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Przemysław Krysiński[*], Natalia Pamuła[**], Giulia Conti[***]

PRACTICES AND ATTITUDES TOWARDS DISINFORMATION ACTIVITIES AMONG STUDENTS OF MEDIA CLASSES AT THE UNIVERSITÀ DI PARMA – A PRELIMINARY STUDY

Abstract

This article aims to draw attention to the practices and attitudes towards disinformation adopted by students of selected fields of study related to information and media at the Università di Parma. The research was conducted using a diagnostic survey method on a group of 120 people (research sample 60%). The students surveyed are daily users of the internet. A high percentage of respondents declared that they verify information found online, although a significant percentage of the respondents did not pay attention to verification, did not answer this question or clearly declared that they did not do so. For them, the factors influencing the credibility of information were a credible source, endorsement by an authority and the lack of bias in the presentation of facts. The students declared that they had encountered disinformation content. The most common examples of this include fake news, false visual and audiovisual content and trolling. According to the respondents, the main purpose of disinformation was to mislead public opinion, driven by various motives. A small percentage of the respondents believed that disinformation may cause negative attitudes towards other nations. Unsurprisingly, a large part of the surveyed group had encountered disinformation about vaccinations or climate change. A significant percentage had also encountered content related to the war in Ukraine, 5G technology, refugees, the flat Earth theory, abortion, as well as ethnic and national minorities. Students pointed to Russia as the main actor on the disinformation scene. It should also be noted that the United States, China and Israel received high ratings, while Italy received one of the lowest. The respondents believed that the greatest threats from disinformation on the internet were the destabilization of the political and social situation, accompanied by a decrease in national security, while identifying it as one of the least

[*] Nicolaus Copernicus University in Torun, e-mail: krys@umk.pl, ORCID: 0000-0001-7946-3515.

[**] Nicolaus Copernicus University in Torun, e-mail: napa@umk.pl, ORCID: 0000-0002-0686-7268.

[***] University of Modena and Reggio Emilia, e-mail: giulia.conti@unimore.it, ORCID: 0000-0003-3200-0251.

threatening factors. 70% of them believed that it increased the abilities of recipients in the process of verifying information.

Keywords: disinformation, fake news, students, behaviours, attitudes, education, resistance

Introduction

The contemporary information landscape is predominantly globalized and centred around electronic media, especially social media platforms. Various entities frequently utilize these channels to shape public opinion across a wide range of subjects, often with the objective of disseminating disinformation. Concerns regarding the potential challenges associated with digital information distribution and communication have been acknowledged since the early 2010s. This view was reinforced and confirmed by the onset of the Covid-19 pandemic, underscoring the profound dangers posed by inaccurate health information to societies[1]. Disinformation has become a pervasive global issue with extensive impact. The scope of disinformation practices encompasses various topics influenced by international and local socio-economic contexts. As indicated by the European Digital Media Observatory, the most commonly exploited subjects in disinformation narratives include armed conflicts, the above-mentioned pandemic and health-related issues, climate disaster, matters concerning sexual and ethnic minorities, the political landscape in Europe and individual nations (including political elections) and emerging technologies[2]. A notable development in this field is the growing role of artificial intelligence, which serves as a subject of disinformation and a tool of its dissemination. Additionally, artificial intelligence can be instrumental in detecting and mitigating disinformation[3].

Disinformation – Terminological Considerations

Fake news, i.e. the "content created with the intention of misleading readers"[4], is a phenomenon that has gained significant attention in recent years,

[1] S. Diepeveen, M. Piner, *User perspectives on digital literacy as a response to misinformation*, "Development Policy Review", 2022, vol. 40, iss. 52.

[2] *From the pandemic to the war in Ukraine: One year and a half of countering disinformation. Special edition brief – EDMO fact-checking network*, EDMO, https://edmo.eu (10.02.2025).

[3] T. Canetta, *Prebunking AI-generated disinformation ahead of EU elections*, EDMO, https://edmo.eu (10.02.2025).

[4] S. Bhatt [et al.], *Fake News Detection: Experiments and Approaches Beyond Linguistic Features*, "Springer International Publishing", 2021, pp. 113-128.

posing a considerable challenge to the dissemination of accurate information and integrity of public discourse. Scholars such as Giglietto point out that we should not speak about fake news, because the content used to manipulate public opinion is often not entirely false, but rather taken out of its original context. A real image, if referenced in a different situation from the one in which it was produced, can take on an entirely different meaning[5].

Information disorder may therefore be a more appropriate term, encompassing misinformation, disinformation, and malinformation. This phenomenon represents a substantial threat to the underpinnings of democracy and social cohesion worldwide, capable of undermining public confidence in institutions and even jeopardizing democratic processes, particularly during election periods. While these categories are often collectively referred to as 'fake news', the reality is more complex. Disinformation refers to the intentional distribution of false information, often through digital channels, with the aim of manipulating public opinion. Misinformation, however, refers to the unintentional spreading of false content. The concept of malinformation is the most direct one: it entails the strategic use of factual information to mislead, manipulate, or damage the reputation of a target. This type of information disorder can be particularly insidious, as it exploits the credibility of true facts to achieve a malicious agenda[6]. Malinformation can assume many forms, such as the selective use of information, the removal of context or the amplification of private details to embarrass or discredit. While misinformation may stem from ignorance or error, malinformation is a calculated tactic to undermine trust and sow discord, posing a serious threat to democratic discourse, public debates, and collective decision-making[7].

Several scholars have investigated this phenomenon in relation to social media, the rise of deepfakes and the role of online search in validating news[8]. A recent study found that online search does not lead students to refute false news as effectively as it leads them to validate true news, highlighting the need for better media literacy and fact-checking tools. Recent advances in

[5] F. Giglietto [et al.], *"Fake news" is the invention of a liar: How false information circulates within the hybrid news system*, "Current Sociology. La Sociologie Contemporaine", 2019, vol. 67(4), pp. 625–642.

[6] E. Horvitz, *On the Horizon: Interactive and Compositional Deepfakes*, "Proceedings of the 2022 International Conference on Multimodal Interaction", 2022, pp. 653-661.

[7] J. Akers, [et al.], *Technology-Enabled Disinformation: Summary, Lessons, and Recommendations*, "Technical Report", 2018.

[8] N. Bliss [et al.], *An Agenda for Disinformation Research. CRA Computing Community Consortium (CCC)*, CRA, https://cra.org (20.02.2025); C. Geeng, S. Yee, F. Roesner, *Fake News on Facebook and Twitter: Investigating How People (Don't) Investigate*, [in:] *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20) Association for Computing Machinery*, New York 2020, pp. 1–14.

discriminative and generative AI methods, such as deepfakes, have made disinformation more sophisticated and difficult to detect, posing a growing threat to democracy and civil liberties. Previous attempts to detect disinformation have achieved some success, but significant challenges remain, including early detection, multilingual and multiplatform detection, as well as better explainability[9].

This type of misinformation can have far-reaching consequences, affecting various aspects of daily life, from politics and public health to economic activities. While there have been admirable efforts to identify and characterize fake news, the task of distinguishing it from legitimate 'fact-based discursive practices' and honest partisan journalism remains a significant challenge, and readers may mistake fake news for real news, leading to confusion and conflicts within society. The rise of the internet and social media platforms may have further exacerbated this problem, as these channels enable the rapid and widespread dissemination of false information, allowing millions of connected people to easily create, edit or share content, leading to a possible proliferation of fake news[10].

The pervasiveness of fake news seems to be exacerbated by the fragmented nature of digital information. The rapid spread of false information through digital platforms highlights how the traditional role of the media as gatekeepers of truth has been undermined[11]. Overall, the growing prevalence of disinformation in the digital age represents a complex and multifaceted challenge that requires a multidimensional approach, combining technological solutions, media literacy initiatives, and institutional responses[12]. The challenge is therefore twofold: on the one hand, there is a need to promote broader media literacy, equipping individuals with critical tools to recognize reliable sources; on the other, institutions and traditional media must develop effective strategies to combat the spread of false news, restoring the central role of information as a public and collective good[13].

Disinformation from an Italian Perspective

In Italy, notable cases of disinformation have emerged, particularly during the COVID-19 pandemic, with the dissemination of conspiracy theo-

[9] *Ibidem*.

[10] T. Lee, *The global rise of "fake news" and the threat to democratic elections in the USA*, "Public Administration and Policy: An Asia-Pacific Journal", 2019, vol. 22(1), pp. 15–24.

[11] E. Horovitz*, op.cit.*

[12] C. Geeng, S. Yee, F. Roesner, *op.cit.*

[13] N. Bliss [et al.], *op.cit.*

ries, ineffective treatments and distorted data, which fuelled uncertainty and eroded trust in healthcare and scientific institutions. This global issue has significantly impacted the country, where the spread of misinformation has been exacerbated by various factors, including the complexity of the Italian media landscape and political environment. The Italian government and media organizations have recognized the need to address this issue, implementing various strategies to combat fake news and promote media literacy among the population. However, the effectiveness of these measures remains a subject of ongoing debate and research, highlighting the complexity of tackling misinformation in the digital age.

Algorithms of social media platforms, which tend to create 'filter bubbles', exposing users primarily to content that reinforces their pre-existing beliefs, also play a relevant role in this scenario, which is further complicated by traditional political polarization and the actors who leverage disinformation as a tool of propaganda. One of the key challenges in tackling fake news is the difficulty of accurately identifying and categorizing it. The involvement of multiple players in the news ecosystem and the malicious intent behind the creation of fake news make it a complex and dynamic problem. Addressing this issue requires a multifaceted approach combining technological, regulatory and educational initiatives. On the technological front, the development of advanced algorithms and machine-learning models can assist in the automatic detection of fake news. However, the involvement of multiple players in the news ecosystem and the malicious intent behind the creation of fake news present ongoing challenges. Understanding the nature of fake news and the consequent strategies employed to combat it are therefore crucial[14].

Previous research has highlighted the existence of segregated communities when it comes to consuming online news, and remarkable exposure to online disinformation was discovered in the run-up to the 2018 Italian general election. During the COVID-19 pandemic, studies found that links containing fake news were shared 2,352,585 times, accounting for 23.1% of the total number of articles reviewed[15]. This finding highlights the significant impact of fake news and the need for effective strategies to address the problem. Giglietto et al. explore the circulation of false information in the hybrid media system through a three-level analysis framework, based on sociocybernetics and influenced by thinkers such as Bateson and Von Foerster.

The micro level focuses on individual actors and how they judge the truthfulness of the information. Here, individuals base their decisions on

[14] S. Bhatt [et al.], *op.cit.*

[15] F. Pierri, A. Artoni, S. Ceri, *HoaxItaly: a collection of Italian disinformation and fact-checking stories shared on Twitter in 2019*, "Cornell University", 2020.

factors such as authority, proximity to the source and the context in which information is shared. The analysis at this level emphasizes the role of personal judgment in determining whether to propagate a given piece of information. The medium level concerns the interactions between actors and content as information propagates through networks. At this stage, patterns of expectations emerge between the different actors involved in sharing or consuming information. These interactions can reinforce or challenge the perceived truthfulness of information, often creating a propagation chain. At the macro level, which is the third stage, the authors consider the broader emergent process of how false information spreads across society. This includes the societal dynamics of how certain information cascades through media systems and is judged, shared or rejected by various groups, often based on differing logics (e.g., legal/illegal, informative/non-informative). This three-tiered framework highlights the complexity of false information dissemination, illustrating that it is not reducible to the actions of the original creators. Instead, the propagation of false information in a hybrid media system involves a range of actors and decisions at multiple stages[16].

Addressing the challenges of fake news in Italy requires a multifaceted approach that combines technological, regulatory, and educational initiatives. On the technological front, the development of advanced algorithms and machine learning models can assist in the automatic detection of fake news. These tools can help identify and flag suspicious content, allowing for more effective fact-checking and content moderation. Regulatory measures, such as implementing robust fact-checking mechanisms and enforcing content moderation policies on social media platforms, can also play a crucial role in combating fake news.

Complementary to these technological and regulatory efforts, educational initiatives aimed at enhancing media literacy among the public are essential. By empowering citizens to critically evaluate the information they encounter, such educational programmes can help mitigate the impact of fake news and foster a more informed and discerning populace. Studies such as Celestini, Caldarelli and Moscadelli are critical for understanding the nature and impact of fake news in Italy, as well as for developing effective strategies to address this multifaceted challenge. By combining technological advancements, regulatory frameworks, and educational initiatives, Italy can work towards creating a more resilient and informed society that is better equipped to navigate the complexities of the digital age and the ongoing threat of fake news[17].

[16] F. Giglietto [et al.], *op.cit.*

[17] A. Celestini [et al.], *Information disorders on Italian Facebook during COVID-19 infodemic*, Arxiv, https://arxiv.org (20.02.2025).

Methodology

The inspiration for conducting research among students of selected fields related to information and media management at the Faculty of Philosophy and Social Sciences at Nicolaus Copernicus University in Toruń came from the research conducted by Santiago Tejedor, Marta Portalés-Oliva, Ricardo Carniel-Bugs and Laura Cervi on a group of 252 Spanish journalism students. Researchers from the University of Barcelona have observed that most students prefer online media as the main source of information over social media. In addition, young people believe that politics is the main topic of fake news, which, according to the respondents, is mainly distributed by adult users via social media platforms. A vast majority noted that fake news is created in political interests, and one in four respondents indicates that there is a strong ideological component behind disinformation strategies. The Spanish study has also revealed that students do not trust their ability to distinguish true information from false information. In this regard, the researchers concluded that implementing initiatives and conducting research aimed at developing media and information skills is crucial in educating university students[18]. Inspire by the Spanish research, the Polish authors decided to assess the level of knowledge about disinformation among students of the University of Toruń, expanding the research group to include other fields related to information management and processing.

The primary objective of this study was to investigate the sources of information utilized by the selected student participants (C1) and the methods they employ to verify the information and data they acquire (C2), which aligns with the broader study of internet usage practices. Furthermore, the authors aimed to evaluate the students' self-reported understanding of disinformation (C3). The research also examined the respondents' attitudes and reactions to disinformation encountered in the online environment. Another critical objective was to compare the information-seeking behaviours of the respondents with their levels of resistance to disinformation (C4).

The authors set out to answer the following questions: How do students define a 'reliable source of information'? (Q1); What forms of disinformation do the respondents encounter? (Q2); What understanding do the respondents possess regarding disinformation? (Q3); What knowledge do the respondents have concerning strategies to combat disinformation? (Q4); How do students protect themselves against disinformation? (Q5). The authors also adopted the following research hypotheses: Women verify information more

[18] S.C. Tejedor, [et al.], *Journalism Students and Information Consumption in the Era of Fake News*, "Media and Communication", 2021, vol. 9(1), pp. 338–350.

frequently than men (H1), Age influences the recognition of disinformation (H2); Students enrolled in media and social communication classes possess greater knowledge of disinformation activities, making them more resilient to such threats (H3).

The study employed the diagnostic survey method, incorporating a CAWI (Computer-Assisted Web Interviewing) questionnaire designed with Google Docs. The questionnaire comprised 21 questions. An email invitation was extended to all the students enrolled in media and social communication classes between March and June, 2024. The university reported that 146 out of 200 students received the questionnaire. Of these, 120 completed questionnaires were returned, resulting in a response rate of 60%. Comprehensive quantitative and qualitative analyses were undertaken based on the data obtained.

The survey questionnaire was organized into four sections. The first section ('Metrics') requested participants' demographic information and their academic discipline. The second section ('Internet Usage Practices') examined online behaviour, including the frequency of use, perception of online information reliability, as well as commonly used digital information sources. The third section of the questionnaire ('Disinformation'), investigated the participants' awareness of disinformation activities and associated risks. The respondents were also asked to indicate the key reasons for intentional dissemination of false information online, leading to user deception. The questions concerning disseminating false information, primarily via social media, were particularly relevant. The final section of the questionnaire ('Prevention and Education'), aimed to identify students' self-protective measures against online disinformation and their proactive strategies for mitigating it. The survey also investigated educational methods capable of improving understanding of disinformation and strengthening resistance to false narratives propagated through various information channels.

Google's Looker Studio and Microsoft Excel were utilized for data aggregation. Data analysis was conducted using Python (3.11.8), along with pandas (2.2.1) and factor_analyzer (0.5.1) libraries. A chi-square test of independence was conducted on a subset of questions to validate the hypotheses.

Results and Discussion

A total of 120 complete responses were received. Among the participants, 95 were women (79.2%), 24 men (20%), and 1 individual chose not to disclose their gender (0.8%). The participants represented various academic disciplines within media and communication studies, including:

international business and development (90; 75%), economics (14; 11.6%), communication and contemporary media for creative industries (9; 7.5%) and computer science (6; 5%). One respondent (0.8%) did not provide information regarding his/her field of study. The predominant age group of respondents was 19 to 25 (109; 90.8%). The second largest demographic was individuals aged 26 to 35 (9; 7.5%), followed by the 36 to 45 age range (2; 1.6%) in. Regarding participants' places of residence, they were given the option to indicate whether they lived in a city/town or the countryside. 68 respondents (56.7%) indicated living in a city/town, while 52 (43.3%) reported living in the countryside.

As established, the survey was divided into several key sections, within which respondents were asked specific questions. The first series of questions concerned **internet usage practices**. Initially, participants were queried regarding their internet usage, with three predefined responses options. All participants (120; 100%) answered that they used the internet daily. Information verification is paramount; consequently, a decision was made to assess the students' information-verifying behaviour from alternative sources. Among the respondents, 50 (41.7%) firmly stated that they did verify information, and 44 (36.7%) reported that they did that to some extent. 14 individuals (11.7%) reported a lack of attention to information verification; 10 (8.3%) did not provide an answer and 2 (1.7%) stated that they did not check the accuracy of information on the internet.

In the subsequent phase of the study, participants were asked to indicate factors that enhance the credibility of information on the internet, allowing them to select up to three key responses. The leading factor identified was the source of information (110 indications; 91.7%). This was followed by supporting the statement with an authority in the field (75 indications; 62.5%), whereas presenting the issue from multiple perspectives ranked third (60 indications; 50%). Additional responses included the trustworthiness of the media from which information is obtained (53; 44.2%), the appearance of the same information across different media channels (50; 41.7%), and receiving information from a trusted individual (12; 10%).

Then, participants were inquired about their experiences with false information online. A significant majority (90%) reported encountering such misinformation. Among these, 66 individuals (55%) indicated they encountered false information several times a week, while 17 individuals (14.2%) noted daily encounters. 12 respondents (10%) were unsure if they had encountered such content online. The same number (12; 10%) admitted encountering false content several times a month, and 11 participants (9.2%) did so less frequently, approximately once a month. Only 2 respondents (1.7%) encountered misinformation at least once a week.

The first set of questions concluded by asking about the digital sources of information most used by respondents. The respondents could select multiple answers or provide a unique response if none of the listed options were suitable. The latter option was chosen only by four participants, with the following responses: radio, podcasts, newsletters, mobile applications and other sources. Social networks received the most indications (90; 75%), followed by online video content services (64; 53.3%), as well as press services and television news programmes (58; 48.3%). This was followed by the most popular internet portals (51; 42.5%), press services (41; 34.2%), thematic services (36; 30%), independent news portals (35; 29.2%) and blogs (23; 19.2%). Only 12 respondents (10% of the sample) indicated instant messaging.

The second set focused on **disinformation** and began with a question about the most common forms of disinformation found on the internet. In this case, participants could select three most important answers. Fake news was the most frequently indicated option (118; 98.3%). The second place was held by false photographs (66; 55%), followed closely by false videos and deepfakes (54; 45%). The respondents also indicated trolling (49; 40.8%), posting information from fake accounts (36; 30%), bots (26; 21.7%) and posting false recordings (11; 9.2%). As a follow-up to the first question, the second one focused on the forms of disinformation they had personally encountered. Again, the respondents could select three key answers. Consistent with the previous question, fake news was noted by 108 participants (90%), followed by fake photos (74; 61.7%) and trolling (54; 45%). Other answers included fake videos and deepfakes (49; 40.8%), posting information from fake accounts (41; 34.2%) and bots (26; 21.7%). The least frequently indicated option was 'posting false recordings' (8; 6.7%).

One of the key aims of the study was to investigate students' awareness of the purpose of disinformation activities online. Thus, participants were asked to choose three from among thirteen possible responses. They were also given the option to provide their independent responses. The response 'misleading the public' received the highest number of indications (66; 55%). 'Distracting attention from other issues, events, etc.' was the second most frequently chosen option (51; 42.5%). 'Coercing recipients to adopt attitudes aligned with the disinformer's aims' (45; 37.5%) secured the third place. The subsequent positions were occupied by: 'generating negative opinions about others' (38; 31.7%), 'creating a misleading image that contributes to an inaccurate analysis of the situation' (37; 30.8%), 'coercing the recipient into specific behaviours' (26; 21.7%) and 'formulating negative opinions about other nations' (23; 19.2%).

The following options demonstrated a significantly lower popularity: 'generating a sense of uncertainty' (18; 15%), 'establishing a false image

that may lead to incorrect decision-making' (16; 13.3%), and 'creating a perception of danger and misleading the recipient regarding actual plans of action'. The latter two reasons received 13 responses (10.8%). The least mentioned reasons included:' acquiring sensitive data from recipients' (10; 8.3%), 'achieving an element of surprise' (3; 2.5%) and 'altering the perception of the world' (1; 0.8%).

In addition to identifying the causes of misinformation proliferation, it was essential to examine who the respondents believed to be primarily responsible for generating false content. They were asked to determine the most commonly attributed sources of false online messages. A total of 102 individuals (85%) indicated that internet users who unreflectively share received messages were often the principal contributors. The subsequent most frequently identified groups included: individuals trained explicitly for that purpose (55; 45.8%), website editors (51; 42.5%), politicians (46; 38.3%) and representatives of the government/authorities (44; 36.7%). Furthermore, 15 respondents (12.5%) identified intelligence services, while 11 (9.2%) indicated secret services. The options suggested by the respondents themselves received the fewest mentions: 'Russian trolls', 'all of us', and 'troll farms' (one mention each).

In the subsequent phase of the study, the participants were asked to identify the topics of fake news they encounter most frequently online. They could select multiple responses. Vaccination received the most indications (101; 84.2%), followed by climate change (74; 61.7%), the war in Ukraine (65; 54.2%) and 5G technology (63; 52.5%). A smaller number of responses were recorded for the following issues: refugees (52; 43.3%), the flat Earth theory (51; 42.5%), abortion (47; 39.2%) and ethnic and national minorities (45; 37.5%). The topics attracting the least attention included the greenhouse effect (27; 22.5%) and sexual minorities (23; 19.2%), with only a few mentions for topics such as Palestine, pop culture, depression, EU law, as well as public figures' health and life.

In the light of ongoing information warfare, certain countries demonstrate a heightened vulnerability to disinformation. It is widely recognised that authoritarian regimes often execute such campaigns to undermine their adversaries, particularly by fostering disorder and manipulating residents. In a follow-up question, the participants were asked to identify which countries they believed were most active in disseminating disinformation online. Most respondents (100; 83.3%) indicated Russia. Other frequently named countries included: the USA (81; 67.5%), China (62; 51.7%) and Israel (52; 43.3%). Fewer mentions were recorded for other countries: Iran (21; 17.5%), Iraq and Ukraine (both options scored the same result – 11; 9.2%), Belarus (7; 5.8%), Germany (4; 3.3%) and Poland (3; 2.5%). Notably, Libya and Lithuania were not mentioned, while Italy and Palestine each received a single mention.

The next question explored the threats associated with disinformation in cyberspace. Respondents were invited to select the three most pressing concerns; the results indicated a clear priority. The majority of participants (64; 53.3%) 53.3%) identified the destabilization of the political situation as the most significant issue. A nearly equal number (61; 50.8%) highlighted the destabilization of the social situation. Other concerns received fewer votes, including: creating chaos (53; 44.2%), dividing citizens (50; 41.7%), destabilizing the economic situation (35; 29.2%), radicalization of society (31; 25.8%) and undermining recipients' decision-making (30; 25%). The issues that garnered the lowest response were intimidation (18; 15%) and a decline in national security (15; 12.5%).

The subset of questions addressing disinformation concluded with inquiries regarding strategies for building resilience and ensuring protection against this phenomenon. Participants were asked to identify measures that should be taken. The majority of participants (82; 68.3%) noted that enhancing individuals' capacity to verify the accuracy of information represents the most effective defence against false information. The second most preferred option included encouraging recipients to verify information accuracy and improving the ability to assess the sender's credibility (76; 63.3%). A smaller proportion of the respondents (61%) favoured the ability to verify the message sender's identity (61; 50.8%). Other measures included: not endorsing false information with expert opinions (38; 31.7%), restricting sender anonymity (28; 23.3%), supporting the information with credible video footage (27; 22.5%) and permitting content publication by users with relevant skills (20; 16.7%). Furthermore, a slightly smaller number (17; 14.2%) emphasized the importance of statistical data in enhancing the credibility of information. Only 10 respondents (8.3%) considered the ability to contact the sender as the most significant measure to prevent misinformation. Additionally, some respondents offered suggestions for improvement, including enhancing education, providing contexts under posts, and implementing preventive measures.

The final question focused on the recipient's vulnerability to disinformation activities. Respondents could select their top three answers from the options provided or suggest their own. Two proposals garnered nearly identical numbers of responses: raising awareness about the existence of disinformation (56; 46.7%) and increasing the recipients' knowledge about the various forms of disinformation activities (50; 41.7%). In the third place, students frequently emphasised two key activities: adopting a critical approach to information and promoting knowledge on how to guard against disinformation, with each receiving 37 votes (30.8%). Additionally, 32 individuals (26.7%) highlighted the importance of using tools to verify fake accounts. The next tier of responses featured three activities – reduc-

ing information overload, conducting social campaigns, and implementing appropriate security algorithms online (all of which each received 31 votes (25.8%). Much less emphasis was placed on closing fake accounts (14; 11.7%), collaborating with social media administrators (13; 10.8%), enforcing penalties for spreading misinformation and introducing relevant regulations (10; 8.3%). The least favoured suggestion was slowing the pace of life (since when too fast, the pace of life could lead to superficial information verification), which received just 8 votes (6.7%). Notably, no one chose to provide an independent response.

The final section addressed 'Education and Prevention of Disinformation on the Internet'. Here, participants were asked about the strategies for enhancing their resilience against false information in the digital space. In the initial question of this section, respondents were invited to identify the measures they take to mitigate misinformation online, selecting up to three of the most relevant options from a provided list. The findings revealed that the most prevalent approaches included verifying the source of information (108; 90%) and seeking confirmation from multiple sources (100; 83.3%). Other noteworthy responses included consulting expert opinions in specific fields (74; 61.7%) and maintaining a critical perspective on online content (69; 57.5%). A small minority, comprising 8 respondents (6.7%), acknowledged that they did not actively engage in practices to reduce their exposure to disinformation. In contrast, only 1 individual (0.8%) indicated that he/she sought similar information from other sources for comparison.

Educational initiatives are pivotal in the ongoing effort to combat misinformation on the internet. Therefore, the survey concluded with a question on this subject. Respondents were presented with a consistent list of options for the final two inquiries, with the freedom to select multiple answers and provide additional input if desired. When asked about the methods of education regarding disinformation that they had previously utilized, most participants indicated lectures (78; 65%). Substantially fewer responses were recorded for the following alternatives: online training (47; 39.2%), online workshops (31; 25.8%), phone applications (27; 22.5%), stationary training (22; 18.3%) and standard workshops (17; 14.2%). Computer games (11; 9.2%) and board games (8; 6.7%) received the least votes. Among the suggested methods of acquiring knowledge about disinformation were university classes, YouTube videos, documentaries, and online instructional materials.

Respondents were also asked to identify the most effective means of conveying content related to safeguarding against false information published online. Online training was the most frequently selected method (83; 69.2%). Nearly as many participants noted the utility of phone applications (65; 54.2%)

and lectures (61; 50.8%). Additional suggestions ranked lower on the list, including computer games (53; 44.2%), online workshops (50; 41.7%), stationary training (18; 15%), board games (16; 13.3%) and standard workshops (14; 11.7%). Supplementary proposals included film material on YouTube and targeted social media campaigns.

The statistical analyses performed allowed us to verify the hypotheses we formulated. First of all, the results of the study did not support the first hypothesis, which stated that women verify information more often. A test of linear relationships was performed. The sign of the z-score statistic indicates that **there is no basis to assume that gender is dependent** on the answer to the question 'Do you check information posted on the internet in other sources?' (Table 1).

Table 1. The relationship between gender and the frequency of information verification

	Women	**Men**
Definitely not	1 (1,09%)	0 (0,00%)
Probably not	17 (18,48%)	5 (9,62%)
Hard to say	17 (18,48%)	6 (11,54%)
Probably yes	44 (47,83%)	29 (55,77%)
Definitely yes	13 (14,13%)	12 (23,08%)
Test statistic	z-score	p-value
81	1,427	0,154

Source: Own work.

Unfortunately, it **was not possible** to determine whether age affected the recognition of disinformation. The study involved students, the majority of whom were aged 19-25, so the study sample was too homogeneous to conduct such an observation.

To conduct further analyses, we had to perform some transformations of the data. Answers to the open-ended question regarding the field of study were grouped in the following way:

– international business and development, international business, ibd, master degree in international business and development, masters in international business and development, internation business and development, master degree in international business, international business development, master in international business development, Letizia Barbolini international business and development, international business and development (an economic course), international, business;

– economics, economy, économie, economia, economia, economia, economics – international business and development;
– communication - comunicazione e media contemporanei per le industrie creative, communication, communication and media, communication and contemporary media for creative industries, communications, communication for entertainment.

We assigned the label 'Other' to the remaining answers. In this way, we created 4 groups of the most numerous fields of study. Below is a table summarizing this procedure (table 2).

Table 2. Types of the respondent's fields of study selected during the study

Field of study	Number of students
International Business and Development	84
Economics	13
Communication	7
Other	16

Source: Own work.

The tests conducted at the last stage of the research to check whether the field of study significantly depended on the answer to the question 'Who spreads false information on the internet?' did not show any significant dependencies (table 3).

Table 3. Results of the chi-square test of independence for one of the four questions included in the in-depth analysis: 'Who spreads false information on the internet?'.

	chi^2-statistic	dof	p-value	p-corrected
Politicians	6.3402	3	0.0962	0.5771
Representatives of the authorities	11.9580	3	0.0075	0.0527
Secret services	0.8938	3	0.8269	1
Intelligence services	3.8263	3	0.2808	1
Internet users	1.6437	3	0.6495	1.0000
People specially trained in this area	5.7238	3	0.1258	0.6292
Editors of websites	2.4579	3	0.4830	1

Source: Own work.

Conclusions

The findings of our study aligned with the expectations, given that students are frequent users of the internet. A considerable percentage of

respondents indicated that they verify the information encountered through this communication channel; however, a notable proportion either did not respond to this inquiry or explicitly stated that they do not engage in verification. It appears that the respondents recognize key factors influencing the credibility of information, identifying reliable sources, endorsement by authorities, and objective presentation of facts as central elements. Nevertheless, many young individuals highlighted subjective factors, such as trust in the medium or the individual providing the information, as influential in their decision-making processes.

The observed high level of exposure to disinformation among the participants was anticipated; however, it was surprising that 10% of respondents could not determine whether they encountered such content. This may suggest a lack of awareness of how to identify disinformation or an underestimation of its importance. Among the various types of false content mentioned, respondents frequently identified fake news and misleading visual or audiovisual materials, which was expected. Additionally, trolling received considerable attention and was commonly reported in the context of disinformation exposure.

According to the surveyed students, the primary objective of disinformation is to mislead the public for various reasons. They believe it often serves to divert attention from other pressing political and social issues. Furthermore, respondents identify manipulative motives, suggesting that disinformation aims to influence a broad audience toward specific attitudes and viewpoints aligned with the disinforming entity. However, the notion of coercing behaviour received comparatively fewer indications. Interestingly, a related option concerning shifts in the audience's perception of the world, which may reflect changes in values, garnered less than one per cent of indications. Notably, a relatively small percentage of respondents believe that disinformation has the potential to cultivate negative attitudes toward other nations.

It is noteworthy that a substantial portion of the surveyed individuals encountered misinformation regarding vaccinations and climate change. A significant percentage of respondents also reported having encountered misleading information related to the war in Ukraine, 5G technology, refugees, the flat Earth theory, abortion, and issues concerning ethnic and national minorities. In contrast, there were significantly fewer cases of misinformation related to the greenhouse effect. This may be attributed to the broader context of the climate issue, which was prominently featured in the responses. Furthermore, misinformation regarding sexual minorities was reported less frequently among the students. This may be reflective of the respondents' age, as young people in Europe generally exhibit open-mindedness and positive attitudes toward this subject. Consequently, media

messages promoting misinformation on this topic may be less effective within this demographic. It is also pertinent to highlight that Italy is one of the European nations where this issue is addressed by law. However, with the establishment of a conservative government following the recent elections, discussions surrounding this topic have become increasingly prominent in Italian media.

When students were asked about the key actors in disinformation efforts, many identified Russia as a primary contributor. However, a notable number also mentioned the United States, China, and Israel. These entities are involved in various conflicts, encompassing military and political dimensions. It is noteworthy that among national disinformers, Italy received one of the lowest percentages of indications. Students at an Italian university articulated their concerns regarding disinformation, highlighting that the most significant threats within the digital information landscape are the potential destabilization of political and social structures and decreased national security. However, they regard this as a lesser threat overall. Concerning the enhancement of resilience against disinformation, nearly 70% of the respondents believe that improving individuals' capacity, precisely their skills, knowledge, and ability to verify information, would be advantageous. This view is reinforced by the participants' focus on the significance of education and preventive measures. Furthermore, the students indicated a preference for authoritative guidance while navigating information; they attach great importance to the credibility of those disseminating messages and the insights offered by experts in the field. The importance of educational initiatives is further demonstrated by their responses to the final question in this section of the survey.

The final section of the survey examined educational initiatives related to the topic. The respondents reported encountering various educational activities, primarily lectures and online training sessions. However, fewer participants had engaged in online or traditional workshops, and an even smaller number had utilized mobile applications for educational purposes. A modest percentage of the respondents noted their experience with educational games, both in digital and traditional formats, and subsequent questions indicated that this approach to knowledge transfer is appealing to students.

The findings demonstrate that disinformation is a recognized component of the information landscape among social sciences students at an Italian university. This is perhaps unsurprising, given that the internet is the dominant channel for information dissemination and the pervasive use of social media platforms. Students are aware of the existence of disinformation, its serious consequences, the main actors involved, and its social impact. They also express interest in educational activities related to this topic.

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Praktyki i postawy wobec działań dezinformacyjnych wśród studentów zajęć medialnych na Uniwersytecie w Parmie – badanie pilotażowe

Streszczenie

Artykuł powstał w celu zwrócenia uwagi na praktyki i postawy wobec dezinformacji przyjmowane przez studentów wybranych kierunków studiów związanych z zarządzaniem informacją i mediami, prowadzonych na Università di Parma. Badania przeprowadzono metodą sondażu diagnostycznego na grupie 120 osób (próba badawcza 60%). Ankietowani studenci to codzienni użytkownicy Internetu. Większość respondentów zadeklarowała, że weryfikuje informacje wyszukane w Internecie. Czynnikami wpływającymi na wiarygodność informacji są wiarygodne źródło, poparcie autorytetu i brak stronniczości w przedstawianiu faktów. Studenci zadeklarowali, że zetknęli się z treściami dezinformacyjnymi, a najczęstszymi przykładami tego zjawiska są *fake newsy*, fałszywe treści wizualne i audiowizualne oraz *trolling*. Według respondentów głównym celem dezinformacji jest wprowadzenie w błąd opinii publicznej motywowane różnymi powodami. Niewielki odsetek respondentów zauważył, że dezinformacja może powodować negatywne nastawienie do innych narodów. Nie dziwi fakt, że duża część badanej grupy zetknęła się z dezinformacją dotyczącą szczepień czy zmian klimatycznych. Znaczny odsetek odbiorców miał styczność również z treściami dotyczącymi wojny na Ukrainie, technologii 5G, uchodźców, ale także teorii płaskiej ziemi, aborcji oraz mniejszości etnicznych i narodowych. Studenci wskazują na Rosję jako głównych aktorów na scenie dezinformacyjnej. Respondenci zauważyli także, że największym zagrożeniem ze strony dezinformacji w Internecie jest destabilizacja sytuacji politycznej i społecznej, przy jednoczesnym obniżeniu bezpieczeństwa narodowego, wskazując je jako jeden z najmniej zagrażających czynników.

Słowa kluczowe: dezinformacja, *fake newsy*, studenci, zachowania, postawy, edukacja, opór