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The disinformation ecosystem and efforts at countering disinformation among Slovak youth

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Abstract

The disinformation ecosystem and efforts at countering disinformation among Slovak youth

This study addresses the research problem of the increasing exposure of Slovak youth to the disinformation ecosystem and its impact on their ability to critically evaluate information. The research aims to (1) assess the current impact of disinformation on young people in Slovakia and (2) identify effective interventions to mitigate its negative effects. The study applies a qualitative research design combining primary empirical research conducted among secondary school students with qualitative content analysis (n = 500, Košice and Prešov regions, 2023) and documentary analysis of secondary sources. Primary research findings reveal no evidence of extremist tendencies among respondents, yet notable subgroup differences were identified: secondary grammar school students and female respondents demonstrated greater critical awareness and openness to plurality of opinion. The study concludes that strengthening media literacy and critical thinking through education and civic engagement is essential for enhancing resilience to disinformation and supporting democratic stability.

Keywords: disinformation, disinformation ecosystem, youth, media literacy, Slovakia

Over the last decade, there has been an increase in the spread of disinformation in the Slovak online space, which poses a challenge for society and especially for the younger generation. This trend is related to the increasing availability of digital technologies, the growth of social networks and changes in the way young people receive and process information. Young people are among the most active users of media and social platforms and are therefore often exposed to a large amount of false or manipulative information that can influence their perception of reality, their trust in democratic institutions and their overall attitudes towards social issues. The long-term impact of distorted information can have a negative effect on their value system, civic attitudes and ability to navigate democratic discourse. The disinformation ecosystem, which includes several different actors operating on social networks using algorithms and information bubbles, helps to reinforce polarisation and susceptibility to extremism. This phenomenon requires a comprehensive approach that, in addition to better regulation of the online space, also includes media education aimed at developing critical thinking among young people so that they can be effectively protected from the negative

consequences of the wave of disinformation. This article therefore analyses the disinformation ecosystem in Slovakia and its impact on young people, as well as possible solutions in this area. Although the issue of the impact of disinformation on young people is the subject of growing interest among experts, it remains a relatively unexplored area in the Slovak context. The lack of empirical data on how young people respond to disinformation content and what factors increase their vulnerability poses a challenge for both research and the development of preventive strategies.

This study employs several key concepts, the definition of which is essential for a precise understanding of the research problem. The following definitions also reflect the prevailing understanding in current international research. Disinformation is information that is false and intentionally created with the aim of harming a person, social group, organization, or state (Wardle & Derakhshan, 2017). Wardle and Derakhshan subsequently distinguish between misinformation (false content without intentional manipulation), disinformation (intentional falsehood), and malinformation (true content used with the intent to harm). For the purposes of this study, the central concept is disinformation in its intentional dimension, since the analyzed phenomena—coordinated campaigns, algorithmic narrative amplification, and the use of the information environment for political manipulation—presuppose intentionality on the part of the actors.

The disinformation ecosystem represents a more comprehensive analytical framework that goes beyond individual pieces of disinformation. We understand it to be a complex system of actors, processes, and tools that work in a coordinated manner to spread false or misleading information with the aim of influencing public opinion. The ecosystem encompasses various platforms, social media algorithms, media outlets, and actors—both state and non-state—that create and amplify disinformation content. The concept of an ecosystem emphasizes the systemic and adaptive nature of the phenomenon: disinformation does not operate in isolation but is part of interconnected networks in which it is amplified and reproduced (Benkler, Faris, & Roberts, 2018). It seems likely that it is precisely this systemic nature of the disinformation environment that explains why isolated interventions—such as one-off fact-checking campaigns—have limited long-term effects.

For the purposes of this study, youth is defined as the age group from 16 to 20 years old, assessed not only by age but also by social and educational status. The relevance of this age definition lies in the fact that this is a group

growing up in an environment where digital media and social networks serve as primary information channels, which distinguishes them from older generations in how they process and evaluate information.

In this study, media literacy is understood as a set of skills and abilities necessary for the critical understanding, evaluation, and creation of media messages and content. It includes the ability to access, analyze, evaluate, and creatively use media, as well as a critical attitude toward media information that enables responsible media use and increases resilience to disinformation (Schwendowius & Terstegen, citing Baacke, 2021). Baacke's (1997) classic taxonomy distinguishes four basic areas: media literacy (Medienkunde), media criticism (Medienkritik), media design (Mediengestaltung), and media use (Mediennutzung). This four-dimensional structure remains the reference framework in European research, although newer approaches expand it to include digital and data literacy (Ferrari, 2013; Hobbs, 2017). Media literacy is not merely an individual competence but also a social practice. Its development depends on institutional conditions, particularly on its systemic integration into the formal education curriculum.

The aim of this study is to characterise the impact of young people's exposure to the disinformation ecosystem in Slovakia and to identify available preventive measures and strategies aimed at protecting and educating this age group. The study addresses two research questions:

RQ1. What is the state of the disinformation ecosystem's impact on young people in the Slovak Republic?

RQ2. What interventions or strategies can be effective in reducing the negative impact of exposure to disinformation on young people in Slovakia?

Literature review

In recent years, experts from the Slovak Information Service and the Centre for Combating Hybrid Threats of the Ministry of the Interior of the Slovak Republic, as well as several institutions such as the Slovak Centre for Scientific and Technical Information (CVTI SR), IUVENTA—Slovak Youth Institute, the Institute for Public Affairs (IVO) and other think tanks and academic institutions operating in Slovakia. Current research emphasises that the issue of

disinformation and its impact on young people represents a key social and educational challenge, as low levels of media literacy often lead to young people being unable to distinguish between true and false information. This increases their vulnerability to manipulation, which negatively affects their critical thinking, trust in democratic institutions and overall social stability. Disinformation, defined as intentionally false or misleading information disseminated to deceive, and its broader category of "information disorder" (including misinformation and malinformation) have emerged as critical challenges in the digital age, particularly for adolescents navigating social media platforms reshaped by algorithms and viral content (Brion-Méndez et al., 2025; Pereira et al., 2025). Youth represent a vulnerable demographic due to ongoing cognitive development, heightened social conformity, and frequent exposure to online misinformation, which can amplify confusion, anxiety, and polarization (Brion-Méndez et al., 2025; Pereira et al., 2025; Van der Linden & Roozenbeek, 2024). In Slovakia, recent studies highlight that disinformation and fake news are increasingly embedded in the everyday media environment of children and adolescents, yet their critical-thinking and media-literacy skills remain uneven (CEE-DEM, 2024; Zuborová, 2019). The CEE-DEM report shows that many Slovak youths encounter manipulated content online, while Zuborová finds that young people aged 18–24 are frequent consumers of disinformation on social media but rarely report or question it, pointing to a gap between information openness and discernment. At the policy level, media literacy and safe use of new media are formally recognized, but implementation in schools is fragmented and teacher training is limited (Youth Wiki, 2025). Most efforts consist of ad-hoc awareness campaigns rather than a coherent national strategy, which weakens institutional responses and leaves Slovak youth more vulnerable to misleading narratives in both domestic and transnational disinformation campaigns (Youth Wiki, 2025; EU DisinfoLab, 2020s).

Slovakia is not an isolated case. Several countries in Central and Eastern Europe face comparable challenges regarding disinformation, and research into its impact on young people and the effectiveness of countermeasures is leading to growing interest in these issues.

Poland is a case where systemic weaknesses in media literacy education have become the subject of academic research. Waszak et al. (2025), in an extensive study on strategies for teaching disinformation awareness in the Polish education system, found that although the national curriculum has included topics on disinformation and fake news in subjects for both primary and secondary

schools since 2017, the implementation of this requirement depends on the individual approach of the educator, and most teachers have not been specifically trained in media education. This fragmentation of the curricular approach is consistent with the findings of a comparative study of fact-checking initiatives as promoters of media literacy in Poland (Kuś & Barczyszyn-Madziarz, 2020), which identifies non-governmental organizations and academic institutions as key actors in a space that the state has failed to adequately fill. The Czech Republic faces a similar structural situation. Jedinák and Borská (2023), in a study conducted on a sample of university students in 2022, found that while young people perceive disinformation as a problem, their ability to actively verify information before sharing it remains low. This gap between perceived importance and actual competencies is also characteristic of other countries in Central and Eastern Europe. When examining this research, it is necessary to consider the limitations of this type of study. For example, Waszak et al. (2025) work primarily with curriculum documents and teachers' statements. Since they do not work with measurable outcomes obtained from students, their conclusions may reflect implementation barriers rather than actual changes in competencies. The study by Jedinák and Borská (2023) is limited to a sample of university students from a single institution, which narrows its validity. The extent to which these conclusions can be generalized to high school students, the focus of our study, may be questionable.

At the transnational level, the CEDMO (Central European Digital Media Observatory) project, which coordinates researchers from Poland, the Czech Republic, and Slovakia, mapped the structure and semantics of disinformation narratives. An analysis of a sample of 1,523 fake news stories in Polish, Czech, and Slovak from January 2023 to November 2024 revealed significant overlaps in the thematic patterns of disinformation across these countries, suggesting a shared information ecosystem with similar vulnerabilities. On the other hand, Radi, Tomšič, and Bădescu (eds., 2024) analyze strategies for combating disinformation in Bulgaria, Croatia, the Czech Republic, Hungary, Germany, Slovenia, and other countries with post-communist experience in their collective monograph *Media Literacy, Media Education and Democracy in Central and Eastern Europe*. A common denominator among the identified countries is the low consolidation of democratic institutions and the persistent influence of foreign propaganda. It is precisely this that increases the overall vulnerability of these societies to disinformation. Based on comparative data from this research, it can be concluded that Slovakia shares three key deficits

with most of the analyzed countries: the absence of systematic education in media literacy, dependence on sector-isolated initiatives, and a low level of coordination between the state, the academic community, and civil society. Despite the analytical value of these findings, their limitations must be noted. The CEDMO analysis works with a closed sample of verified false reports. This means that it works exclusively with content that has been fact-checked. Such a selection cannot account for reports that may have been omitted from the research due to ambiguities in their statements and were not labeled as false. This may lead to an underestimation of the actual scope of the disinformation ecosystem. The collective monograph by Radi, Tomšič, and Bădescu (2024), on the other hand, employs a predominantly descriptive and comparative approach without a unified methodology across the countries studied. This, to some extent, complicates direct comparisons and the derivation of relationships between individual variables and resilience to disinformation. A broader regional picture is provided by the Disinformation Resilience Index for Central and Eastern Europe (DRI, 2024), which measures resilience to disinformation in ten countries in the region based on an expert survey, assessing the social, legal-institutional, and media-digital components of resilience. The survey results confirm that the Visegrad Group countries, including Slovakia, made only marginal progress in strengthening resilience to disinformation between 2021 and 2024. The global research consortium GLOBSEC (2023), in a survey conducted in eight Central and Eastern European countries (including Bulgaria, the Czech Republic, Hungary, Poland, and Slovakia), documented that the degree of susceptibility to believing pro-Kremlin narratives varies significantly across individual countries. The tendency to succumb to pro-Russian propaganda depends on a combination of historical context, political culture, and the state of the media environment. Slovakia ranked among the countries with below-average resilience, alongside Bulgaria and Hungary.

In terms of methods for combating disinformation, current research focuses on two complementary strategies: debunking and prebunking. In this context, Bruns et al. (2024) confirmed in an online experiment (5,228 respondents from Germany, Greece, Ireland, and Poland) that both approaches statistically significantly reduce the level of agreement with disinformation claims about climate change and vaccines, with debunking showing slightly higher effectiveness. Traberg, Roozenbeek, and van der Linden (2022) further specify that prebunking is particularly effective when it targets constructive manipulation techniques (emotional appeal, false dichotomies, logical fallacies) rather than

specific disinformation claims, which increases its generalizability to various types of disinformation content. Van der Linden (2023) in his monograph: *Foolproof: Why Misinformation Infects Our Minds and How to Build Immunity*, summarizes the available evidence and notes that prebunking interventions tested through playable media (e.g., the game Bad News) demonstrably increase players' ability to identify manipulative techniques even outside the gaming environment. However, research on the effectiveness of prebunking and debunking exhibits several methodological limitations. The experiment by Bruns et al. (2024) was conducted online and utilized specifically and artificially created disinformation claims in a controlled environment. Therefore, their transferability to a natural media environment may be limited. Van der Linden (2023) himself acknowledges that the long-term effect of prebunking interventions has not been sufficiently explored, and most studies measure the effect immediately after the intervention, not several months later.

In their study, Drushlyak et al. (2025) analyze the effectiveness of various types of educational interventions aimed at developing information and media literacy among youth. Their research showed that different types of educational interventions develop distinct components of media literacy—information literacy, digital safety, and media literacy. This suggests that an effective intervention model for the Slovak context should combine multiple didactic approaches, depending on the target competency.

Methodology

The primary research is based on data and findings obtained through qualitative research tracking the correlations between deformations of political awareness and the increase of political extremism among secondary school students in the the Košice and Prešov regions.[1] Research focused on the uni-

1 The research (VEGA No. 1/0321/21) focused on examining the correlations between distortions in political awareness and the rise of political extremism among young people in the Košice and Prešov regions. Methodologically, it builds on previous research by Marcela Gbúrová, who has already addressed the issue of political awareness in several publications and scientific projects. The project followed on from research into secondary illiteracy in the Slovak Republic (VEGA No. 1/0658/16), which also presented the concept of different levels of political awareness in more detail. The questionnaire used in the research consisted of two tests, labelled Test A and Test B. Test A contained five sets of questions aimed at finding the level of political awareness in areas such as human rights, democracy, nativism,

variate analysis of variance as well as on the correlation analysis of the items of political awareness and political extremism—detecting the differences between the measured values of political awareness as the actual predisposition of the respondents and the values of potential tendencies to political extremism. Data collection was administered in September 2023 by physical collection in selected secondary grammar schools in the municipalities of Košice and Prešov (random selection). The final sample, after elimination of incorrectly completed questionnaires, consists of 500 respondents, based on the maintained proportional key: 125 respondents for each type of school (a total of 250 respondents for both types of secondary schools) and in the region in question. The respondents were students aged 16 to 20 in the third and fourth grades of secondary school. The data obtained were processed using reliability tests (Cronbach's alpha), one-way analysis of variance (Oneway ANOVA), and linear correlation analysis (Ruman, 2023).

The research is in its secondary research also based on an analysis of existing data and expert studies on the spread of disinformation among young people and their behaviour on social networks. Secondary sources are used for this purpose, including scientific articles, research reports, methodological manuals and analytical documents (e.g. Hodek, SFPA, Security Academy of the Police Force, Faculty of Arts, Comenius University). The analysis of these sources used a qualitative content analysis method with elements of documentary analysis, which allows for the systematic identification and categorisation of factors influencing the vulnerability of young people to disinformation.

The qualitative content analysis focused on the systematic identification of research findings related to disinformation and its impact on young people.

the media and European integration. Test B focused on measuring the inclination towards political extremism. The questionnaire also included demographic questions about the gender, type of school, region and age of the respondents, as well as their nationality. The research sample consisted of 500 secondary school students from the Košice and Prešov regions. The questionnaires were collected in September 2023 in physical form at selected secondary schools in the Košice and Prešov regions (random selection). Detailed research results are published in the publication Gbúrová, Daniela, Daniel Dobiaš, Jana Šutajová, Gabriel Eštok, Ján Ruman, and Tomáš Dvorský. 2023. Research Into Correlations Between Deformations of Political Awareness and the Increase of Political Extremism Among Secondary School Students in the Košice Self-governing Region and the Prešov Self-governing Region. Pavol Jozef Šafárik University, ŠafárikPress Publishing House. https://doi.org/10.33542/RCB-0277-0 (The Impact of Political Awareness on Political Extremism Among Secondary School Students in the Košice and Prešov Regions). The publication is available online at https://unibook.upjs.sk/sk/filozoficka-fakulta/1134-research-into-correlations-between-deformations-of-political-awareness.html.

Based on recurring patterns, we summarised the findings. The main areas of analysis focused on several interrelated dimensions. The attention was devoted to examining how Slovak youth distinguish between true and false information. This was closely linked to an exploration of the relationship between media literacy and young people's vulnerability to harmful or misleading content. Furthermore, the research investigated the tendencies observed among young people in relation to their perception of the limits of freedom of speech, as well as their awareness of their own susceptibility to manipulation. In addition, these findings were contextualised within the broader framework of public trust in mainstream media in Slovakia. Finally, the analysis also addressed the visible strategies for countering disinformation, including media education initiatives, fact-checking practices, and the use of technological tools.

The documentary analysis focused on a contextual understanding of the phenomena under investigation. We analysed documents (e.g. research reports, strategies, methodological guides) to find out how different institutions and organisations define and address the issue of disinformation. The findings were then used to interpret the results of the content analysis and to identify gaps in existing knowledge.

The research combines critical literary and content analysis of secondary sources with a synthesis of empirical data obtained from existing surveys and analytical studies in order to achieve a more comprehensive and deeper understanding of the issue under investigation. The following procedure was followed in synthesising the data:

- relevant research and studies dealing with the issue of disinformation and young people in Slovakia were identified;
- key findings and data were extracted regarding the objective, research questions and defined categories;
- this data and these findings were systematised with the results of content analysis, focusing on key issues related to the impact of disinformation on young people in Slovakia;
- The synthesised data were interpreted in the context of theoretical knowledge about disinformation and its impact on society.

This approach provided a comprehensive view of the issue under investigation.

The limitation of this research is that it is based on a limited number of available studies and a relatively underdeveloped discussion on the spread

and impact of disinformation among young people in Slovakia. The use of secondary data may imply limitations in controlling the quality and methodology of the original research. Despite these limitations, we believe that our research provides valuable insights into the disinformation ecosystem and its impact on young people in Slovakia.

Results on the disinformation ecosystem and its impact on Slovak youth

Correlations between deformations of political awareness and the increase of political extremism among secondary school students in the the Košice and Prešov regions

During primary research into the correlations between distortions in political awareness and the rise of political extremism among secondary school students in the Košice and Prešov regions, conducted by Pavol Jozef Šafárik University in Košice, we focused on various aspects related to information acquisition, susceptibility to manipulation, preference for simple solutions to complex problems, and inclination towards myth-making or taboo forms of behaviour. As part of the research, students were asked questions about their level of trust in the media, their tendency to be susceptible to conspiracy thinking and perception, and their overestimation of their own judgement in identifying manipulation. Through these questions, we also analysed students' attitudes towards truth, which can provide insight into their approach to plurality of opinion and social polarisation. In addition, we focused on attitudes towards freedom of speech and awareness of its limits as a regulator of the democratic functioning of society. In this context, respondents were asked to answer four key questions:

- "Freedom of speech must be unlimited (I can write whatever I want on social media)."
- "There is only one truth, and that is the one that I recognise as truth."
- "All media serve to manipulate the masses by the elites."
- "I can always tell the difference between truth and manipulation."

One of the results of this research is the identification of correlations between political awareness and political extremism regarding the media. In questions related to freedom of speech, plurality of opinion, critical evaluation

of one's own judgement, or susceptibility to conspiracy thinking, no findings were made that would indicate tendencies towards extremist attitudes among students. On the issue of freedom of speech, a finding was made that grammar school students are more aware of the limits of freedom of speech than vocational school students. The research pointed to the fact that the tendency towards polarisation of opinion is not high and that students are aware of the importance of plurality of opinion in society, or that their own beliefs may also be wrong. Women showed a higher level of awareness on this issue than men. The research results suggest that students are aware of their own limitations and are cautious about detecting manipulation, which may indicate their awareness of the risks and pitfalls of today's complex information environment. The results indicated a higher level of distrust of the media and greater vulnerability to conspiracy thinking among males than females. This suggests a higher level of awareness of the limits of freedom of speech among women and a greater inclination among the male population towards more radical attitudes on the issue of freedom of speech. Furthermore, grammar school students view their beliefs more sceptically and are more open to other opinions. This may indicate the positive results of humanities and social sciences education at grammar school level, which leads students to evaluate their own beliefs more critically. The research identified a correlation confirming the relationship between the level of political awareness and openness to discuss and transform one's views. From this, it can be concluded that although a growing level of political awareness influences the increase in acceptance and recognition of other views and openness to discussion, it does so only to a small extent. It also indicates the ability of students to critically re-evaluate their own beliefs, thereby reducing the risk of their social and political polarisation or radicalisation leading to extremist tendencies (Ruman, 2023). The complete methodology, statistical data, and results are available in the publication: *Research Into Correlations Between Deformations of Political Awareness and the Increase of Political Extremism Among Secondary School Students in the Košice Self-governing Region and the Prešov Self-governing Region* (Gbúrová et al., 2023).

Systematic identification and categorisation of factors influencing the vulnerability of young people to disinformation

In term of secondary research results, according to a survey by psychologists at Comenius University in Bratislava and the Slovak Academy of Sciences,

published in the scientific journal Frontiers of Psychology, up to 41% of respondents are unable to distinguish true information from false information, and only 48% of young people believed real news more than misleading news (Greškovičová et al., 2022). In the current environment of information overload and complex social phenomena, people often resort to simple or conspiratorial explanations that offer them a comprehensible framework. An important role is also played by the tendency towards so-called confirmation bias, i.e. the tendency to seek out opinions and information that confirm one's own beliefs, which in turn contributes to the creation of so-called opinion bubbles in society (Pariser, 2011). The results of the OECD report on institutional trust show that up to 26% of Slovak respondents cite friends and acquaintances as their key source of information and trust them more than any state institution (Globsec, 2025). Such an isolated virtual space is created mainly by social media algorithms and is reinforced by the confirmation of existing opinions, which leads to individuals closing themselves off in homogeneous groups without contact with different opinions. The result is a distorted perception of reality and the polarisation of society, which negatively affects its cohesion and discourse. This phenomenon is often associated with the echo chamber effect, where the same or similar opinions are repeated, which can contribute to the radicalisation of the attitudes of their members (Pariser, 2011). However, the origins of this phenomenon date back to the 1960s, when a tendency was demonstrated for people to expose themselves to news that was in line with their opinions or interests and, conversely, to avoid non-conformist material (Klapper, 1960).

In the overall assessment, according to the *Globsec* agency, Slovakia ranked among the countries most prone to believing in conspiracy theories. The results of the survey also show that respondents identified television, social networks and friends as their primary sources of information (Globsec, 2025). Navigating such an information environment is more challenging with the increasing dynamics of information transfer and the growing number of information platforms. According to the Digital News Report by Oxford University and the Reuters Institute, trust in traditional media is declining, and Slovakia has the third lowest level of trust among the European countries surveyed (Reuters, 2023). The general trend we have observed of declining trust in so-called traditional media is an indicator that in recent years people have been turning more to other sources of information, which include the so-called disinformation ecosystem. This is an ideal channel for

disseminating content that is problematic in terms of objectivity, criticality and legitimacy. Social networks currently play the role of an alternative channel for disseminating information. They provide an environment where content spreads quickly and without significant regulation and have become the main source of information for a large part of society. Their importance also lies in their ability to influence public opinion, as they use algorithms to offer users personalised content tailored to their preferences. However, this mechanism causes the information received to be selective, giving individuals only a narrow and often distorted picture of social reality (Dvorský, 2023).

This mechanism has a particularly significant impact on young people, who are among the most active users of social networks in Slovakia (Go4insight, 2024). Unlike the era dominated by print, television, and radio, today's communication has clearly shifted toward digital platforms and social media. These online spaces offer dynamic and constantly evolving opportunities, especially when it comes to shaping the attitudes of different voter groups (Šárovec, 2024). For young people, these platforms have become not only a major source of information, but also a space for social interaction and identity formation. However, algorithmic content filtering leads to young people being more frequently exposed to information bubbles dominated by one-sided or distorted interpretations of reality. This increases their vulnerability to disinformation and conspiracy narratives, which provide them with simple and attractive explanations of complex phenomena. The potential negative impact of social networks on society was also acknowledged by Facebook's Product Manager for Civic Engagement S. Chakrabarti, who pointed out in 2018 that social media essentially amplifies human intentions—both positive and negative. In his words, at best, they can promote civic engagement and freedom of expression, but at worst, they contribute to the spread of misinformation and the weakening of democratic processes (META, 2018). In Slovakia, even young people's communication on social networks focuses more on confrontational narratives than in the European context, as shown by an analysis of the political communication of youth organizations by Mihálik, Garaj, and Bardovič (Mihálik et al., 2022). In the Slovak context, the problem of vulnerability to disinformation is even more pronounced, as the discussion on media literacy is relatively new and systematic critical thinking programmes are only gradually being introduced into the school environment (SFPA, 2022). An example is the methodological handbook of the State Pedagogical Institute of the Slovak Republic, which defines 10 media literacy

competencies (Bizíková et al.). This weak preparedness of society is linked to several factors that have shaped the unfavourable situation in recent years: Slovakia has long been exposed to hybrid warfare and foreign propaganda, populism and aggressive, often manipulative communication have spread in politics, with some political leaders and well-known figures with great influence themselves becoming disseminators or creators of disinformation. Combined with the chaotic functioning of the state during the pandemic, this has led to an increase in distrust of public institutions and authorities. Weak media education is therefore unable to sufficiently compensate for these negative factors, which increases the overall vulnerability of young people and society to disinformation content (SFPA, 2023).

According to experts, the poor level of critical thinking among Slovak students is alarming because of its negative impact on civic awareness and the mood in society. As mentioned in the post above, we observe a low ability among young people to evaluate information and distinguish between true and false news. According to research by UK and SAV, students placed almost no emphasis on manipulative techniques in texts, such as bold font, grammatical errors or superlatives (Greškovičová et al., 2022). Slovak pupils also achieve poorer results in reading literacy, with the PISA 2022 test confirming that their level remains below the OECD average (Greškovičová et al., 2022). Reading literacy is key to effectively evaluating and processing the information that young people encounter. It is a set of skills that includes understanding a text, critically evaluating its content and context, assessing its relevance, and identifying inaccurate, misleading, or deceptive information (MK SR, 2011). A lack of these skills significantly increases young people's vulnerability to disinformation and conspiracy narratives.

Discussion

The results of this study are consistent with the findings of international research on the vulnerability of young people to disinformation, with the Slovak case exhibiting several structural characteristics shared with other Central and Eastern European countries. The absence of empirically verifiable extremist tendencies among respondents suggests that exposure to the disinformation ecosystem does not automatically lead to political radicalization. This finding is consistent with the conclusions of Radi, Tomšič, and

Bădescu (2024), according to whom the correlation between disinformation exposure and extremism is mediated primarily by the institutional context and the level of formal education.

The identified differences between various types of secondary schools in selected regions of Slovakia are analytically significant. Students at grammar schools demonstrate a higher degree of critical reflection on their own beliefs and are open to a greater plurality of opinions. This is a phenomenon observed by Waszak et al. (2025) in the Polish context. We agree with the assessment that the integration of humanities and social science subjects correlates with a greater ability to identify attempts at manipulation. It can therefore be concluded that the type of educational environment or institution acts as a variable between exposure to disinformation and cognitive resilience. This has direct implications for the structure and content of preventive interventions.

Gender differences in susceptibility to conspiracy thinking and trust in the media are consistent with the findings of the study by Belovičová et al. (2024) conducted on a Slovak sample, as well as with comparative data from GLOBSEC (2023), according to which men in Central and Eastern European countries exhibit a statistically higher susceptibility to pro-Kremlin narratives than women. These findings may suggest that a gender-sensitive approach to media education is not only desirable but methodologically necessary.

The positive correlation between the level of political awareness and the willingness to revise one's own views supports van der Linden's (2023) theoretical framework, according to which cognitive resilience to disinformation is not a static trait but a developable competence. On the other hand, the degree of correlation suggests that political awareness alone, without targeted education in media literacy, is insufficient to build effective resilience. This finding is consistent with the findings of Vrag and Tully (2021), who identified motivational and institutional dimensions as necessary conditions for the effectiveness of media literacy interventions.

Implications and recommendations

The HoDeKoProM research emphasises that young people perceive improvements in education and the development of personal responsibility as the most appropriate solution to combating disinformation, while clearly

rejecting an approach based on censorship (Belovičová et al., 2024). According to the respondents in this research, effective media literacy programmes can be integrated directly into school education as systematic course modules that teach students to distinguish between true and misleading information, verify sources and reflect on forms of manipulation. However, in addition to education in schools, it is also necessary to develop informal educational interventions, such as workshops, creative media, and interactive projects that engage young people directly and practically (Belovičová et al., 2024). According to the results of the "Together for Healthy Media" research conducted by the Slovak Youth Council, it is necessary to emphasise strengthening the capacities of youth leaders, lecturers and educators. They should be equipped with tools and knowledge that will enable them to guide young people towards a responsible and critical approach to the media and content on the internet (Slovak Youth Council, 2025). The project also aims to create partnerships between youth organisations, schools and public institutions to strengthen the system supporting resilience to disinformation as part of civic engagement (Slovak Youth Council, 2025). Career coaching can also play an important role in this area, as it has proven to be an effective tool for developing civic and societal skills (Tokolyova, 2025).

Technological interventions are also an important part of the fight against disinformation in Slovakia. Examples that are already actively working in practice include Checkbot (Dlhopolec, 2019), which functions as an interactive chatbot on Facebook Messenger that educates users by helping them analyse claims and verify facts without directly telling them what is true and what is a hoax. The HOPE (Hall of Positive Engagement) project, initiated by Tomáš Kriššák, uses gamification as a way to engage young people—students learn to recognise hateful or manipulative behaviour, trolls or conflict situations in the online environment through an interactive game. The project also includes digital materials such as comics and an online library, which are freely available and can be used in schools or extracurricular activities. These initiatives suggest that a combination of technological tools (chatbots, AI, visual formats, games), education and practical interaction can be effective elements of a prevention strategy. At the same time, they show that young people's participation, experiences and reflection in interactive formats have the potential to strengthen their media resilience to disinformation.

In Slovakia, active civil society plays an important role, with several initiatives aimed at identifying and monitoring problematic content in the online

space. Among the most significant projects is the fact-checking platform Demagog.sk, which verifies the factuality of public statements made by politicians and social authorities. Another example is Blbec.online, a system that collects and analyses data on extremist and manipulative profiles on social networks, thereby contributing to the detection of disinformation networks and trends in online communication. The Adapt Institute, which specialises in monitoring the information space and detecting false or potentially harmful content, also plays an important role. It is complemented by the Konspiratori.sk project, which offers a publicly accessible database of websites with dubious, manipulative or conspiratorial content. This project uses a clearly defined evaluation methodology that includes criteria such as adherence to the principles of journalistic ethics, transparency of media ownership, separation of news from commentary, and assessment of the scientific and factual accuracy of published content. It also considers whether the website spreads hate speech, alarmist news or propaganda narratives (Dvorský, 2023).

Conclusion

The aim of this article is to characterise the impact of young people's exposure to the disinformation ecosystem in Slovakia and to identify available preventive measures and strategies aimed at protecting and educating this age group. In line with this aim, the study addressed two research questions focused on (RQ1) the current impact of the disinformation ecosystem on young people in the Slovak Republic and (RQ2) interventions that can effectively reduce the negative consequences of this exposure.

Research conducted in the Slovak Republic points to several findings regarding the relationship between youth exposure to the disinformation ecosystem. The research suggests that young people in Slovakia have difficulty assessing the relevance of news and identifying unreliable content. The shortcomings in recognising manipulative techniques in media and social network content fit into the broader context of long-term measurements that have found low levels of reading literacy among Slovak youth, which has long been below the OECD average. This vulnerability is reinforced by the fact that young people are among the primary users of social media and thus obtain information from a regulated environment that is a significant platform for the disinformation ecosystem. Spatially limited research in the

region of eastern Slovakia has highlighted several findings on the relationship between political awareness and tendencies towards extremism among young people in matters relating to the media. On the issue of freedom of speech, a finding was made that grammar school students are more aware of the limits of freedom of speech than vocational school students. Also, grammar school students are more sceptical about their beliefs and more open to other opinions. In terms of gender differentiation, a higher degree of caution in evaluating information was found among females, while males showed a higher inclination towards radicalisation. Taken together, these results provide an answer to RQ1: the impact of the disinformation ecosystem on Slovak youth is manifested not in straightforward extremist attitudes, but in differentiated patterns of vulnerability shaped by school type, gender and overall levels of literacy and political awareness.

Regarding RQ2, the analysis shows that effective responses to disinformation require a comprehensive and long-term approach that combines education, technological innovation and active civic engagement. The development of media and digital literacy, especially among young people, through formal and informal education plays a key role. By coordinating these approaches, it is possible to gradually increase society's resilience to disinformation and strengthen trust in democratic institutions and the media. Education focused on media literacy, identifying disinformation, hybrid threats and protecting the cognitive environment is a legitimate means of strengthening political awareness. By developing these skills, students become more resistant to manipulation, learn to think independently and critically, and gain a better understanding of the fundamental principles of freedom of expression and diversity of opinion, which are key to the functioning of a democratic system and the rule of law. Such education can also contribute to reducing the risk of the spread of political radicalism and extremism.

At the same time, this study has several limitations. The primary research was geographically confined to secondary school students in the Košice and Prešov regions and captured only one age cohort, which limits the generalisability of the findings to the broader youth population in Slovakia. The analysis of secondary data relies on existing studies of varying methodological quality, which constrains the precision with which causal relationships between disinformation exposure, trust and democratic attitudes can be assessed. Future research should therefore expand the empirical basis by including other regions, age groups and longitudinal designs that would allow

for the observation of changes in vulnerability over time. It would also be useful to experimentally test specific educational and prebunking interventions in school settings to evaluate their concrete impact on media literacy and resilience to disinformation.

Projects affiliation

VEGA č. 1/0645/25: Instrumentalisation of Historical Events as a Subject of Recodification Schemes in Political and Propaganda Practice in Slovakia after 1989 (Selected Aspects of Ethnic Relations).

Authors' contributions

Tomáš Dvorský 20% (first authorship) • Gabriel Eštok 40% • Mária Denciová 40%

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