

Mediterranean Digital Media Observatory

D3.3

Impact assessment of disinformation campaigns report

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Abstract	This deliverable documents the work conducted within Work Package (WP) 3 and specifically Task 3.3, concerning the impact assessment of disinformation campaigns in Greece, Cyprus, and Malta..

Keywords	Questionnaire, interviews, focus groups, experiment, impact assessment, disinformation campaigns

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Glossary

Abbreviation	Meaning
D 3.3	Deliverable (3.3)
EU	European Union
MedDMO	Mediterranean Digital Media Observatory
T 4.4	Task 4.4
WP	Work Package

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Executive Summary

This report, D3.3, focuses on the impact assessment of disinformation campaigns in Greece, Cyprus, and Malta, conducted as part of the MedDMO project (Project ID 101083756). The study employed a multi-faceted approach, including questionnaires, focus groups, interviews, and an experiment, to understand media literacy needs, public perceptions of disinformation, and effective strategies to combat its spread.

Across all three countries, there is a widespread public concern regarding disinformation, particularly concerning politics, health, and international affairs. Social media is consistently identified as the primary channel for encountering false information. While text-based disinformation is common, images and videos present unique challenges for verification. Although individuals possess some awareness and basic verification skills, many still fail to verify information, highlighting a significant vulnerability. The public emphasized the critical need for media literacy education, promoting critical thinking, and responsible information sharing.

Focus groups with journalism students in Greece, Cyprus, and Malta reinforced the concerns identified in the questionnaires and interviews. These students demonstrated an informed awareness of disinformation markers, such as exaggerated language, unreliable sources, and falsified visuals. They acknowledged that while digital familiarity aids rapid information processing, it can also increase vulnerability to misinformation due to overexposure. Discussions highlighted the negative societal impacts of disinformation, including prejudice, polarization, and public mistrust, especially concerning sensitive topics like migration and public health. The crucial role of the education sector in addressing disinformation and adapting to new technologies was emphasized.

Interviews both with members of the general public and professional journalists in Greece, Cyprus, and Malta echoed the central role of social media in spreading false content and the urgent need for media literacy and regulatory frameworks. Interviews' further analysis also highlighted disinformation's impact on participants' emotions, with frustration and disillusionment being dominant each time they were misinformed. Both groups stressed the importance of education, early intervention, and practical tools, including AI-powered verification and citizen engagement. Journalists, in particular, highlighted the gap between theoretical knowledge of verification tools and their practical application in daily work, and the need for better training and resources.

The experimental study, focusing on climate change disinformation among media-literate young audiences, revealed that message accuracy and format significantly influence emotional and cognitive responses. Factual messages delivered in audio or video formats elicited significantly higher levels of fear, anxiety, motivation to act, and concern, and were perceived as more credible. Conversely, misleading messages led to increased indifference, lower hope, and reduced plausibility ratings. The experiment demonstrated that accurate, multimedia storytelling effectively deepens engagement and boosts support for stringent climate policies, even among already concerned audiences, while mindful visual framing can mitigate the appeal of misleading narratives.

The comprehensive findings from all methodologies underscore a consistent picture: despite a strong awareness of disinformation tactics among media-literate audiences, they remain susceptible to emotional and cognitive influence based on message accuracy and format. There is an urgent need for coordinated, systemic responses to disinformation across education, media, and technology. This includes promoting fact-based multimedia communication, targeted education initiatives, and robust structural measures to counter the evolving impact of disinformation. The research provides clear evidence of disinformation's influence within different cultural and media contexts in Greece, Cyprus, and Malta, highlighting its impact on public perception,

emotional response, and engagement.

1. Introduction

T3.3 aims to identify media literacy needs (in line with T4.1 and T4.2) and specific disinformation impact in Greece, Cyprus, and Malta. Furthermore, D3.3 investigates the reception of disinformation campaigns from both a supply (content) and demand (audience characteristics and interpretive practices) perspective, taking into account the cultural, political and media contexts of the three countries, and how the latter shape people's relation with disinformation and democratic engagement in the public sphere. The quantitative methods used include (a) an online representative survey conducted through questionnaires disseminated in all three countries, that identify current media literacy needs and gather responses from individuals considered part of MedDMO's audience to map public's perceptions of disinformation campaigns, (b) individual interviews along with focus groups in all three countries (n = 63), consisting of 7 interviews and an average of 14 focus group participants per country, that map how people make sense of disinformation campaigns, drawing upon interpretive and evaluative resources derived from their cultural, political and ideological contexts, and c) an online survey-embedded experiment that examines which features of disinformation campaigns make them especially effective to young audiences.

2. Data collection through questionnaires

In the context of the present work, an anonymous survey was conducted in the form of a questionnaire, entitled "A Survey on Media and Information Literacy by MedDMO". The questionnaire was prepared in two languages: Greek and English. The Greek version was disseminated in Greece and Cyprus, while the English version was distributed in Malta. The questionnaire was designed to identify media literacy needs and indicate the impact of disinformation across these countries. The objective of this survey was to gather responses from individuals according to specific criteria, such as language, ethnicity, education, and political orientation, with the aim of mapping the public's perception of disinformation campaigns.

2.1 Results from Greece

The questionnaire, which was distributed in Greece, included three sections. The objective of Section 1 was to gain an initial understanding of the participants' prior knowledge and habits with regard to consumption of news content, their awareness of misinformation and their strategies for dealing with it. Section 2 of the questionnaire concerned the participants' attention, judgement and criteria for screening and comparing their attitudes towards fake and misrepresented content. For these reasons, three different types of news content (articles/text, images and videos) were shown/presented to the participants and they were asked to observe them and then choose the actions they would take in real life. These included the classification of the content as true or fake, the sharing of the content on social media, and the selection of the reasons for sharing the content on social media. This section was designed to examine the cognitive processes and subsequent actions of the participants with regard to the reception, dissemination and consumption of information, with a particular focus on the propagation of fake news. The term “fake news” was selected due to its widespread recognition among the general public and its frequent use by reputable research institutions, such as the Reuters Institute for the Study of Journalism, to describe related forms of misleading or false content. Section 3 concerned the personal information of the participants, namely the demographic data of the survey.

Section 3 pertains to the demographic characteristics of the participants, including the total number of people who took part in the survey (N=1,574). In terms of the descriptive statistics pertaining to the total number of responses, 1,183 cases were deemed valid while 391 were considered invalid, without depicting a response (missing value/system missing case). A further descriptive statistical analysis was conducted on the variable "Country". Of the 1,183 cases, 878 were categorized as "Greece", 291 as "Cyprus" and 14 as "Other". In other words, the proportion of cases in the sample that gave valid answers for the variable in question is defined as 74.22% for the category "Greece", 24.60% for "Cyprus" and 1.18% for "Other". It is first necessary to note that this questionnaire was drafted in Greek and English. The responses to the Greek version pertain to two countries: Greece and Cyprus. This part of the report focuses on the participants concerning the variable "Greece". Consequently, the descriptive statistics of the survey indicate that of the 883 cases pertaining to the variable "Greece", 878 are considered valid responses to the questionnaire, with the remaining 5 cases classified as missing values or system missing cases.

To gain further insight into the data presented in Section 3, it was valuable to examine some additional descriptive statistics concerning the variables "Gender", "Age" and "Highest Level of Education". With regard to the variable "Gender", it can be observed that of the 878 valid responses, 359 are in the "Male" category, 501 in "Female", 6 in "Other" and 12 in "Prefer not to say". In other words, the proportion of cases in the sample falling within each value of the variable (valid percent) is as follows: The proportion of respondents in the "Male" category was 40.89%, while those in the "Female" category constituted 57.06%. The "Other" category accounted for 0.68% of respondents, while those who selected "I prefer not to say" represented 1.37% of the total sample.

In consideration of the scale variable "Age" and the 878 valid responses, the mean age is established at 36.48 years. The standard deviation is 14.86 years, with a minimum value of 17 years and a maximum value of 65.5 years. In conclusion, with regard to the ordinal variable " Highest Level of Education" and based on the 878 valid responses, the median is identified as "Bachelor's Degree", the mode value as "High School Diploma", the minimum value as "Basic Education" and the maximum value as "Other" (Tables 1-3).

Table 1: Distribution of the sample (N=1574) by country of residence characteristics.

Variables	*n*	*%*
Country (total valid answers)	**1189**	**100**
Greece	**883**	**56.06**
Cyprus	**293**	**18.60**
Other	**14**	**0.89**

Table 2: Distribution of the sample (N=883) by gender characteristics.

Variables	*n*	*%*
Gender (total valid answers)	**878**	**100**
Male	**359**	**40.89**
Female	**501**	**57.06**
Other	**6**	**0.68**
Prefer not to say	**12**	**1.37**

Table 3: Distribution of the sample (N=883) by age characteristics.

Variables	*n*	*%*
Age (total valid answers)	**878**	**100**
18 >	**2**	**0.23**
18-20	**180**	**20.50**
21-30	**233**	**26.54**
31-40	**79**	**9.00**
41-50	**172**	**19.59**
51-60	**159**	**18.11**
61-70	**43**	**4.90**
71+	**0**	**0.00**
Prefer not to say	**10**	**1.14**

Variables	*n*	*M*	*SD*	*min*	*Max*
Age	**878**	**36.48**	**14.86**	**17**	**65.5**

Regarding the Section 1 of the questionnaire, the questions have been categorized into three key areas: a) interest, frequency and reasons for engaging with news, b) exposure, recognition, frequency and experience towards fake news and misinformation content, and c) ways of reacting to, perceiving and verifying misrepresented content. Considering the 878 valid cases, it is evident that the majority of respondents are interested and engaged in news. In response to the question "Are you interested in the news?", 744 respondents indicated a positive interest, representing 84.74% of the total number of respondents. In terms of experience with fake news, most respondents indicated that they had been exposed to manipulated content, with 758 positive responses, representing a percentage of 86.33%.

Moreover, the results of the survey indicated that most respondents had been exposed to fake news on a regular basis. In terms of frequency of exposure to fake news, 0.68% (6 cases) answered "Never", 13.33% (117 cases) answered "Rarely", 44.08% (387 cases) answered "Sometimes", 39.64% (348 cases) answered "Often" and 2.28% (20 cases) answered "Always". Therefore, it becomes understood that the majority of the respondents believe that they are often exposed to misleading content. Nevertheless, it is worth noting that most of the public considers the category "Social networking sites (e.g. Facebook, Twitter)" as the main and easiest way to find and spread fake news, with a percentage of 60.82%, i.e. 534 valid cases.

Furthermore, the majority of the respondents believe that they have not shared a news item that turned out to be false, which means that 501 respondents answered negatively, constituting a percentage of 57.06%. Finally, in terms of knowledge of the means of verifying a news item, the variable "I verify the information from various trustworthy news sources that I follow and read" has the largest number of respondents at 41.91% (368 valid participants chose this variable). However, it is important to note that the variable "I verify the information myself (e.g., examine the source/author)" comes next, with an equally high percentage (27.56%, i.e. 242 valid participants chose this variable) (Tables 4-5).

Table 4: Distribution of the sample (N=883) in terms of exposure to fake news.

Variables	*n*	*%*
Do you think you have been exposed to false news? (total valid answers)	**878**	**100**
Yes	**758**	**86.33**
No	**30**	**3.42**
I don't know	**90**	**10.25**
How often do you believe that you are exposed to false news? (total valid answers)	**878**	**100**
Never	**6**	**0.68%**
Rarely	**117**	**13.33**
Sometimes	**387**	**77.08**
Often	**348**	**39.64**
Always	**20**	**2.28**

Table 5: Distribution of the sample (N=883) in terms of actions to verify fake news.

Variables	*n*	*%*
What means of verification do you use to fact-check a news story? (total valid answers)	**878**	**100**

I verify the information myself (e.g., examine the source/author).	**242**	**27.56%**
I verify the information by visiting the website of a fact checking organization.	**34**	**3.87%**
I verify the information from various trustworthy news sources that I follow and read.	**368**	**41.91%**
I verify the information from the experts I trust and follow.	**75**	**8.54%**
I verify the information by using online tools/platforms for content verification (image, audio, video).	**49**	**5.58%**
I don't usually verify the news stories.	**96**	**10.93%**
Other	**14**	**1.59**

In Section 2, the respondents were presented with three different types of news (article/text, image and video) and were asked to judge whether the content is fake and then to choose which actions they would take in real life if they were exposed to fake news. Comparing the responses from all three different news genres, the first observation is that participants can more easily judge and distinguish between fake information when it is presented in text form, compared to image form, which seems to divide their opinions. The split is even greater for information presented in video format. According to the descriptive statistics, when asked if they were fake, the news with an article/text received the highest percentage of answers "Probably False" (350 answers with a percentage of 39.86%) and "False" (378 answers with a percentage of 43.05%). When it comes to news in the form of an image that also contains some text elements, the opinion of the participants begins to be divided: 3.30% (29 cases) consider the message to be "True", 19.13% (168 cases) "Probably True", 30.07% (264 cases) "Undetermined", 26.99% (237 cases) "Probably False" and 20.50% (180 cases) "False". This division is even more pronounced when the news is transmitted by video: 4.21% (37 cases) consider the news to be "True", 21.07% (185 cases) "Probably True", 42.14% (370 cases) " Undetermined", 20.27% (178 cases) "Probably False" and 12.30% (108 cases) "False".

Continuing with the three different news formats, most participants who indicated that they would share one of these examples did so because they felt that the information in the article was important and also because it was current news and this action would help them to keep up to date with any developments around them. As an illustrative example, we can take the second case, which concerns news in the form of pictures. Of the 878 valid answers, 29 participants (3.30%) chose to share this particular news item, 28 considered that the information was important and 20 that this action would help them to stay informed. In terms of the participants' general attitude towards the notification and sharing of different types of news, it is clear that the vast majority did not choose to share this action. As an example, the percentages from the case of news in video format are presented, as 97.04% (852 participants) did not choose to take the action of sharing. It is worth noting that there were some disagreements regarding the action of notifying. Specifically, in the question/statement "Sharing makes me feel influential and good to others", 51.71% (454 cases) agreed while 48.29% (424 cases) disagreed. A similar split was observed in the question/statement "Sharing helps me interact with people and get their opinions" where 53.64% (471 cases) of the respondents agreed while the remaining 46.36% disagreed.

Taking the above into account, the analysis of the aforementioned responses yielded several significant insights. Analytically, it is evident that the public is markedly engaged and interested in information and news. A substantial proportion of respondents indicated that they had encountered fake news and perceived it to be a prevalent phenomenon. The dissemination of misinformation via social media is a pervasive phenomenon. The most prevalent format of fake news is textual, with a particular focus on issues pertaining to politics and international relations. The majority of individuals seems to verify news stories using a variety of reliable and trusted sources, such as established news organizations, independent fact-checking platforms, official

government channels, international institutions, and academic or research-based sources, or by personally examining the source or author. In order to combat disinformation, the majority of participants highlighted that it is essential to verify information before sharing it. Furthermore, they emphasized the significance of digital and media literacy training in addressing this issue. Nevertheless, the veracity of news can fluctuate contingent on its format. The use of images and videos in reporting can be divisive, as it is often challenging to determine their authenticity. In general, the majority of the public would refrain from sharing a news item unless it is deemed important and potentially beneficial for acquiring more information.

Lastly, the results of the questionnaire indicate that disinformation and the dissemination of fake news are pervasive in people's daily lives, particularly in relation to political and international issues. The public is aware that they may be exposed to misrepresented content in specific forms, such as written news articles, , but not necessarily in others, such as images or videos. Although individuals are aware of some methods of verifying content, there is a strong desire to educate and train on how to combat this phenomenon. A key finding of the study is the clear necessity to educate individuals on the tools and tactics to combat disinformation. Moreover, research shows that individuals feel confident in their ability to verify or spot misinformation, as pertains to written news articles. However, this skill is primarily applied to news in textual form. It is recommended that emphasis be placed on learning to verify those news sources and formats that are considered more credible, such as images and videos. In conclusion, it is of the utmost importance to enhance media literacy, particularly in digital form, as it is an ever-evolving field that can significantly impact society and the proper functioning of democratic processes.

2.2 Results from Cyprus

The questionnaire, which was disseminated in Cyprus, consists of three main sections. Section 1 explored participants' news consumption habits, exposure to and perceptions of fake news, and their reactions and verification practices**.** Section 2 presented different news formats (text, image, video) and asked participants to assess their authenticity and indicate potential real-life actions when exposed to disinformation**.** Section 3 captured the demographic characteristics of respondents and the sample size.

To begin with, Section 3 provides an overall image of the number of respondents (N= 292) accompanied with their characteristics, including gender and age. Analytically, the questionnaire was completed by 292 participants from which 59.9% were female, 37.7% male, while a small number identified as other (0.7%) or preferred not to say (1.7%). Regarding age, the largest group was 41–50 years old (25%), followed by 21–30 (19.5%), 18–20 (18.8%), and 31–40 (16.4%). Smaller proportions were aged 51–60 (15.4%) and 61–70 (2.8%), with 2.1% choosing not to disclose their age (Tables 6-7).

Table 6: Distribution of the sample (N=292) by gender characteristics.

Variables	***n***	***%***
Gender (total valid answers)	**292**	**100**
Male	**110**	**37.70**
Female	**175**	**59.90**
Other	**2**	**0.70**
Prefer not to say	**5**	**1.70**

Table 7: Distribution of the sample (N=292) by age characteristics.

Variables					n	%
Age (total valid answers)					292	100
18-20					55	18.8
21-30					57	19.5
31-40					48	16.4
41-50					73	25
51-60					45	15.4
61-70					8	2.8
Prefer not to say					6	2.1
Variables	***n***	***M***	***SD***	***min***	***Max***	
Age	**292**	**4,13**	**1,60**	**1,00**	**9,00**	

Section 1 of the questionnaire was divided into three categories: a) interest, frequency and reasons for engaging with news, b) exposure, recognition, frequency and experience towards fake news content, and c) ways of reacting to, perceiving and verifying misrepresented content. In terms of analyzing the corresponding responses, nearly all participants indicated that they were aware of the phenomenon of online mis- and disinformation and recognized that some news published or posted online can be false or misleading. Supporting this, nearly 77% (224 answers) reported that they believed they had been exposed to such news content in the past. Regarding the frequency of encountering false news online ("How often do you believe that you are exposed to false news?"), 37.33% of respondents reported that they often encounter it, while around half (46.23%) reported encountering it sometimes, and 14.38% rarely. Additionally, most respondents (around 64% with 186 answers) stated that they had never knowingly shared a news story on social media that turned out to be false. It is worth noting that nearly 31% (90 answers) mentioned being unaware of having done so, and only 5.5% (16 answers) admitted to having knowingly shared false information (Table 8).

Table 8: Distribution of the sample (N=292) in terms of exposure to fake news.

Variables	n	%
Do you think you have been exposed to false news? (total valid answers)	292	100
Yes	224	76.7
No	14	4.8
I don't know	54	18.50
How often do you believe that you are exposed to false news? (total valid answers)	292	100
Never	3	1.03
Rarely	42	14.38
Sometimes	135	46.23
Often	109	37.33
Always	3	1.03

Furthermore, respondents were also asked to identify the platform where they most often encounter false news. Social media was by far the most prevalent response (74%), followed by news websites (11%) and TV stations (5.1%). To address the issue of the forms of content in which people most often encounter false or misleading news, respondents shared their experiences in consuming news. The majority (around 60% with 179 answers) indicated that text is the format in which they most frequently encounter false news (e.g., clickbait articles/posts), followed by images (27%, 80 answers) and video content (11%, 32 answers) (e.g., AI-generated media and deepfakes). Moreover, the majority of participants (around 78%) reported being worried, acknowledging the risks this phenomenon can cause, with 33% extremely concerned and 45% moderately concerned. In another question, the participants were asked to report the methods used, if any, to verify a news story they found online (figure 4). The most common method (around 40%) was verifying information by consulting various trustworthy news sources that they follow and read. It is important to note that a significant portion (one in four) mentioned that they conduct their own verification (e.g., by examining the source or author). However, approximately 15% reported that they do not usually verify news stories. Other responses included verifying information from experts they trust and follow (7.19%), visiting the website of a fact-checking organization (5.82%), and using online tools or platforms for content verification, including image, audio, and video (4.11%). Finally, participants were also asked for their opinions on how individuals can contribute to the fight against disinformation. The majority suggested verifying information before sharing it (67.8%), followed by educating themselves and others (60.6%), and following and reading trustworthy news sources (56.5%). Additionally, around one-third (32.2%) mentioned that participating in digital and media literacy training activities is also important in addressing this issue (Tables 9).

Table 9: Distribution of the sample (N=292) in terms of actions to verify fake news.

Variables	*n*	*%*
What means of verification do you use to fact-check a news story? (total valid answers)	**292**	**100**
I verify the information myself (e.g., examine the source/author).	**73**	**25**
I verify the information by visiting the website of a fact checking organization.	**17**	**5.82**
I verify the information from various trustworthy news sources that I follow and read.	**116**	**39.73**
I verify the information from the experts I trust and follow.	**21**	**7.19**
I verify the information by using online tools/platforms for content verification (image, audio, video).	**12**	**4.11**
I don't usually verify the news stories.	**44**	**15.07**
Other	**9**	**3.08**

In Section 2 of the questionnaire respondents were presented with three different types of news (article/text, image and video) and were asked to judge whether the content was fake and then to choose what actions they would take in real life if they were exposed to fake news. Comparing responses across the three different news formats, the first notable observation is that participants found it easier to judge and distinguish fake information when it was presented in text form (news article) compared to image-based formats (such as social media posts containing some text) or video formats, which tended to divide their opinions. Specifically,

based on our analysis and the descriptive statistics, when participants were asked whether the information was fake, news presented in article/text format received the highest proportion of "False" responses (131 responses, or 44.9%) and "Probably False" responses (97 responses, or 33.2%). In contrast, responses were more evenly distributed for the other two formats, with the highest percentage (in both cases) falling under the "Undetermined" category. Specifically, for the image/social media post format, the breakdown was as follows: 5.5% (16 responses) considered the message "True," 18.5% (54 responses) "Probably True," 30.8% (90 responses) "Undetermined," 22.9% (67 responses) "Probably False," and 22.2% (65 responses) "False". Interestingly, the percentage of "Undetermined" responses increased significantly in the case of video-based news. In this format, 5.1% (15 responses) considered the news "True," 16.1% (47 responses) "Probably True," 49.7% (145 responses) "Undetermined," 14.4% (42 responses) "Probably False," and 14.7% (43 responses) "False".

Moreover, the vast majority of participants chose not to share any of these types of news. Among those who did, the most common reasons included the perception that the information was important, that it could serve as a good topic for conversation or expression of opinion, and that it was current and helped provide understanding of a particular event or situation. Finally, regarding participants' general attitudes toward the practice of sharing (e.g., Why do you generally share an article?), the most popular responses were: "Sharing makes me feel influential and good to others" (62.7%, 183 responses), "Sharing helps me interact with people and get their opinions" (52.8%, 154 responses), and "Sharing helps me bookmark useful information" (29.8%, 87 responses).

Taking the above into account, this study investigated the phenomena of online mis- and disinformation in Cyprus, focusing on people's perceptions of the issue as well as the characteristics that enable disinformation campaigns to go viral. The questionnaire examined news consumption habits, public concerns about the impact of online disinformation, exposure to false or misleading content, common sources, verification methods, and levels of media literacy. Overall, our findings highlight the widespread presence of mis- and disinformation in the daily lives of Cypriots, with a high level of exposure reported, particularly in news topics such as politics and international relations, lifestyle, business/economy, and health. As expected, social media was identified as the primary platform through which respondents encountered false information, with news websites and television following at a significant distance. In terms of content form, most respondents reported encountering false news most frequently in text form, followed by images and videos.

In general, the majority of participants expressed a high level of concern about online disinformation and its negative impact on society, highlighting the potential for AI technologies to amplify the creation and dissemination of false or misleading content. This concern is particularly linked to the use of advanced tools that can generate highly realistic text, images, audio, and video, making false information more convincing and significantly more difficult to detect. Regarding the verification process, the most common method reported was cross-checking information with different reliable news sources they regularly follow. However, a significant number of participants said they verify information on their own, and many admitted that they do not usually verify news at all, two findings that raise important concerns. To help combat the spread of disinformation, respondents suggested various individual-level actions. The most common recommendation was to verify the accuracy of information before sharing it, while others emphasized the importance of relying on trustworthy news sources, as well as the value of education and participation in digital and media literacy training programs. Finally, results from the second part of our study indicated that the use of images and videos in news reporting can make it more difficult for audiences to assess content credibility, as verifying their authenticity is often challenging. The disinformation landscape in Cyprus can be considered complex and multifaceted, posing a critical threat to the public sphere and presenting substantial challenges. Despite notable efforts to address information disorder, further action is needed from relevant stakeholders, particularly in the areas of digital/media literacy, fact-checking, and media regulation.

2.3 Results from Malta

The questionnaire distributed in Malta was structured into three main sections. Section 1 focused on participants' engagement with news, including their interest levels, frequency of news consumption, reasons for following the news, and experiences with sharing or verifying information. It also explored respondents' awareness of disinformation and their perceptions of its impact across various topics such as politics, health, and the environment. Section 2 involved a practical assessment, asking participants to evaluate the credibility of different content formats (text, image, video) and indicate how they would respond if exposed to potentially false or misleading information. This section highlighted how format influences participants' ability to detect disinformation. Section 3 collected demographic information about the participants.

In terms of Section 3, a total of 448 individuals (N= 448) completed the questionnaire. In terms of gender, 51.1% were male and 44.9% female, while smaller percentages identified as "Other" (0.4%) or preferred not to say (3.6%). Regarding age, the sample included a wide range of age groups, with the largest represented being 41–50 and 51–60 (both 17.2%), followed by 31–40 (16.5%) and 61–70 (13.8%). The mean age of respondents was 44.6 years, covering an age range from 17 to 76 (Tables 10-11).

Table 10: Distribution of the sample (N=448) by gender characteristics.

Variables	*n*	*%*
Gender (total valid answers)	**448**	**100**
Male	**229**	**51.11**
Female	**201**	**44.86**
Other	**2**	**0.44**
Prefer not to say	**16**	**3.57**

Table 11: Distribution of the sample (N=448) by age characteristics.

Variables	*n*	*%*
Age (total valid answers)	**448**	**100**
18-20	**59**	**13.16**
21-30	**38**	**8.48**
31-40	**74**	**16.51**
41-50	**77**	**17.18**
51-60	**77**	**17.18**
61-70	**62**	**13.83**
71+	**38**	**8.48**
Prefer not to say	**9**	**2.00**

Variables	*n*	*M*	*SD*	*min*	*Max*
Age	**448**	**44.62**	**18.37**	**17**	**76**

Regarding Section 1, the majority of participants (93%) said that they are interested in the news, with 74% visiting news sites daily. Politics and international relations are the most followed subjects, closely followed by the environment and science and technology. As might be expected, most respondents (89%) reported an increased interest in the news during major events, such as wars, pandemics, accidents or natural disasters. Although perhaps not significant in itself, this figure highlights the necessity of media literacy skills, since mis/disinformation tends to proliferate much more rapidly in crises and disasters, during which time tensions will be running high and people will be more anxiously seeking out information. As shown by Table 12, 83.7% of respondents believed they have been exposed to false news. When it comes to sharing habits, respondents mainly felt that sharing articles allows them to interact with others and that it is also a way of bookmarking useful information. However, some respondents also expressed their reluctance to share news articles online, with one commenting the following: 'Everything and everywhere [*sic*] could be fake news and manipulated. I share news issues about twice a year and aim to never share'. Besides hinting at a certain cynicism towards the media, this is also suggestive of a widespread reluctance to participate in public debate. It is important to note that, as reported by Reporters Without Borders (RSF) in its country profile, Maltese society 'suffers from deep polarisation' on 'almost every issue of public interest'. This has the effect of instilling a fear of being branded, shut down, or cast out, which exacerbates echo chambers.

Additionally, almost all respondents (99%) appeared aware that published content can be false. A high percentage (74%) are quite concerned about the impact and prevalence of mis/disinformation, with 33% saying that they come across it often and 50% saying that they do so occasionally (Table 12). Unsurprisingly, respondents believe that most mis/disinformation tends to appear in content related to politics and international relations (92%), environment (42%), and health (37%). These subjects are generally perceived as having a more immediate and direct impact on society – the typical distinction between 'hard news' and 'soft news' – and they are therefore more 'prone' to false information. Interestingly, 52% of respondents most frequently encounter false content in text form (such as social media posts or articles), while 46% tend to mostly come across it in a visual form (images and videos). A very small percentage (1.78%) indicated that audio was the most common form of mis/disinformation they encounter. When it comes to the leading medium for mis/disinformation according to respondents' personal experience, social media leads the way (73%).

Furthermore, most respondents said that they have never knowingly shared a story online that turned out to be false (63%). Interestingly, more said that they were unaware of having done so (24%) than those who gave a clear-cut 'yes' (12.5%). Of those who have shared mis/disinformation, around half said that they deleted their post after realizing the information was false, while a slightly smaller percentage (43%) said that they amended their post to point out that the information was false. Around 38% of respondents indicated that they are not aware of tools, techniques and verification platforms that can help them fact-check information for themselves. That being said, as can be seen in Table 13, almost half the respondents (42.6%) reported that they usually verify information by looking at various trustworthy news sources they follow. Around 23% of the sample assess the veracity of information for themselves by examining elements such as the content's source and author. Several respondents said that they rely on '[their] gut feeling' and 'critical thinking', with others elaborated by stating that they cross-check information with other websites, including fact-checking sites. Others reported using AI tools to obtain suggestions of potential sources for consideration, though a few who said they do so acknowledged that AI tools contain bias and are not always accurate in their responses. All this being said, however, 12.5% of respondents admitted they do not usually verify information, pointing to the need for improved media literacy. The most common response to the question 'how can individuals contribute to the fight against disinformation?' was that people can educate themselves and others (74%) – this, of course, is easier said than done, as people have to be willing to learn. This was followed by verifying information before sharing it (66%), following and reading trustworthy news sources (60%), and participating in media literacy training activities (26%). Some respondents mentioned actively 'seek[ing] out news that challenges their

worldview' and using 'common sense', while others suggested taking a more direct approach: 'stop supporting propaganda'.

Table 12: Distribution of the sample (N=448) in terms of exposure to fake news.

Variables	*n*	%
Do you think you have been exposed to false news? (total valid answers)	**448**	**100**
Yes	**375**	**83.70**
No	**17**	**3.79**
I don't know	**56**	**12.50**
How often do you believe that you are exposed to false news? (total valid answers)	**448**	**100**
Never	**2**	**0.44**
Rarely	**59**	**13.16**
Sometimes	**226**	**50.44**
Often	**146**	**32.58**
Always	**15**	**3.34**

Table 13: Distribution of the sample (N=448) in terms of actions to verify fake news.

Variables	*n*	%
What means of verification do you use to fact-check a news story? (total valid answers)	**448**	**100**
I verify the information myself (e.g., examine the source/author).	**104**	**23.21**
I verify the information by visiting the website of a fact checking organization.	**36**	**8.03**
I verify the information from various trustworthy news sources that I follow and read.	**191**	**42.63**
I verify the information from the experts I trust and follow.	**24**	**5.35**
I verify the information by using online tools/platforms for content verification (image, audio, video).	**23**	**5.13**
I don't usually verify the news stories.	**56**	**12.50**
Other	**14**	**3.12**

Lastly, the second part of the survey (Section 2) tasked respondents with discerning whether different examples of content (text, image and video) were genuine or fake, as well as what actions they would take were they to actually encounter such cases, specifically whether they would share the content or not. It is interesting to note that more respondents opted for a clear-cut 'False' in the cases of an article containing an image (50.22%) and a (then) Twitter post (29.46%) than in the case of a TikTok video clip (23.88%). The percentage of those who

selected ‘Undetermined’ was significantly higher for the latter (24.77%) and the Twitter post (20.75%) than for the article and image (7.36%). In all three scenarios, the majority of respondents said that they would not share the content (96-99.55%). Of those who said that they would share it, the most popular reasons selected were ‘The information seems important’ and ‘The information seems accurate and comes from authoritative sources’, suggesting that some respondents were indeed susceptible to mis/disinformation.

The results of the Malta questionnaire highlight strong awareness of mis/disinformation among participants, with nearly all (99%) recognizing that published content can be false and 83.7% believing they have been exposed to false news. Most respondents expressed a high level of concern about disinformation, especially in topics like politics, health, and the environment. Text-based content was the most commonly reported format for encountering false information, followed closely by visual content, with social media identified as the leading source. As Section 2 of the questionnaire revealed, respondents appeared more confident identifying falsehoods in text-based formats than others. Participants showed mixed habits in verifying news, with almost half the sample relying on trusted news sources and others using personal judgment, fact-checking websites, or online tools. As noted earlier, a significant percentage of respondents (12.5%) admitted they do not usually verify information, pointing to the need for improved media literacy.

Overall, the findings point to a digitally engaged but cautious public, showing both strengths and gaps in digital literacy, verification skills, and resilience to mis/disinformation—underscoring the importance of continued education and awareness efforts.

3. Focus Groups

Three focus groups were designed and conducted in October and November 2024, consisting of third-year journalism students from Greece, Cyprus, and Malta. Third-year journalism students were selected as they are at an advanced level of study and, as such, they have already been taught how to identify and combat disinformation. Prior knowledge of disinformation issues, media literacy and content verification techniques were considered essential in regard to the overall scope of this work. Participants from Malta were from the Department of Media and Communications, which hosts the only university journalism programme in Malta. Participants from Greece and Cyprus came from the Department of Journalism at Aristotle University and the Journalism Program at the University of Cyprus, respectively, as these are the only BA programs in these countries specifically focused on journalism studies.

The Greek focus group consisted of 17 participants (7 females, 10 males), the Cypriot group consisted of 14 participants (11 females, 3 males), and the Maltese group consisted of 11 participants (9 females, 2 males), all groups stratified based on gender representation data in each BA programme. The researchers, including a moderator and an observer, facilitated the discussions in a friendly, non-pressured environment (Krueger and Casey, 2000), introducing the themes of the study, as described in the RQs, and allowing for interaction and further discussions among the participants. While each focus group was facilitated by a different moderator, deliberately selected due to their prior familiarity with the students, as they were already serving as instructors within students' BA programme, the same observer was present in all three groups to ensure consistency and alignment with the study's aims and themes.The moderators explained the study to the participants and emphasised the ability to opt-out at any time, while institutional review board–approved informed consent forms were collected from each participant.

Participants were first presented with several examples of migration-related disinformation to introduce them to the main topic and were also asked to give examples of migration-related disinformation they have encountered. Questions followed a structured progression from general to more focused ones; however, additional follow-up questions could arise based on participants' responses.

The discussion was structured around four main sections: a) introduction, b) identification of fake news and misinformation, c) impacts, and d) prevention tactics. In detail, the first section involved introducing the participants to the research. Specifically, they were informed about the "MedDMO" research program, its importance, purpose, and intended outcomes. Subsequently, emphasis was given to participants' roles and contributions to the research while the section concluded with their decision to participate in the study.

The second section focused on the participants' existing knowledge regarding the identification of fake news and indications of disinformation content. Overall, the responses demonstrated that the participants are aware of and can identify certain elements indicative of fake or misleading news. Notable responses included the use of exaggerated language and its association with a lack of objective presentation, which can be identified both in the main text and in the titles and headings of articles. Other indicators mentioned were the display of information from unknown or invalid sources, the rough online structure of the news organization, the presence of falsified visual documents, and the peculiar depiction of titles aimed at enticing readers to engage with the specific article (more "clicks" equating to higher website traffic). Based on these responses, participants were prompted to compare their own ease and ability to detect misinformation with that of other age groups. An important factor in this comparison was the varying levels of digital familiarity observed across generations. The participants' answers revealed strong contradictions. Some linked the ability to distinguish true from false information to professional specialization, such as studying in the field. Others argued that younger generations, being more familiar with the rapid exchange and processing of information, can scrutinize a news story more effectively, delving into it quickly but not superficially. However, the prevailing view among all participants

highlighted the vulnerability of younger generations, a view justified with specific examples and arguments. Specifically, this vulnerability arises because either information is not their primary concern, making them gullible, or they have greater exposure to social media, making them more easily deceived. Additionally, although they have learned to consume large volumes of information, this often translates into difficulties in understanding and perceiving it. To conclude the second section, it is important to note that despite the fact that most of the participants were young and more digitally savvy, they recognized that they were more likely to be exposed to disinformation, struggling to distinguish fake news.

The third section of the discussion focused on the effects that the consumption of misinformation and the spread of false news can have on individuals and society. Initially, the moderators provided examples from recent news, such as the Covid-19 pandemic and the issue of immigration, to illustrate the connection between misinformation and its influence on individuals and their decision-making processes. The discussion highlighted the fact that the more information -even contradictory- is shared, the more it impacts a person's perception and decision-making. There was consensus on the negative and harmful effects that disinformation campaigns can have on society. Participants recognized that misinformation can create biased beliefs in individuals and potentially lead to social tensions and conflicts. However, beyond the negative impact of this phenomenon, some participants expressed an optimistic perspective. They suggested that combating fake news can help raise awareness, enabling the public to develop critical thinking.

The fourth and final section focused on discussing existing measures and tactics to prevent disinformation, while also providing an opportunity for participants to make suggestions and share their opinion on the issue. Some participants suggested boosting measures to combat disinformation, including imposing fines on organizations and media outlets that spread false news. Furthermore, the education sector emerged as a fundamental channel for addressing and combating disinformation.Participants emphasized the need to educate the public on how to spot disinformation in order to make informed decisions. Continuous digital literacy education is also essential to better equip the public to deal with the constantly evolving methods of disinformation. Finally, the role of educational institutions and their curricula was highlighted. Participants stressed the importance of introducing courses and training in secondary education, targeting the age group that first encounters social media. For journalism professionals, it is crucial to have a mandatory course for all undergraduate students. These proposals need to be methodical and continuous to effectively help and protect individuals and society from disinformation campaigns.

The discussion was associated with the moderators presenting an example of disinformation based on a real event. This example involved a video accompanied by a misleading caption. After examining the content of the video and the insinuations in the titles and captions, the participants agreed that such posts can foster prejudice and mislead the public. Finally, the importance of education on disinformation issues was reiterated as a crucial measure to better address and mitigate such phenomena.

The data collected through the focus groups can lead to significant findings and conclusions. Initially, this relatively homogeneous group, despite being young news consumers, demonstrated the ability to recognize certain signs of fake news. They did not hesitate to compare themselves with other generations regarding digital familiarity and the detection of disinformation, acknowledging that their high consumption of information might make them more vulnerable. Their existing experiences confirmed the influence and negative effects of disinformation campaigns, highlighting the creation of prejudices, tensions, and social conflicts. Finally, the discussion underscored the crucial role of the education sector in addressing disinformation, emphasizing the need for adaptation to new technologies and disinformation methods.

4. Interviews

Structured interviews were also conducted in Greece, Cyprus, and Malta, with seven participants in each country, to explore perceptions of disinformation, its impact, and strategies to combat its spread. The goal was to uncover key patterns for practical recommendations.

In Greece, four interviews were conducted with members of the general public and three with professional journalists. Regarding the general public, four participants (ages 34-54, evenly split gender, Thessaloniki, Greece, employed full-time, high educational attainment, diverse political beliefs) were interviewed. In this context, participants primarily identified disinformation through sensationalist content (clickbait, extreme claims) and perceived visual/audio manipulation (cropped media). Moreover, upon realizing they were misinformed, participants generally said that they felt anger and disappointment. Most would not take action but would be more careful in the future, with one exception advocating for active negative feedback. Susceptibility to disinformation varied, with some believing they were unaffected and others admitting potential influence on important decisions like voting or vaccination. None had formal training in combating disinformation. Additionally, participants unanimously agreed that AI and other modern technologies are a double-edged sword as they can enhance the spread of false news but also combat it. Specific examples of AI use in disinformation were challenging for them to provide, though audiovisual manipulation was noted. Furthermore, education and awareness-raising were emphasized as key strategies, ideally starting in schools with critical media literacy. Social media was seen as a vital platform for disseminating accessible information. Some suggested journalists use verification tools, and one advocated for stricter regulations on digital platforms. A multi-faceted approach combining education, technology, and regulation, integrated early into the educational system, was deemed necessary.

Regarding news professionals, three journalists (ages 40-56, two male, one female, Thessaloniki, Greece, employed in journalism, high educational attainment, centrist political beliefs) were interviewed. In contrast to the general public, journalists identified disinformation through technical inconsistencies (poor audio-video sync, visible editing, image modifications) and subtle distortions from AI tools. The absence of an author's signature was also reported as a red flag. Moreover, they had mixed views on their susceptibility; some felt less vulnerable due to training, while others acknowledged that even experienced professionals could be affected. Reactions to being misinformed included disappointment and anger, similar to the general public. Some emphasized transparently admitting when they've fallen victim to disinformation to build trust. Unlike the general public, all journalists had formal exposure to disinformation identification tools and methods, but admitted these were not always utilized in daily work, highlighting a gap between theory and practice. They also acknowledged AI's significant impact on false news dissemination, citing image generation tools and LLMs for creating misleading content. They also recognized AI's potential for content verification and cross-referencing, but expressed concern about the public's inconsistent use of such tools. The dual role of AI in spreading and mitigating false news was a shared observation with the general public. In terms of strategies needed to combat disinformation, participants emphasized education and systemic improvements. They stressed integrating critical media literacy into education from an early age and educating older generations through seminars and public campaigns. They called for better training in verification tools, more time and resources for thorough information verification, and improved standard journalistic practices to make genuine content harder to imitate. Strengthening regulatory frameworks for digital platforms and improving transparency in AI tool use in journalism were also highlighted. A comprehensive approach combining education, professional training, proper resource allocation, and systemic reforms was seen as essential to reduce disinformation.

In Cyprus, four interviews were conducted with members of the general public (two men and two women - public official, English Teacher, private employee, Tourism industry professional) and three with professional journalists (two men and one woman), aged 23 to 60.

Regarding the general public, participants reported that popular social media networks have become the primary sources of information. They also noted that they follow news portals owned by newspapers/news websites, indicating a shift towards digital news consumption. Some of them expressed skepticism about the reliability of information from social media, emphasizing the importance of cross-checking information with authoritative sources. Moreover, participants highlighted that information may often be framed to align with specific audience beliefs or expectations. Additionally, they mentioned that the credibility of the author is an important factor, and they often check if there is a byline in a news article to assess reliability. Timeliness was also cited as a significant aspect, with participants noting that they try to verify if a story is new (or at least recent). Participants also noted that real but outdated content is sometimes presented out of context to appear as recent or current events. Some also pointed out that certain visual elements—such as headlines and photos—can raise suspicions of disinformation. In this context, they expressed concerns about the negative impact of AI, particularly its potential to amplify the spread of false or misleading information through visual content. Lastly, they highlighted that information, especially regarding health issues, often affects their judgment. Concerns around conflicting information on vaccines have been prominent in recent years, with several participants expressing reservations about their choices. In this context, they noted the challenge of cross-checking information, citing the specialized knowledge required in certain (e.g. scientific) fields and the extensive effort involved in verifying specific pieces of information.

Regarding professional journalists, participants stated that they would not report false news unless it was directly related to fraud. Rather than engaging with or spreading such content, they prefer to stop following unreliable sources altogether. Some participants make efforts to cross-check information by examining the origin and intent behind the content. Interestingly, they highlighted that increased interest in news during major events can make individuals more susceptible to online mis-/disinformation. Overall, participants expressed a commitment to critical thinking and a tendency to distance themselves from misinformation. Moreover, they stated that visual inconsistencies, asymmetries, and artifacts (e.g., unrealistic hands or faces) often produced by various AI generators could be a first step for identifying false content. However, while they acknowledged the importance of media literacy and critical thinking, they reported having received no formal training on this topic. Furthermore, the lack of engagement by Cypriot media in such initiatives was another aspect stressed by the participants. Furthermore, they pointed out that technology, particularly AI, may exacerbate the spread of misinformation by facilitating the creation and dissemination of fake/misleading content to a wide audience. They mentioned that time pressure for quick publication combined with understaffing, can lead to inadequate cross-checking and the reproduction of inaccurate news and emphasized the need for more safeguards, transparency, and regulations to protect citizens and democracy in general. Additionally, they emphasized on the importance of educating children from an early age to develop skills such as critical thinking, as well as the positive impact of media literacy campaigns in schools. Another critical point raised was the need for training media professionals in content verification and relevant tools to enhance/ensure the quality of news circulated online. Some participants also suggested that social media platforms should implement stricter content controls and use AI to detect and combat false information. Lastly, promoting citizen participation in reporting false news was recommended, with initiatives designed to encourage the community to recognize and report misinformation, alongside collaboration with professionals from scientific disciplines to aid in identifying false information through evidence-based posts and reports.

The Maltese sample also consisted of four members of the general public (a secretary, project administrators, and a communication coach, aged 41–60) and three journalists employed by local media (one male and two female, aged 21–40, with diverse political views).

In terms of the general public, news websites, followed by social media, were their main source of news. However, television news and podcasts also featured. All interviewees said they consume news daily, even multiple times a day. Their consumption appeared to follow a routine, such as watching television broadcasts or reading through news sites (and papers' newsletters) first thing in the morning, or listening to news analysis podcasts in his/her downtime. All interviewees reported following a range of sources, local and international (in some cases, the latter was preferred). Elaborating on local sources, all participants expressed a near or total avoidance of political-party-owned media, citing its tendency to 'skew' facts. Moreover, most of them expressed confidence in their ability to detect false information, though they acknowledged that this may change as deepfake technology grows more deceptive. They also felt that others' decisions are more likely to be impacted by mis/disinformation than their own. Meanwhile, the general feeling was that AI can be both friend and foe, and at least one interviewee expressed concern about big tech ownership ("knowledge is power"). As one interviewee said, "it suits people that the population doesn't question things". Additionally, ways of addressing this included discussion and analysis of news in classrooms and integrating media literacy and information literacy into the national curriculum, but also holding people responsible for causing harm through disinformation.

Regarding news professionals, while they tend to consume news from a wide variety of sources – even conspiracy blogs, to get a feel of what is happening there – the youngest of the three also reported an element of "detoxing" or news avoidance when "not on the job". On identifying disinformation, points mentioned included the framing of a story (what is included/excluded, where emphasis is put) and source reputation. Like the other interviewees, all three journalists felt that political-party-owned media are a major propagator of mis/disinformation. Also much like the rest of the interviewees, the journalists said that they would feel "cheated" and "disappointed in myself" were they to fall for fakes. However, they also stressed that they are inclined to approach information with a degree of suspicion and inclination to investigate it further. Interestingly, in some cases, members of the general public exhibited greater awareness of available verification software than journalists. Fact-checking was described as an essential part of the journalistic process but the journalists interviewed said that some verification skills (such as geolocating an image) are more specialised and are not within every journalist's arsenal. Furthermore, it is worth noting that some did not have formal training in media and communications but still saw major links between their studies and vocation (one had a background in the natural sciences: "in chemistry and biology you don't accept something for a fact until you see it for yourself"). Sentiments on AI reflected those of the other interviewees. Additionally, one journalist – who spoke about how she uses AI in her workflow – stressed the need to hold it accountable through human verification, which "is super important" (for example, checking the accuracy of a summary one has asked a chatbot to produce from a press release).

5. Experiment

In line with the objectives of D3.3 to assess the impact of disinformation in Greece, Cyprus, and Malta, an experimental pilot study was designed to assess how variations in message veracity and communication format influence young audiences' trust, emotions, and willingness to act. The study aimed to evaluate how message veracity and communication modality shape trust, emotional reactions, and climate-related behavioral intentions among young media-literate audiences. The experimental design involves a systematic comparison of eight distinct message conditions, combining factual or misleading content with four delivery modalities (i.e., text, image, video, and audio). In the image format, visual framing was also tested as an additional parameter. To create the misleading framing in the experiment, we relied on existing narratives and disinformation campaigns related to climate change, which were debunked by MedDMO fact-checkers [1] [2]. Participants (n=168) were students of social science from the Aristotle University of Thessaloniki and the University of Cyprus, an audience both media-literate and many of them poised to enter professional journalism, randomly assigned via unique tokens to one of the eight conditions to ensure randomisation and balanced group sizes.

Analytically, four of these conditions presented factual climate-change information: In the first, participants read only a legitimate news article drawn from a Greek website; in the second, they saw that same article accompanied by a symbolic "split tree" illustration, half healthy and half destroyed, to underscore the impact of climate damage; in the third, they watched a 1 minute 26 second video interview in which a climate expert reviewed empirical evidence of rising temperatures and extreme weather; and in the fourth, they listened to an audio-only version of that same interview, with all visual elements removed. The other four conditions replicated each of these formats exactly, but replaced the accurate content with a misleading narrative that downplayed environmental risks: the text-only version offered a doctored article claiming that recent temperature shifts fall within normal variability; the text-plus-image version paired that disinformation with a fully thriving tree illustration to test for optimistic visual framing; the video version featured the same two speakers disputing the significance of climate change and underplaying its effects; and the audio version provided the corresponding contrarian commentary without visuals. In every case, the source attribution remained identical across conditions so that only the content and its framing differed.

[1] https://meddmo.eu/cyprus-climate-change-disinformation-report/

[2] https://meddmo.eu/greece-report-on-disinformation-regarding-wildfires-and-wind-turbines/

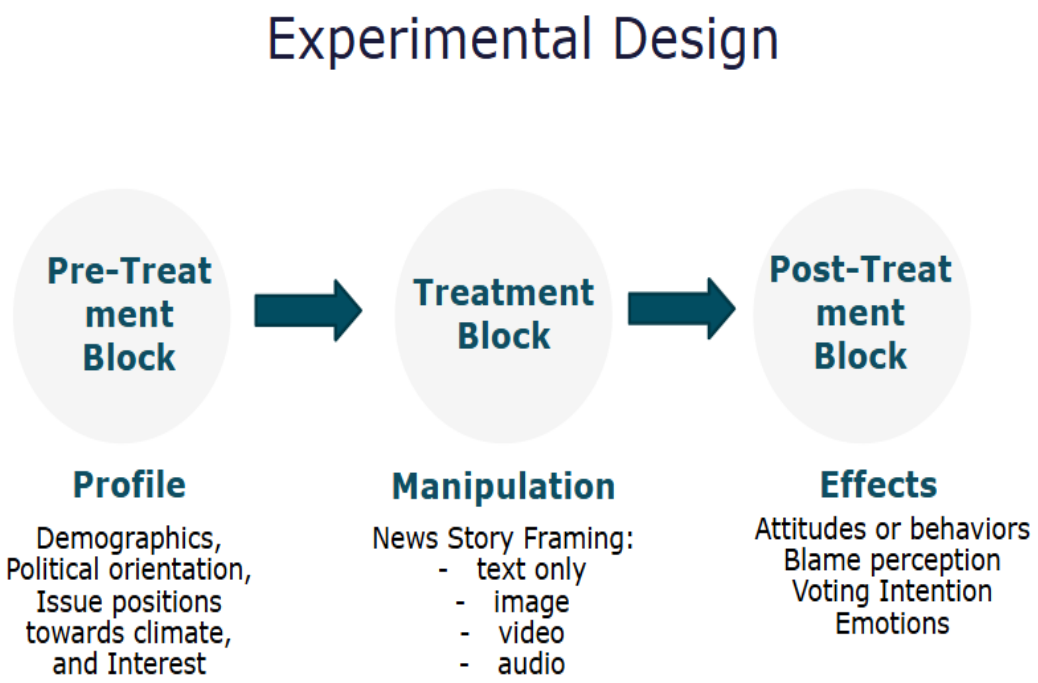

Figure 1: Overview of the experimental design

The experimental design (Figure1) follows a structured workflow of three phases:

1. pre-treatment, capturing participant demographics, political orientation, baseline attitudes toward climate change, and media habits;
2. treatment, exposing participants randomly to climate-related messages varying systematically by modality (text-only, text-plus-image, video, audio) and veracity (factual or misleading content); and
3. post-treatment, assessing treatment effects on attitudes, emotional reactions, attribution of responsibility, and behavioural intentions.

Specifically, in the pre-treatment phase , participants provided demographic information (age, gender, education, country of residence) and indicated their political orientation on a 1–10 left-to-right scale. They then completed pre-stimulus questions measuring baseline climate attitudes: how serious they judged climate change to be, the extent to which they believed human activity causes it, their confidence in personal mitigation actions, and how often they consume climate-related news. Immediately after the stimulus, participants moved on to the post-exposure sections where they judged the content and its source using a seven-point Likert-type scale to rate aspects such as trustworthiness, accuracy, reliability, and source legitimacy. They then reported the intensity of specific emotional responses elicited by the stimulus, including fear, anger, hope, anxiety, indifference, motivation to take action, and levels of worry. Additional items measured the degree of

responsibility attributed to various actors for addressing climate change, such as governments, media organisations, individuals, corporations, and international bodies. Finally, participants indicated their behavioural intentions and attitudes, covering willingness to undertake personal actions such as making donations or participating in demonstrations, support for relevant policy measures, and self-reported frequency of verifying information before sharing it online.

Data collection occurred online between May 7 and June 10, 2025, via Lime Survey, a secure survey platform. Invitations were distributed through university mailing lists, yielding 383 initial respondents and 168 completed questionnaires (43.9% response rate). One reminder was issued after one week to non-responders. Participants provided informed consent before proceeding. The average completion time of the survey was approximately 13 minutes. Response-time thresholds were applied to exclude inattentive cases: no respondents fell below the minimum engagement threshold, while those exceeding 23 minutes (1.5×IQR above the third quartile) were flagged, yielding 16 cases (9.5%) subjected to sensitivity analysis. Stimulus exposure times were similarly examined within each group, identifying fewer than 4 % of participants as potential speeders. The analysis confirmed that excluding these cases did not alter the findings in any substantial way.

A pre-treatment balance check using chi-squared tests for categorical variables and Kruskal-Wallis tests for ordinal or continuous measures demonstrated that random assignment achieved comparable groups across demographics, media habits, and baseline climate attitudes. Only self-reported political ideology showed a slight imbalance ($p=0.052$), which could prompt its inclusion as a covariate in future analysis.

To confirm the effectiveness of the experimental manipulation, we conducted a manipulation check assessing participants' perceived credibility of the stimuli. Participants rated the credibility of the information, source, and accuracy of the stimulus they received on a 1–7 Likert-type scale across four items, which were averaged to create a credibility index:

- This news is credible.
- The information presented is valid and credible.
- The source of this information is credible.
- The information presented is accurate and based on facts.

The manipulation check revealed significantly higher credibility in factual conditions than in disinformation conditions (Kruskal-Wallis $\chi^2=47.10$, $p<0.001$), confirming the intended impact of the veracity manipulation. Modality recognition rates ranged from 62 to 96%, which were the strongest in the audio and video groups, further validating stimulus delivery. This structured design and systematic checks ensured data quality, allowing robust examination of how exposure to climate-related disinformation and factual content influences young audiences' perceptions and intentions.

The experiment revealed that the veracity and communication modality of a given message can have systematic effects on the emotional and cognitive responses of the recipients. When it comes to emotional engagement, it varied significantly across conditions, with fear, anxiety, motivation to act, and concern consistently receiving higher scores for the people who were exposed to the factual video and audio ($p<0.01$), indicating that multimodal factual content was most effective at eliciting strong reactions. On the contrary, the groups that were exposed to the misleading stimuli, particularly the misleading text plus image and the misleading video, reported higher levels of indifference compared to other groups. Judgments of how likely the described climate events were to occur also differed markedly ($p<0.001$), with factual video and audio conditions showing mean plausibility scores above 5.5 on a 7-point scale and misleading conditions below 4.1. These findings are of particular importance, as they suggest that disinformation, particularly as it relates to downplaying the impact of climate change, is subject to dampening emotional activation, which can have a measurable impact on how climate communication is received by the public. Additionally, hope also tended to be lower in misleading

groups, further reinforcing this pattern. On the other hand, anger did not show a statistically significant difference across groups (p=0.079), though there were observable variations in mean values.

While overall support for climate policies was generally high across the sample, statistically significant differences emerged for policies regarding carbon emission limitations (p=0.043) and stricter fossil fuel restrictions (p=0.016), with the factual video condition associated with the strongest support. These results suggest that audiovisual factual messaging can meaningfully increase support for impactful climate measures. Notably, this fact might be true even within a population already inclined toward pro-climate attitudes, as was the sample for this particular experiment. Results further indicated that attributions of responsibility to international organisations varied modestly by message condition (p=0.023), suggesting that certain framings can even shift perceptions of global institutional roles.

Overall, the study demonstrates that both the accuracy and format of climate-related messages significantly influence how audiences respond, at least when tested among a media-literate sample. Participants exposed to factual messages in audio or video formats reported significantly higher levels of fear, anxiety, motivation to act, and concern than those in other groups ($p<0.01$), while also judging these messages to be more credible and accurate. In contrast, misleading messages led to increased indifference, lower hope, and reduced plausibility ratings. While participants already viewed climate change as a serious threat, factual video exposure significantly boosted support for carbon emission limits (p=0.043) and stricter fossil-fuel policies (p=0.016). A more minor but notable effect emerged in how conditions shifted the responsibility assigned to international organisations (p=0.023). These patterns underline the effectiveness of accurate, multimedia storytelling in deepening engagement and countering the effects of disinformation. Leveraging factual video and audio formats not only heightens emotional and cognitive engagement but also evidently boosts support for stringent climate policies, even among already concerned audiences. At the same time, mindful use of visual framing can help guard against the appeal of misleading narratives.

This report presents the preliminary results from this pilot experimental study. The initial findings are promising and indicate significant potential for deeper insights into the effects of message veracity and modality on trust, emotions, and behavioral intentions related to climate issues. More detailed analyses and comprehensive findings will be presented at the ECPR 2025 General Conference in August. Given these encouraging results, we plan to replicate and expand this experiment during MedDMO's second phase, targeting a broader, general-population audience across Greece, Cyprus, and Malta to further validate and extend our conclusions.

Conclusions

Across Greece, Cyprus, and Malta, the questionnaires revealed a shared public concern about the widespread presence of disinformation, especially in politics, health, and international affairs. Social media was consistently cited as the dominant channel for encountering false information, with text-based content being the most common but images and videos posing unique challenges in verification. Although there is some public awareness and basic verification ability, many individuals still fail to verify information, highlighting a vulnerability that calls for stronger media literacy education. The public across all three countries emphasized the importance of teaching critical thinking and responsible sharing, pointing toward a need for coordinated educational, technological, and regulatory responses.

Additionally, the focus group discussions with journalism students across the three countries closely aligned with and reinforced many of the concerns and themes identified in the interviews. Participants in both methods demonstrated an informed awareness of disinformation markers—such as exaggerated language, unreliable sources, and falsified visuals—indicating a shared understanding across different age groups and roles (students, general public, and professionals). Both focus group participants and interviewees acknowledged the dual nature of digital familiarity: while it facilitates rapid information processing, it can also increase vulnerability to misinformation due to overexposure and superficial engagement. This overlap extended to reflections on the societal impact of disinformation. Participants from both groups pointed to its role in fostering prejudice, polarization, and public mistrust, especially regarding sensitive topics such as migration and public health. While the focus group discussions brought forward a student perspective, particularly concerning peer vulnerability and educational gaps, interviewees—especially journalists—provided complementary insights by identifying real-world consequences and professional challenges related to disinformation.

The interviews also echoed and deepened key themes from the survey and focus groups, particularly in relation to social media's central role in spreading false content and the urgent need for media literacy and regulatory frameworks. Emotional reactions to being misinformed—such as frustration and disillusionment—were shared by participants in both formats. Importantly, both sets of participants emphasized the importance of education, early intervention, and practical tools, including AI-powered verification and citizen engagement mechanisms. While focus group participants stressed curriculum reforms and the need for digital literacy at younger ages, interviewees added practical policy suggestions, such as journalist training and public accountability measures. Taken together, the focus group and interview data underscore a unified demand for comprehensive, systemic responses to disinformation across education, media, and technology.

The experiment confirmed and quantified many of the concerns raised qualitatively—especially the heightened trust, concern, and motivation triggered by factual video and audio, and the dampening effects of misleading content with strategic visual framing.

Bringing together the findings from the survey, interviews, focus groups, and the experimental study, a consistent picture emerges: while young, media-literate audiences show awareness of disinformation tactics, they remain emotionally and cognitively influenced by message accuracy and format. Together, the results underscore the urgent need for coordinated responses, including fact-based multimedia communication, targeted education, and structural measures to counter disinformation's evolving impact. In this context, the convergence of evidence across all methodological approaches powerfully reinforces the impact assessment objective of D3.3, demonstrating that disinformation shapes public perception, undermines trust, and affects emotional engagement with critical issues, including climate change, public health, and migration. Therefore, it can be understood that disinformation's pervasive influence across cultural and media contexts in Greece, Cyprus, and Malta requires sustained and actionable interventions at both national and EU levels.



Mediterranean Digital Media Observatory



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