, and stress associated with increased or problematic social media use. Only a small number of studies identified potentially

beneficial effects, such as providing emotional support and fostering a sense of connection for individuals experiencing social isolation due to social distancing measures. As this review is limited to the early stages of the pandemic, conclusions regarding the long-term mental health implications of social media use among these populations remain speculative.

The literature review by Marciano et al. (2022) examined qualitative and quantitative studies on the relationship between (addictive) screen media use and adolescent mental health during the COVID-19 pandemic. The findings highlight that digital media use did not uniformly exert negative effects on adolescents' well-being. It has been found that certain forms of social media engagement, such as one-to-one or one-to-few communication through platforms such as VoIP applications, alleviate loneliness more effectively than the generalised, broadcast-style engagement on social media. It has also been found that stress relief is more likely to occur among adolescents who engage in reciprocal online disclosures within close friendships as opposed to wider, impersonal interactions. Positive online experiences, such as receiving affirmative feedback and engaging with humorous content, contributed to enhanced social connectedness and increased happiness. These findings suggest that digital media served as a valuable coping mechanism for regulating negative emotions stemming from the pandemic's uncertainties and disruptions.

While digital platforms have been instrumental in maintaining social connections, they have also introduced a number of risks, with some young people relying excessively on social media as a way to cope with their anxiety and depression (Ramsey et al., 2022). However, Twenge and Joiner (2020) suggest a distinction between adaptive and maladaptive digital use, noting that moderate, meaningful engagement can boost psychological well-being and foster social interaction. It has been shown that the nature of the impact of digital media was often mediated by familial contexts, such as supportive family environments and a high level of digital literacy, which led to healthier technology use compared to households dealing with economic or emotional hardships.

Cingel et al. (2022) elaborate on concerns from parents, educators, and policymakers regarding the impact of the COVID-19 pandemic and virtual schooling on young people, which have been substantiated by evidence indicating declines in academic engagement, increased media consumption, and deteriorating mental health. Pre-

existing trends in adolescent anxiety and depression intensified, with academic uncertainty contributing further to psychological distress. Although social media provided some adolescents with a means of emotional regulation and social connection during physical isolation, its overuse, especially in fully virtual learning contexts, was associated with problematic internet behaviours. The study by Fruehwirth et al. (2024) finds that a one-hour increase in social media use is associated with a six-percentage point rise in the likelihood of experiencing moderate to severe symptoms of depression and anxiety, which represents increases of approximately 25% and 30%, respectively, compared to pre-pandemic levels. The study highlights the protective role of pre-pandemic resilience and social support, noting that adverse effects were to a significant extent experienced by students who reported being socially isolated before the pandemic. Concretely, students with stronger social connections and friend support increased their social media use early in the pandemic, yet experienced fewer negative outcomes, which suggests a more adaptive use of these platforms.

In line with the digital divide paradigm, mere access to technology does not guarantee equitable digital participation (van Dijk, 2020). Young individuals from lower socio-economic backgrounds frequently encountered barriers such as poor internet connectivity, limited device availability, and insufficient parental guidance, impeding their educational and social engagement (OECD, 2021). Even among those with access to technology, disparities in digital literacy influence the effectiveness of technology use. These inequalities, influenced by broader socioeconomic factors, contributed to divergent experiences of isolation, academic success, and mental health. Therefore, it is necessary to understand digital engagement within a framework that enables a recognition that the experiences of young people online are deeply shaped by their socioeconomic background. It is illustrated by the following quotation:

> "Some managed better, and for some it was certainly much worse. For example, I don't know, it's hard for me to recall a specific situation, but I had good internet for connecting to, um, classes, and now those who didn't have computers or the like, I think it was much, much harder for them."
>
> (Male, high school student, Croatia).

11.1 Online activities

Young people today spend a significant portion of their daily time on the internet, primarily for activities unrelated to education or work. This includes socialising through various platforms, streaming videos, playing games, and exploring content that interests them. The internet has become a central part of their social lives and entertainment, often serving as a primary means of connection and engagement with the world around them outside of formal responsibilities. Figure 11.1. presents the data on how much time young people in Croatia and Slovenia spend daily on the internet.

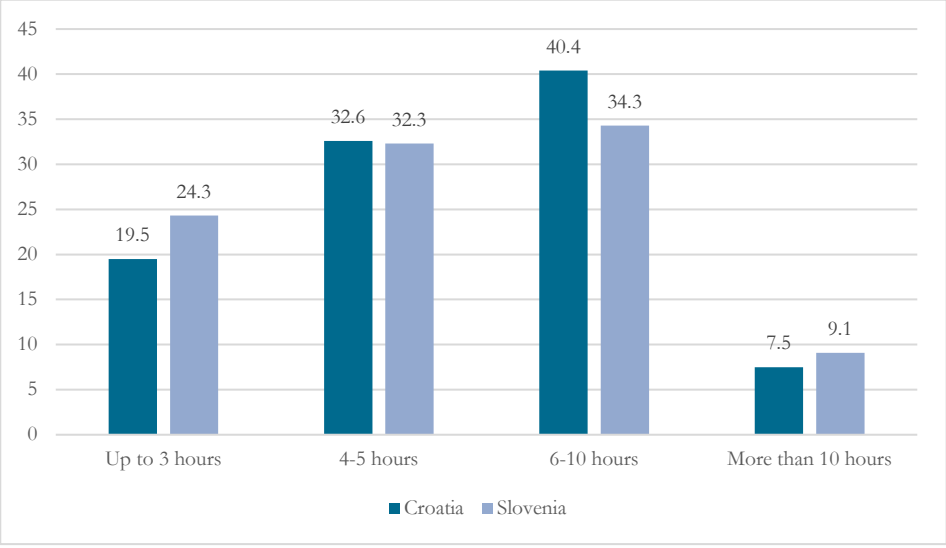

Figure 11.1: Time spent on the internet for purposes not related to school, university, or work (%)

Source: YO-VID22, 2023

A somewhat higher proportion of young Slovenian respondents (24.3%) reported limited usage compared to their Croatian peers (19.5%). On the other hand, in the 6-10 hours bracket, Croatian respondents lead slightly, with 40.4% engaging at this level, compared to 34.3% in Slovenia. At the same time, the 4-5 hours category shows almost the same numbers for the two countries. A slightly higher proportion of Slovenian participants (9.1%) reported spending more than 10 hours per day

online compared to 7.5% in Croatia, which may reflect a small group of high-intensity users in Slovenia. Data for young people in Croatia do not indicate statistically significant age-related differences in regard to screen time, while in Slovenia screen time increases with age. The 16-19 group reports the lowest average usage (5.48 hours), which rises to 5.75 in the 20-24 group and peaks at 6.40 in the 25-29 group, with F=8.556; p=001 while the values of SD are 2.452, 3.155 and 3.175, respectively.

The internet is widely used for communication and social networking, allowing individuals to connect with friends, family, and communities around the world. Social media platforms play a central role in maintaining relationships and sharing experiences. Additionally, both individual and multiplayer gaming are popular activities, providing entertainment as well as opportunities for social interaction and collaboration. Figure 11.2. depicts certain purposes of the internet use among young people in Croatia and Slovenia.

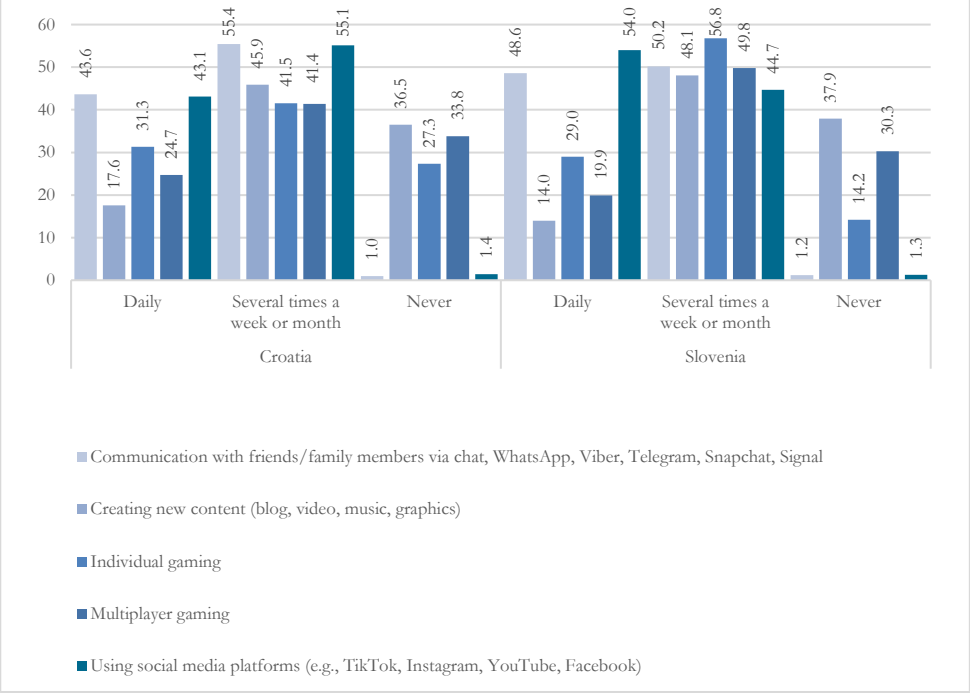

Figure 11.2: Purposes of the internet use (%)
Source: YO-VID22, 2023

Communication with friends and family via applications such as WhatsApp, Viber, or Snapchat is the most frequently performed activity in both countries. A slightly higher proportion of Slovenian respondents (48.6%) engage in this daily compared to Croats (43.6%), although the overall participation rate is high in both. Almost all respondents in both countries use these platforms at least occasionally, with less than 2% reporting they never do. In terms of creating new content (e.g., blogs, videos, music, or graphics), participation is significantly lower. Only 17.6% of Croatian youth report daily engagement in content creation, slightly more than 14.0% in Slovenia. More than one third of respondents in both countries report never engaging in such activities. Individual gaming is also almost at the same share in both countries. However, a significant difference emerges in the proportion of youth who never play such games: 27.3% in Croatia versus only 14.2% in Slovenia. For multiplayer gaming, Croatia also shows slightly higher daily participation (24.7%) than Slovenia (19.9%). However, somewhat more Slovenians (49.8%) than Croats (41.4%) report playing multiplayer games at least occasionally, while almost the same percentage of young people in Slovenia report never engaging in this activity (30.3%) compared to Croatia (33.8%). In Croatia, 43.1% of individuals report using social media on a daily basis. A slightly larger proportion, 55.1%, engage with these platforms several times a week or month, while a negligible 1.4% indicate that they never use social media. By contrast, in Slovenia, daily usage is slightly higher, with 54.0% of respondents accessing social media platforms every day. Meanwhile, 44.7% use social media several times a week or month, and only 1.3% never use these platforms.

Communication with friends and family via applications such as WhatsApp, Viber, or Snapchat is the most frequently performed digital activity among youth in both Croatia and Slovenia, with slightly higher daily engagement reported in Slovenia compared to Croatia.

The analysis revealed several significant gender differences in patterns of internet use and online experiences among adolescents in Croatia, while in Slovenia the differences are not so prominent. Young men reported significantly ($t=3.159$; $p=.002$) more frequent use of the internet for creative content creation, such as blogs, videos, music, and graphics ($M=1.88$; $SD=.716$), compared to their female peers ($M=1.75$; $SD=.701$). This trend continued with gaming activities, where men engaged in individual gaming significantly ($t=14.127$; $p=.000$) more often ($M=2.32$;

SD=.680) than women (M=1.74; SD=.737). Similarly, men reported more frequent (t=15.567; p=.000) participation in multiplayer gaming (M=2.21; SD=.702) than women (M=1.59; SD=.684). The findings for Slovenia also reveal statistically significant gender differences in digital engagement and online experiences among adolescents. Young women reported significantly less frequent use of the internet for creating new content such as blogs, videos, music, or graphics (M=1.71; SD=.675) than their male peers (M=1.80; SD=.683), with t=2.400; p=.017. This trend extended to gaming activities (t (1273) =7.662; p=.000), where women engaged in individual gaming significantly less frequently (M=2.01; SD=.653) than men (M=2.28; SD=.599). Similarly, women reported significantly (t=12.996; p=.000) lower participation in multiplayer gaming (M=1.64; SD=.656) than their male peers (M=2.12; SD=.660).

Concerning the age cohort differences, in Croatia the frequency of individual gaming exhibits a decline with increasing age. Respondents aged 16-19 report the highest mean engagement (M=2.20; SD=.739), followed by those aged 20-24 (M=2.03; SD=.759), and 25-29 (M=1.93; SD=.769). This suggests that younger individuals in Croatia tend to engage more frequently in individual gaming (F=11.832; p=.000). A comparable trend is evident in Slovenia. The 16-19 age group records the most frequent engagement (M=2.28; SD=.627), with a subsequent decline among the 20-24 (M=2.11; SD=.612) and 25-29 (M=2.09; SD=.663) groups, with statistical significance at F=9.892; p=.000.

Engagement in multiplayer gaming also declines with age in Croatia. The youngest group (16-19) reports the most frequent activities (M=2.08; SD=.716), followed by the 20-24 (M=1.87; SD=.747) and 25-29 (M=1.83; SD=.785) groups (F=10.869; p=.000). A similar pattern is observed in Slovenia. The 16-19 group noted the highest engagement (M=2.11; SD=.694), with subsequent decreases among the 20-24 (M=1.84; SD=.656) and 25-29 (M=1.80; SD=.717) age groups (F=21.440; p=.000).

In Croatia, there is no age difference concerning the frequency of communication with friends/family via messaging apps, while in Slovenia it decreases slightly with age. The youngest group are most likely to engage in frequent communication via messaging apps (M=2.54; SD=.508), followed by 20-24 (M=2.51; SD=.522) and 25-29 (M=2.45; SD=.535), with F=4.963; p=.007.

Concerning the socio-economic status, there are no statistically significant differences in the frequency of individual and multiplayer gaming in Croatia, while it varies significantly in Slovenia (F=7.004; p=.001); participants from low SES backgrounds reported the most frequent engagement in individual gaming (M=2.24; SD=.652), followed by those from high SES (M=2.17; SD=.6636), and middle SES (M=2.09; SD=.629). Similarly, multiplayer gaming frequency also differed significantly across SES groups (F=4.309; p=.014). Individuals with low SES reported the most frequent usage (M=1.97; SD=.729), followed by those from high SES (M=1.94; SD=.657) and middle SES (M=1.84; SD=.695).

In Croatia, the frequency of communication with friends or family through messaging platforms such as WhatsApp, Viber, or Telegram varies significantly (F=12.846; p=.000) in regard to socio-economic status, while such differences were not noted in Slovenia. Participants from low SES backgrounds in Croatia reported the lowest frequency (M=2.37; SD=.521), followed by those from middle (M=2.45; SD=.510) and high SES group (M=2.48; SD=506).

Engagement in content creation also differed significantly across SES groups in Croatia, while the differences for Slovenia were not noted. Young people from low SES backgrounds in Croatia reported the highest frequency of creating new content (M=1.88; SD=.716), compared to those from middle SES (M=1.77; SD=.686) and high SES backgrounds (M=1.79; SD=755), with F=3.035; p=.048, which suggests that lower SES participants are more actively involved in generating new media content.

The use of social media platforms exhibited a statistically significant variation across SES groups only in Croatia. Respondents from low SES backgrounds had a mean usage of 2.36, those from middle SES reported a slightly higher mean of 2.47, and high SES participants followed closely with a mean of 2.44 (F=12.074; p=.000).

In Croatia, engagement in content creation varies significantly across socio-economic status (SES) groups, with young people from low SES backgrounds reporting the highest frequency of generating new media content. Additionally, social media usage also differs significantly by SES in Croatia, where middle SES respondents exhibit the most frequent usage, followed closely by high and low SES groups.

11.2 Self-expression in an online world

Young people often have varied preferences when it comes to spending time with friends, with some enjoying face-to-face interactions more, while others feel more comfortable connecting online. In-person meetings offer direct social experiences and a sense of closeness, whereas online interactions provide convenience and the ability to stay connected across distances. Many young people appreciate a balance of both, using online platforms to complement their real-life friendships. The state of young people in Croatia and Slovenia is shown by Figure 11.3.

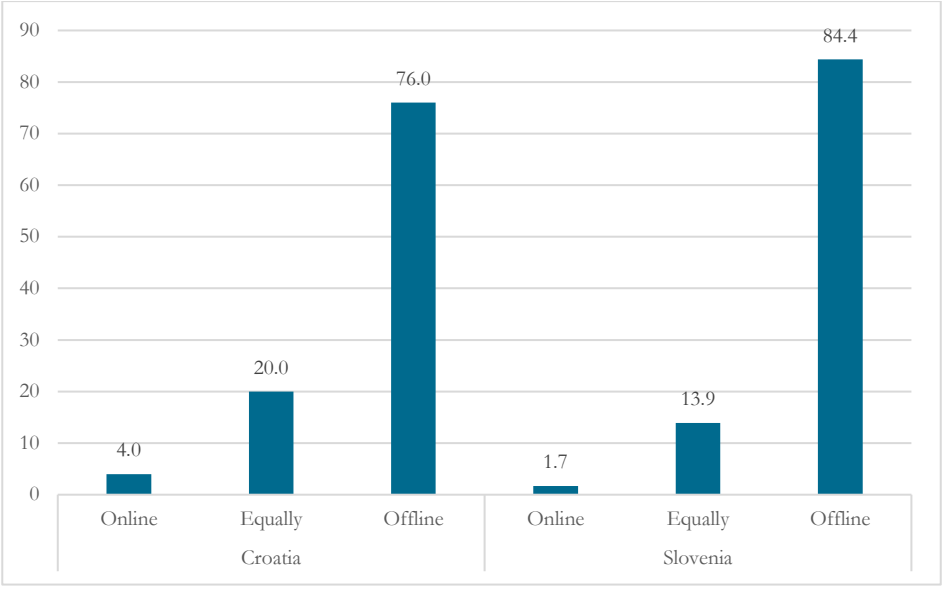

Figure 11.3: Young people who enjoy spending time with friends more in person or online (%)

Source: YO-VID22, 2023

A significant majority of young people in both countries prefer offline (in-person) interactions, although the percentages are higher in Slovenia (84.4%) compared to Croatia (76.0%). Contrarily, Croatian respondents are slightly more likely to favour online interactions, with 4.0% indicating a preference for spending time with friends online, compared to only 1.7% in Slovenia. At the same time, a higher proportion of Croatian youth reports enjoying both equally, in comparison to their Slovenian peers.

In terms of social preferences in regard to sociodemographic characteristics, young men in Croatia showed a somewhat stronger inclination (t=3.934) towards in-person socialising (M=1.34; SD=.565) in comparison to women (M=1.22; SD=.486); p=.000. Men also reported greater ease in expressing themselves online as opposed to face-to-face (M=1.83; SD=.795), than young women (M=1.71; SD=.757), with t=2.693; p=.007. In terms of social preferences, young women in Slovenia expressed a slightly higher (t=4.237; p=.000) inclination towards in-person interaction (M=1.12; SD=.373) compared to men (M=1.22; SD=.456).

We did not establish statistically significant differences of socialising preferences among young people in Croatia in regard to their age. However, in Slovenia the mean values decrease slightly with age; 16-19 (M=1.20; SD=.469), 20-24 (M=1.20; SD=.451), and 25-29 (M=1.13; SD=.352), indicating as small but statistically significant (F=3.344, p=.036).

SES showed to be related to the statistically significant differences. In Croatia, the enjoyment of in-person versus online social interaction (F=3.437; p=.032) varies in a way that respondents from low SES backgrounds reported the highest average score (M=1.33; SD=.584), followed by those from middle SES (M=1.26; SD=.516) and high SES (M=1.23; SD=.458). At the same time, preference for socialising with friends in person or online in Slovenia varies in a way that the highest frequency of online interactions can be associated with the low SES youth (M=1.24; SD=.486), then middle SES (M=1.15; SD=.403), and high SES young people (M=1.11; SD=.333), with statistically significant differences at F=8.357; p=.000.

Young people engage with the internet in different ways, with some actively posting, commenting, and interacting, while others use it more passively by simply viewing content. Many feel that their presence and influence online can be significant, yet experiences vary widely. While the internet offers connection and support, it can also expose young people to unpleasant experiences such as cyberbullying, social exclusion, and pressure to conform, which can cause distress and negatively affect their mental well-being. Some variations among young people in Croatia and Slovenia are presented in Figure 11.4.

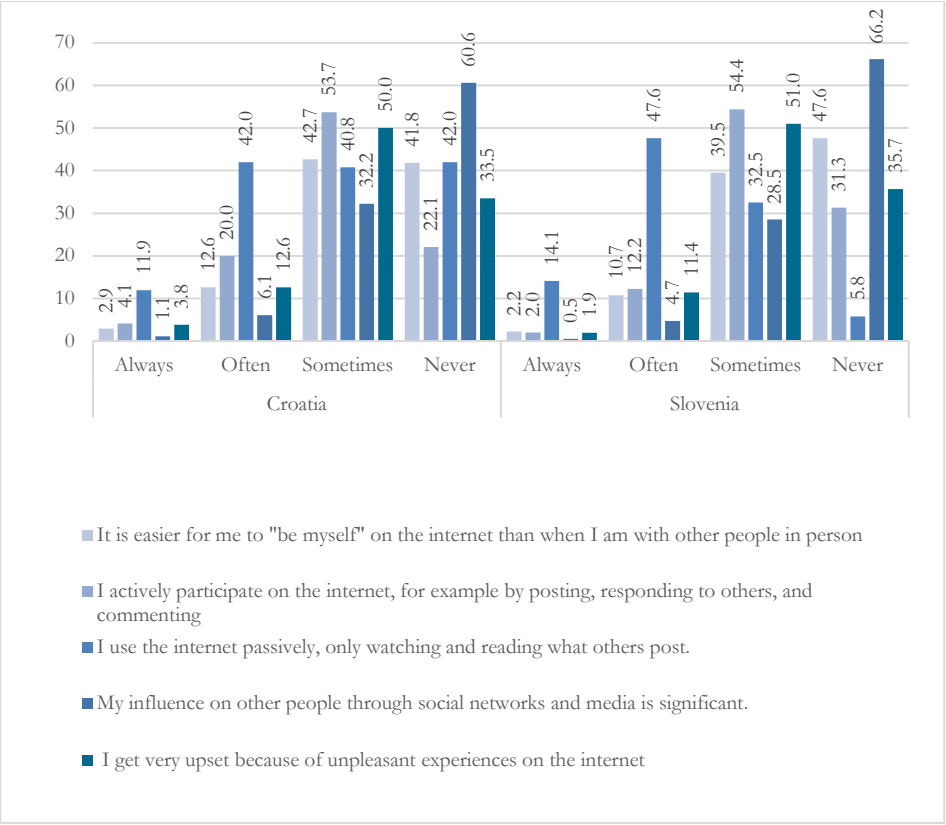

Figure 11.4: Some aspects of the internet use among young people in Croatia and Slovenia (%)

Source: YO-VID22, 2023

Regarding the feeling of being authentic, Croatian youth are slightly more inclined to report that they can "be themselves" online in comparison to the youth in Slovenia. At the same time, higher proportion of Slovenian respondents (47.6%) report never feeling this way, compared to 41.8% in Croatia. In terms of active participation, Croatian respondents report higher levels overall, with 24.1% stating they actively post or engage (always or often), versus 14.2% of youth in Slovenia. Furthermore, Slovenian youth are more likely to say they never participate actively (31.3%) than their Croatian peers (22.1%), indicating a more reserved or observational approach to online engagement. Passive internet use is more common in Slovenia, where 61.7% of youth report doing so often or always, compared to 53.9% in Croatia. However, among those who never engage passively, 42.0% of

Croatian youth report never doing so, compared to only 5.8% in Slovenia, which suggests more mixed habits in Croatia and a stronger trend toward passive consumption in Slovenia. When asked about their influence on others through social media, the majority in both countries do not perceive themselves as influential. Finally, in response to negative experiences on the internet, roughly similar proportions of youth in both countries report sometimes feeling very upset.

With regard to online behaviours, young women in Croatia reported somewhat higher (t=-4.205) levels of passive internet use with (t=-1.990; p=.047), including reading or viewing others' content (M=2.64; SD=.768), than men (M=2.57; SD=.760). In Slovenia, young women also reported higher levels of passive internet use, such as viewing and reading others' posts without engaging (M=2.80; SD=.763), compared to men (M=2.61; SD=.784); p=.000. Additionally, women perceived their social media influence to be significantly lower (M=1.35; SD=.596) than that of men (M=1.43; SD=.607), with t=2.276; p=.023.

In terms of perceived online impact (t=2.793; p=.005), young men in Croatia considered their influence on social media to be more significant (M=1.54; SD=.697) compared to that of women (M=1.42; SD=.619). Regarding emotional responses, young women reported higher levels (t=-5.370) of distress from negative online experiences (M=2.00; SD=.758) than their male peers (M=1.74; SD=.767); p=.000. Likewise, in relation to emotional well-being, young women in Slovenia reported significantly higher levels (t=-5.455; p=.000) of distress resulting from unpleasant online experiences (M=1.91; SD=.719) when compared to men (M=1.69; SD=.692). These findings suggest there are significant gender differences in digital behaviour that can be linked to the differing emotional impacts associated with online engagement.

In Croatia, statistically significant differences (F=6.290; p=.002) emerged in self-perception across socio-economic status groups; respondents from low SES backgrounds were more likely to agree that it is easier to "be oneself" online (M=1.87; SD=.807), compared to those from middle SES (M=1.73; SD=.771) and high SES backgrounds (M=1.67; SD=.728). Similar results were noted for youth in Slovenia (F=3.423; p=.033), where respondents from low SES backgrounds are more likely to feel well in the online settings (M=1.75; SD=.794), followed by those from middle SES (M=1.66; SD=.739) and high SES (M=1.59; SD=.716).

A component that indicates lowered subjective well-being, emotional distress due to negative online experiences, varies significantly regarding the SES in both countries. Participants from the low SES group in Croatia reported the highest levels of emotional distress (M=2.01; SD=.810), followed by those from the middle SES group (M=1.82; SD=.754), and the high SES group (M=1.72; SD=.710), with differences significant at F=12.857; p=.000. Similarly, respondents from the low SES group in Slovenia were more likely to experience emotional distress in the online settings (M=1.88; SD=.778), followed by those from the middle SES group (M=1.78; SD=.681), and the high SES group (M=1.70; SD=.670), with F=4.949; p=.007). These data indicate a higher vulnerability to negative online experiences among individuals from lower socio-economic backgrounds, which calls for tailored-made policy measures aimed at supporting young people in their navigation in an online reality.

The component that suggests active or passive usage of the internet among young people showed statistically significant differences in regard to SES only among young Slovenians. Active participation online, such as posting, replying, or commenting, indicates that young people from the low SES group reported the highest level of active engagement (M=1.93; SD=.750), followed by those from high SES (M=1.83; SD=.685), and middle SES (M=1.81; SD=.677). This difference was statistically significant (F=3.879; p=.021), suggesting a modest influence of SES on active online behaviours. Passive internet use, defined as primarily viewing and reading others' posts without direct interaction, also varied across SES groups. Individuals from the middle SES group in Slovenia reported the highest levels of passive use (M=2.77; SD=.742), followed by those from low SES (M=2.64; SD=.807), and high SES (M=2.59; SD=.826), with statistical significance at F=5.590; p=.004, which indicates slightly higher passive consumption among middle SES respondents. Perceived influence on others through social media platforms also demonstrated statistically significant differences in regard to SES (F=6.711; p=.001). Respondents from low SES backgrounds noted the highest perceived influence (M=1.49; SD=.674), compared to high SES (M=1.39; SD=.586), and middle SES (M=1.35; SD=.562).

Croatian youth are more likely than Slovenian youth to feel comfortable being themselves online and to engage actively on social media, while Slovenian youth tend to be more reserved and passive in their online behaviours. Gender differences reveal that young women generally exhibit higher passive internet use and experience higher emotional distress from negative online encounters than young men in both countries.

11.3 The issue of cyberbullying, problematic use of the internet and social media and the impact of COVID-19

The digital revolution has fundamentally transformed youth social interaction, creating new spaces for communication and relationship development. While digital technologies offer numerous benefits, they have also given rise to cyberbullying, intentional and repeated harm inflicted through electronic means (Tokunaga, 2010). This phenomenon has emerged as a significant concern affecting adolescent well-being globally, especially after the COVID-19 pandemic that has dramatically altered the social landscape, particularly affecting youth and young adults' daily lives, including digital media use patterns among young people.

As indicated by various research, the COVID-19 pandemic has significantly influenced youth's internet and social media usage, with research indicating that young individuals generally increased their utilisation of social media platforms and streaming services during periods of lockdown (Fernandes et al., 2020; Tuck & Thompson, 2021). This increased utilisation had both positive and negative effects on subjective well-being. While digital platforms provided crucial means for maintaining social connections during physical isolation (Cauberghe et al., 2021), increased reliance on the internet and social media has also raised concerns about problematic use patterns. For instance, individuals who scored high on gaming addiction, compulsive internet use, and social media use reported higher levels of depression, loneliness, escapism, poor sleep quality, pandemic-related anxiety (Fernandes et al., 2020), lower self-esteem, and increased incidence of eating disorders (Ramsey et al., 2023).

The increased use of the internet and social media also exposed youth to potential risks, such as cyberbullying, misinformation, and comparison with unrealistic online portrayals. Namely, research indicates that higher internet and digital technology

usage increases adolescents' likelihood of experiencing online victimisation, particularly cyberbullying (Choi et al., 2019). As Bailin and colleagues (2014) explained, the rise of the internet and social media has made it easier for students to bully their peers, with adolescents representing the majority of cyberbullying victims (Meter & Bauman, 2015). Lastly, during the pandemic, the boundaries between adaptive and maladaptive social media use became increasingly blurred, as digital platforms served both as essential communication tools and potential sources of psychological distress (Twenge & Campbell, 2018; Twenge et al., 2018).

Researchers have conceptualised cyberbullying as an extension of traditional bullying that occurs through digital platforms. Smith et al. (2008) define cyberbullying as "an aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly and over time against a victim who cannot easily defend him or herself" (p. 376). Unlike traditional bullying, cyberbullying is characterised by several unique features: potential anonymity of perpetrators, ability to reach a wide audience, permanence of digital content, reduced supervision in digital spaces, and difficulty escaping the harassment (Kowalski et al., 2014). These characteristics may intensify the impact of cyberbullying compared to traditional forms of bullying (Slonje & Smith, 2008).

Cyberbullying manifests in various forms, including sending offensive, rude, or insulting messages, posting derogatory information about someone online, pretending to be someone else online to damage their reputation, sharing someone's secrets or embarrassing information, deliberately excluding someone from online groups, repeated harassment and threats causing fear for safety, sharing embarrassing or manipulated images/videos (Willard, 2007). Social media platforms represent the most common venues for cyberbullying incidents, followed by messaging applications, online gaming environments, and email services (Whittaker & Kowalski, 2015). Recent research has identified emerging platforms like TikTok, Snapchat, and Discord as significant spaces where cyberbullying occurs (Anderson, 2018; Vogels, 2021).

Figure 11.5. presents the incidence of different negative experiences related to internet use in the past month among youth in Slovenia and Croatia.

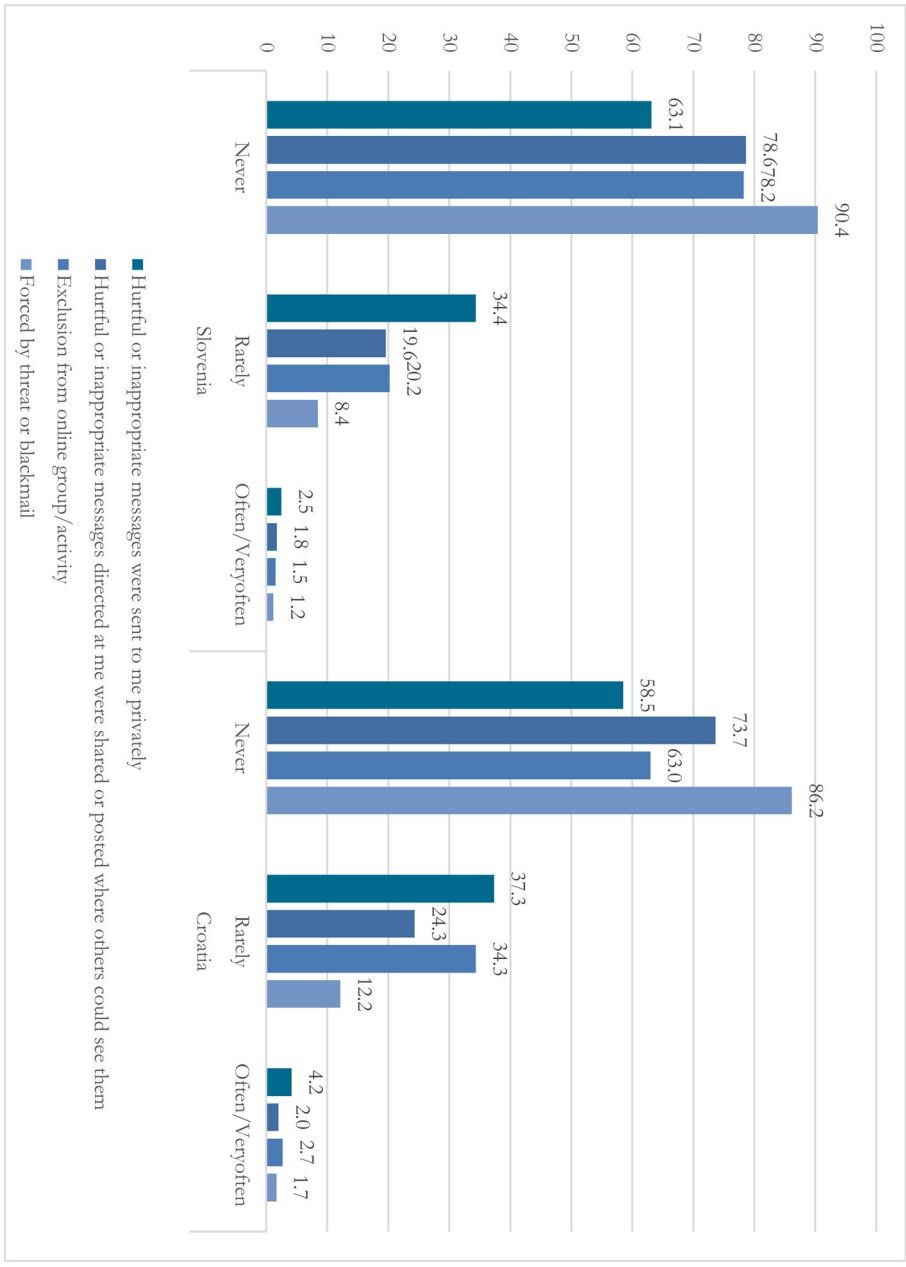

Figure 11.5: Prevalence of various forms of cyberbullying among youth in Slovenia and Croatia (%)

Source: YO-VID22, 2023

As can be seen from Figure 11.1, the prevalence of cyberbullying is highly dependent on the specific form of the cyberbullying act. The most frequent form experienced by youth, both in Slovenia and Croatia, was "Hurtful or inappropriate messages were sent to me privately", but all experiences were significantly more common among young Croats ($p<0.01$; see Table 11.1.).

Table 11.1: Mean differences for being exposed to cyberbullying, Croatia vs. Slovenia

Item	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval
Private harmful or inappropriate messages	2.826	2462.178	.005	.063	.022	.019 - .107
Public harmful or inappropriate messages	2.745	2463.051	.006	.052	.019	.015 - .090
Excluded from online group/activity	8.169	2383.308	.000	.164	.020	.125 - .204
Forced to do something due to threats or blackmail	3.127	2440.824	.002	.047	.015	.018 - .077

Source: YO-VID22, 2023

Further analysis revealed that experiencing cyberbullying acts was significantly associated with screen time (Croatia: $0.07 < r < 0.11$; $p < 0.05$; Slovenia: $0.07 < r < 0.11$; 0.05), thus corroborating results from other studies who had found that greater internet use is associated with increased cyberbullying risk (e.g., Gámez-Guadix et al., 2016).

Furthermore, results indicated that being exposed to cyberbullying was not consistently associated with either age or gender. Specifically, while in Slovenia being older meant experiencing less cyberbullying ($p<0.05$), in Croatia there was no relationship. Just the opposite was the case in relation to gender - while in Slovenia there was no association between exposure to cyberbullying and gender, a significant negative association was found in Croatia, indicating that young males are more often victims of cyberbullying acts. The strongest association ($r=-0.13$; $p <0.001$) was found between being young male in Croatia and "Forced to do something due to threats or blackmail". Results from our study thus support a general conclusion that when it comes to gender and cyberbullying, the results are mixed. Specifically,

while some studies suggesting girls are more likely to be victims (Kowalski et al., 2019), others found no significant gender differences (Barlett & Coyne, 2014). Lastly, since we used the sample of youth, aged 16 +, it is possible that our data do not capture the age effect found in other studies, since cyberbullying typically peaks during early adolescence (12-15 years) (Tokunaga, 2010). The psychological impact of cyberbullying victimisation is well-established, with meta-analyses by Kowalski et al. (2014) and Fisher et al. (2016) demonstrating significant links to depression, anxiety, low self-esteem, suicidal ideation, substance abuse, and somatic symptoms, while longitudinal studies indicate these effects can persist for years (Rose and Tynes, 2015; Gámez-Guadix et al., 2013). Additionally, cyberbullying adversely affects educational outcomes and social functioning, being associated with poorer academic performance, school avoidance, social isolation, reduced social competence, and increased social anxiety, as shown by Kowalski et al. (2019), Gardella et al. (2017), and Wright (2017).

The occurrence of cyberbullying significantly varies depending on the specific type of incident. The most common form faced by youth in both Slovenia and Croatia was receiving hurtful or inappropriate messages privately, yet all forms of cyberbullying were notably more prevalent among young Croats.

11.4 Problematic use of the internet and social media and the impact of COVID-19

Problematic internet use (PIU), sometimes referred to as internet addiction, is characterised by excessive or poorly controlled preoccupations, urges, or behaviours regarding internet use that lead to impairment or distress (Weinstein & Lejoyeux, 2010). Similarly, problematic social media use (PSMU) involves excessive engagement with social media platforms that interferes with daily functioning and well-being (Andreassen & Pallesen, 2014). One commonly accepted definition describes PSMU as "unhealthy excessive social media use behaviours characterised by a lack of control over behaviour and persistent behaviour despite adverse life consequences" (Lv & Wang, 2022). This characterisation aligns with findings from Raudsepp (2019), who delineated problematic social media usage not just by the quantity of time spent online but through a range of behaviours, including excessive concern about social media interactions and an overwhelming drive to engage (see also Finserås et al., 2023). Such behaviours can inhibit participation in other vital

activities, such as studies, interpersonal relationships, and essential aspects of mental well-being (Raudsepp & Kais, 2019; Shannon et al., 2024).

Figure 11.6. indicates the ability of youth in Slovenia and Croatia to exercise control over their internet use.

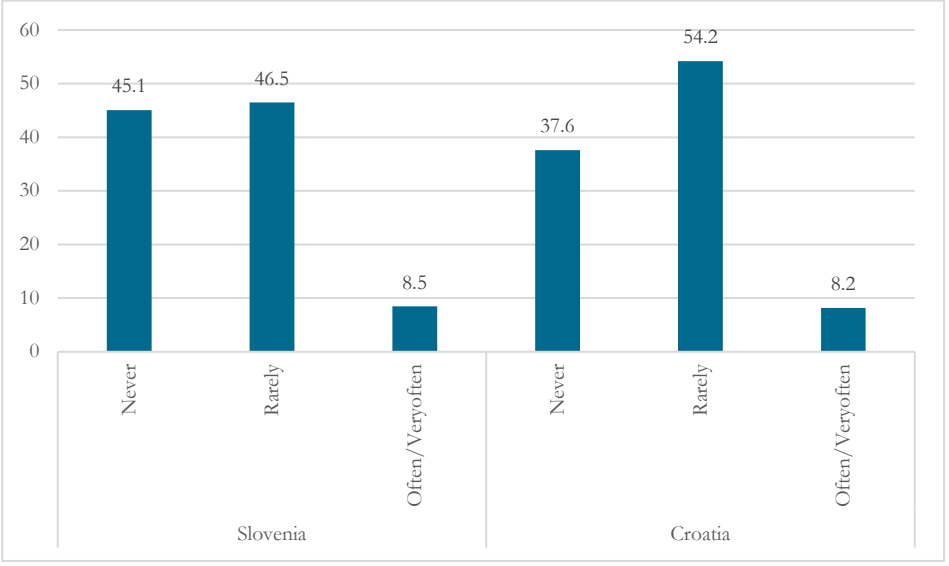

Figure 11.6: The ability of youth in Slovenia and Croatia to control their use of the internet (%)

Source: YO-VID22, 2023

The results show that less than a half of youth reported having no issues in exercising control over their internet use, suggesting that more than a half of youth in Slovenia and Croatia is manifesting at least some sort of internet addiction. This lack of control is especially worrying in Croatia where only 38% experience no problem in controlling internet use. Expectedly, not being able to exercise control over one's use of internet was significantly associated with screen-time ($p<0.05$), but also with being a young woman ($p<0.05$), being of a younger age in Slovenia, and residing in lower SES household. It was also significantly associated with parent-child conflict. Specifically, when youth was asked what best described their relationship with their parents, those who had internet control issues tended to describe this relationship as being full of conflicts and strain ($p<0.01$).

Relatedly, 45% of youth in Slovenia and 62% Croatia reported that they have experienced a situation where they failed to perform their school/family/work obligations due to time spent on-line, which, as indicated, is another maladaptive pattern of excess/problematic internet and social media use. Similar percentages were obtained when asked about experiencing fights with their parents and friends due to their on-line time. Specifically, 40.4% of young Slovenians and 48.5 % of young Croats experienced some sort of conflict with their parents or friends because of their time on the internet (Figure 11.7.).

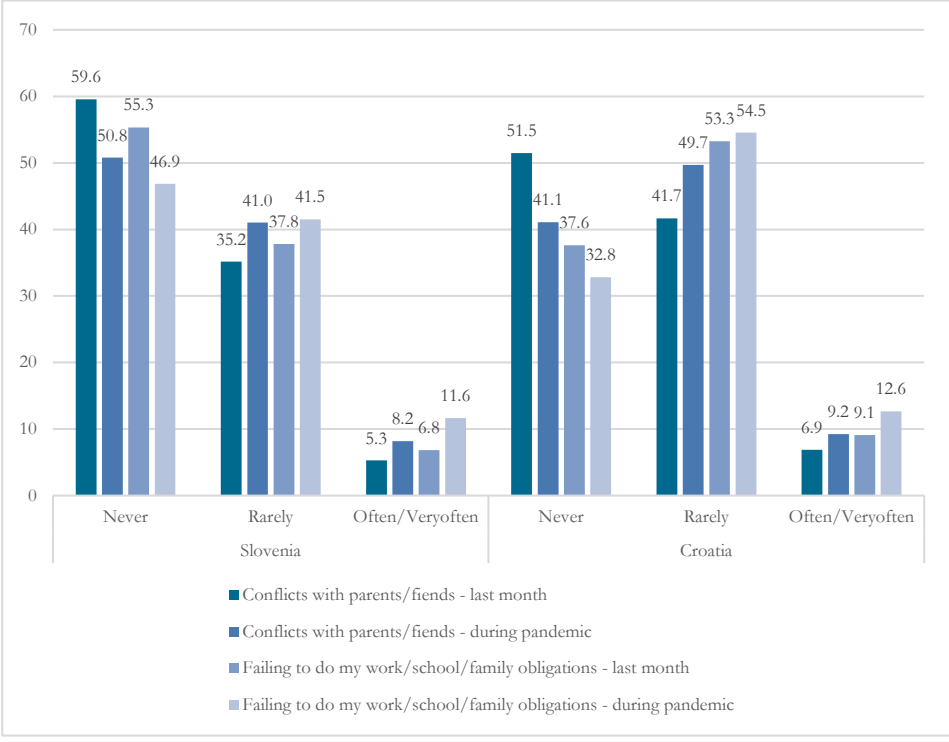

Figure 11.7: The impact of on-line time on social conflicts and obligations, last month vs COVID-19 pandemic, by country (%)
Source: YO-VID22, 2023

These maladaptive patterns, measured at two time points (during the last month/during the pandemic), were significantly associated with screen time ($p<0.05$), young age ($p<0.001$) and being from a lower SES household. Being a woman was not associated with this set of indicators of PISMU in Slovenia, while

in Croatia being male increased these patterns, suggesting that young females have bigger issues with control, but that these issues do not translate into more maladaptive behaviour patterns.

The results in Figure 11.7 also show that the situations used to indicate problematic internet and social media use (PISMU) were more common during the COVID-19 pandemic. This is further demonstrated by Figure 11.8., which shows another aspect of PISMU - escapist use of internet and social media.

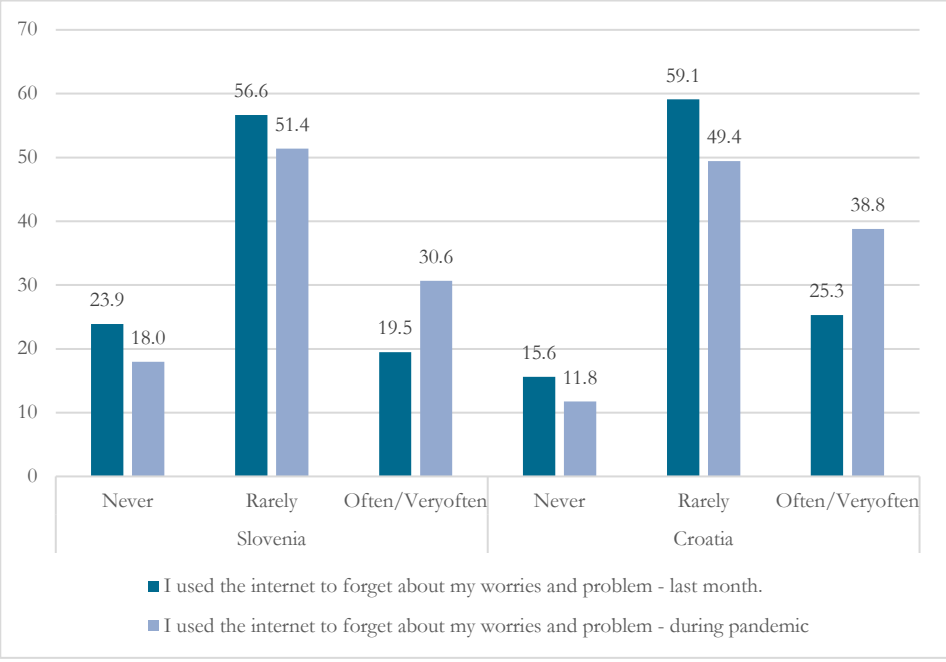

Figure 11.8: Escapist use of internet and social media - last month and during the pandemic, by country (%)
Source: YO-VID22, 2023

Taken together, these results suggested that increased reliance on the internet and social media, which was amplified by the COVID-19 pandemic, increases the problem of losing control (addiction), of conflictual interactions with youth parents/friends, of youth's daily functioning and of escapism. This is supported by research, which has consistently documented increases in both internet use and problematic internet behaviours during the COVID-19 pandemic. A systematic

review and meta-analysis by Sun et al. (2021) reported a pooled prevalence of internet addiction during the COVID-19 pandemic of 39.8%, markedly higher than pre-pandemic estimates of 5-15% (Kuss et al., 2014), with notable heterogeneity across populations and regions. Specifically, social media use increased substantially, with Zhao and Zhou (2021) documenting an average daily rise of 1-2 hours during lockdowns, and problematic use escalating by 43% among young adults (Siste et al., 2020). Large-scale studies corroborate these trends, showing increases in internet addiction among Chinese (Dong et al., 2020) and Taiwanese adolescents (Chen et al., 2021), alongside significant rises in social media use and problematic behaviours in Canadian youth (Ellis et al., 2020; Zhao & Zhou, 2021). Age-specific patterns emerged, with younger adolescents showing greater increases in problematic gaming and older adolescents in social media use (Drouin et al., 2020). Educational context also influenced the outcomes, as remote learning was associated with a 57% higher likelihood of excessive screen time (López-Bueno et al., 2021). Longitudinal data indicated persistence of elevated problematic use beyond lockdowns, with levels remaining 21.7% above baseline 18 months later (Teng et al., 2021), suggesting enduring shifts in digital engagement among youth.

These trends of greater reliance on the internet and social media (and related use) were also clearly detected in our study. For example, if young Slovenians spent on average 4.6 hours per day on the internet in 2018, this has increased to 5.9 hours in 2023. The increase was even greater in Croatia - from 3.5 hours per day to 6.1 hours. Relatedly, both in Slovenia and Croatia, only around one fifth of youth reported no change in the internet and social media use (ISMU) during the COVID-19 pandemic (i.e., four fifths reported increased in ISMU) and only 4% of young Slovenians and 3% of young Croats reported that the internet and social media were not important to them during the pandemic.

Last, but not the least, Fernández-de-Las-Peñas et al. (2021) reported that socioeconomic status moderated the relationship between pandemic stressors and problematic technology use, with disadvantaged youth showing greater vulnerability to developing maladaptive patterns. The role of SES was also manifested in our study - all three measures of PISMU during the pandemic (having experienced fights, forgoing obligation, escapism) were significantly associated with lower SES, both in Slovenia and Croatia ($p<0.05$).

Half of the youth in Croatia and Slovenia are manifesting some type of internet or social media addiction.

11.5 Conclusions and recommendations

The COVID-19 pandemic fundamentally transformed young people's daily lives, intensifying reliance on digital technologies for education, social interaction, and leisure. Research indicates a marked increase in the internet and social media use, with problematic engagement posing significant risks to psychological well-being, social development, academic performance, and family dynamics. The interplay between pandemic-related stressors and digital behaviour was complex and bidirectional, as excessive online activity both alleviated and exacerbated mental health difficulties. While digital platforms served as crucial tools during isolation, risk factors such as pre-existing vulnerabilities, parental influences, and educational disruption heightened susceptibility to harmful use. Conversely, protective influences like digital literacy and parental guidance mitigated these effects. Intervention strategies demonstrated varied success, underscoring the need for sustained, evidence-based approaches. As digital habits formed during the pandemic may persist, distinguishing between adaptive and maladaptive use is vital for fostering youth digital well-being in a post-pandemic world.

The comparative analysis of digital engagement among youth in Slovenia and Croatia, based on the YO-VID22 survey, reveals broadly similar patterns of usage, with nuanced differences shaped by age, gender, and socio-economic status. In both countries, communication via messaging applications is the most common activity, while content creation remains comparatively limited. Slovenian youth report slightly higher rates of limited use and high-intensity screen time, whereas Croatian respondents show greater daily engagement in moderate use categories. Social media usage is widespread in both contexts, though daily interaction is somewhat more frequent among Slovenians. Gaming patterns are also largely similar, with minor variations in frequency and type of engagement.

Statistically significant differences emerge in relation to demographic factors. In Slovenia, screen time increases with age, whereas in Croatia it remains consistent across age groups. Gaming and content creation decline with age in both countries,

while gender differences in digital activity are more pronounced in Croatia, where young men are significantly more engaged than women, particularly in gaming and creative content. Socio-economic status plays a more influential role in Croatia, where it is linked to variations in communication, content creation, and social media use. In contrast, Slovenia shows fewer SES-related disparities, although lower SES youth demonstrate slightly higher gaming engagement.

Young people in both Slovenia and Croatia demonstrate a strong preference for in-person social interaction, although this tendency is more pronounced among Slovenians. Croatian respondents, by contrast, are slightly more open to online socialising or show a more balanced preference for both modes of communication. Gender plays a role in shaping these preferences, with Croatian men more inclined toward in-person interaction than women, and men across both countries expressing greater comfort with online self-expression. In Slovenia, young women show a stronger preference for in-person socialising than their male counterparts. Age does not significantly affect these preferences in Croatia, but in Slovenia, older respondents show a slight decrease in preference for in-person engagement. Socio-economic status (SES) also influences social preferences in both countries, with lower SES youth tending to favour face-to-face interaction more than those from higher SES backgrounds.

The needs of youth and the inadequacy of support for young people who engaged more actively with the online world, particularly during the period of limited social contact imposed by the pandemic, is reflected in the following quotation from the focus group:

> I just wanted to add something; my sister was in her final year of secondary school at the time, and I remember how angry and upset she was. Those final three months of school were suddenly happening through a screen. At that point, there wasn't even Zoom or anything similar. They didn't know whether they would have a prom, what would happen with final exams, none of it. I remember she was under a lot of stress because nothing was clear. The school, in my opinion, didn't offer any real support, they weren't accommodated at all. There was no guidance or preparation; the students had to manage everything on their own, including preparations for final exams. I believe the situation was particularly difficult for final-year students.
>
> (Female, high school student, Croatia)

Patterns of online behaviour further distinguish the two countries, particularly in levels of active and passive engagement. Croatian youth are more likely to actively participate in online spaces, such as by posting or commenting, whereas their Slovenian peers are more often passive observers. This trend is especially evident among Slovenian women, who report the highest levels of passive internet use. In both countries, women generally perceive themselves as less influential on social media than men, and also report experiencing greater emotional distress from negative online encounters. These emotional impacts appear more acute among young women, reflecting a gendered dimension in how online environments are experienced. Despite these challenges, most young people in both countries do not see themselves as influential on social platforms, suggesting a modest perception of digital agency among the broader youth population.

Socio-economic background plays a significant role in shaping self-perception and emotional well-being in online contexts. Young people from lower SES groups in both countries are more likely to report that they can "be themselves" online, yet they also experience higher levels of emotional distress from negative online experiences. These findings highlight a complex relationship between digital comfort and vulnerability among more disadvantaged groups. In Slovenia, SES is also linked to differences in levels of active and passive online use, with lower SES youth engaging more actively and middle SES youth showing the highest passive use. Additionally, perceived influence on social media varies with SES, as lower SES individuals report slightly higher self-perceived impact.

As the concern over problematic internet use among youth escalated during the COVID-19 pandemic, a range of intervention strategies emerged, many of which demonstrated promising outcomes. Digital literacy and education programmes tailored to remote delivery, such as the school-based digital citizenship initiative by Throuvala et al. (2021), achieved significant reductions in problematic social media behaviour. Effectiveness was enhanced when these programmes focused on skill development rather than restriction (Chen et al., 2021). Family-based strategies proved similarly beneficial; Tang et al. (2021) found structured family media plans, which typically include rules about screen time, content restrictions, and designated media-free times, were linked to lower levels of problematic use, even under lockdown conditions, while parent training programmes improved mediation capabilities (Cauberghe et al., 2021). These findings support policy

recommendations advocating for parental empowerment workshops and stronger home-school collaboration in managing digital engagement (Lakhdir et al., 2022). In the educational context, structured schedules, screen breaks, and offline tasks were associated with reduced problematic internet use (López-Bueno et al., 2021), and teacher training emerged as a preventive measure (Chen et al., 2021).

Psychological and peer-based interventions were also adapted effectively for pandemic conditions. Online cognitive-behavioural therapy significantly reduced problematic internet symptoms (Yang et al., 2022), and mindfulness-based programmes mitigated both excessive social media use and associated anxiety (Teng et al., 2021). Peer mentoring approaches, as assessed by Throuvala et al. (2021), leveraged adolescents' social dynamics to achieve behavioural improvements, aligning with findings on the strong influence of peer norms (Orben et al., 2020). Technological tools, including screen time management apps and platform-integrated features, also yielded measurable reductions in problematic use (Li et al., 2021; Throuvala et al., 2021). Notably, the most successful interventions adopted balanced approaches, prioritising meaningful engagement over mere reduction, and addressing youth needs for connection and support during isolation (Orben et al., 2020). This multifaceted, nuanced strategy reflects a growing recognition of both the risks and essential roles of digital technologies in young people's lives.

Following the results and the secondary sources analysis, we proposed the following set of recommendations:

- Measures to promote balanced digital engagement should be initiated, given the age, gender, and socio-economic disparities in digital engagement. Tailored strategies should be developed to encourage more inclusive and balanced use of digital technologies. In Croatia, initiatives should focus on increasing digital confidence and participation among young women, particularly in areas such as content creation and gaming, where gender gaps are most pronounced. Similarly, efforts in Slovenia could aim to support young people from lower SES backgrounds in developing digital skills while promoting healthier digital habits among high-use groups.
- Correlation of gender and SES with the emotional distress linked to online experiences call for enhanced online safety education and accessible mental health support. Policymakers and educators should prioritise interventions that

equip young women and low SES youth with tools for managing negative online interactions and building resilience. Social media platforms and youth organisations could also be encouraged to create supportive online spaces where all young people feel empowered and safe to engage authentically.

- Addressing cyberbullying and problematic internet use among adolescents requires a multifaceted approach that includes education, technology, family support, and policy interventions. Develop and Implement Comprehensive Prevention Strategies. School programmes that focus on developing students' digital skills and promoting responsible online behaviour have shown greater effectiveness than those that rely solely on restricting access. These initiatives should be designed to function both in traditional classroom settings and through remote learning platforms to ensure resilience during periods of disruption.
- Policy measures should aim to empower youth, especially passive users and those from disadvantaged backgrounds, in order to enhance youth perception of themselves as active contributors in the digital world. This includes promoting media literacy, encouraging responsible content creation, and raising awareness of the social impact of online behaviour. Bridging the gap between passive consumption and active, meaningful engagement can help build a more equitable and participatory digital culture among young people.
- Youth agency and inclusive policy design should be enhanced in order to achieve youth empowerment so they are able to take an active role in shaping online culture, which is essential for fostering respectful and inclusive digital spaces. Prevention efforts should include opportunities for youth to co-create and lead initiatives that promote positive online behaviour, recognising them as key contributors to solutions rather than merely subjects of concern.
- Parental involvement and parents-school cooperation should be enhanced through structured media education plans that establish clear rules, technology-free times, and open communication, which has proven effective in supporting more meaningful internet use. Training and resources for parents can improve their ability to guide online behaviour, and stronger collaboration between schools and families can create a unified framework for digital well-being.
- Psychosocial support and peer engagement at the school level should be fostered, with psychological support tailored to youth, such as mindfulness techniques. Additionally, peer mentoring models that encourage older students

to guide younger ones can positively influence behaviour, especially in areas like social media use, where peer dynamics are especially influential.

– Continuous research and responsive policy making should be encouraged in order to create flexible and data-informed policies that could ensure responsiveness to new challenges and grounded in the latest evidence on adolescent development and digital behaviour.

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