VULNERABILITY TO DISINFORMATION OF DIVERSE GROUPS OF CITIZENS IN NORTH MACEDONIA

Towards building resilience to disinformation – testing a new model

Contents

1.

THE DEVIL'S ADVOCATE DEBATE –
WHENCE THIS RESEARCH?

The Devil's Advocate Debate[1]
Title: Whence this research?
Participants: The Devil's Advocate (DA) and the researcher (R).
Wider context in which the debate is set: R N. Macedonia
Stage: Meeting Room at the Institute of Communication Studies

DA: I read the report of your research about vulnerability to disinformation. Researcher, why do you research disinformation at all? In my view, disinformation is not as important as it is cracked up to be!
R: Because we live in a society over flooded with information and disinformation and the individual finds it increasingly difficult to identify the truthful information. Disinformation is harmful because of its potentially ravaging power, to mislead us to a wrong decision, behaviour, to cause confusion, disorder, to cause even wars. Disinformation, due to the world wide web, i.e. the Internet, spreads faster and easier nowadays and we have to understand the manner and mechanisms how it succeeds.

DA: Researcher, you are introducing a term – vulnerability to disinformation? What is vulnerability? What do you mean when you say vulnerability?
R: Vulnerability means inability, not knowing, insufficient capability and/or capacity of the individual to protect themselves from something that can hurt them.

DA: I asked what is vulnerability to disinformation? Is there such a thing, or are you just coining a term void of specific meaning?
R: There is necessity of such a term. It stands for insufficient awareness for the existence of disinformation, as well as the intention of those who spread it. Insufficient knowledge about the potentially ravaging power of disinformation opens the door for numerous unwanted actions, frequently even inhumane, unbeknown to humankind. Coining such a term, and its later research and investigation has ultimately a good goal: it encourages citizens' awareness for potential danger of spreading disinformation and organised and systemic response to it.
We have the responsibility as a society to care for this vulnerability and make an effort to do something to decrease it.

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1 Advocatus diaboli (Lat. "devil's advocate") is a former official position in the Catholic Church also known as Promotor of the Faith (Promotor Fidei): the one who argues against the canonisation (declaration of a saint) of the candidate in order to disclose any of his flaws or misrepresentation of evidence in favour of canonisation. The task of this person was to provide sceptic views for the character of the canonisation candidate, to look for ommissions in the evidence, to claim that the miralces assigned to the candidate were fabricated etc. The Devil's Advocate uses arguments to oppose the "Advocate of God" (Advocatus Dei; known as Promotor of the Cause), whose task was to outline the argument in favour of the canonisation. Despite the origins from the Middle Ages, this idiomatic expression is one of the most popular contemporary English idioms used to express the concept of debate, argumenting against something without striving for the opposing view (Fanning, W. (1911). Promotor Fidei. In The Catholic Encyclopedia. New York: Robert Appleton Company. Retrieved February 16, 2023 from New Advent: http://www.newadvent.org/cathen/12454a.htm).

DA: When did disinformation appear, is it a newer or older phenomenon? Since we are investigating the matter now, it appears to be a new one!
R: It is claimed that disinformation helped bring the Roman emperors to power, who used messages on coins as a form of mass communication. Nazi propaganda during their time largely used the press, radio and cinema in its intention to influence people's views and behaviour. It is quite old phenomenon, perhaps the efforts for (systemic) countering of disinformation have newer date in history. Nowadays, the efforts for planting disinformation could additionally make use of the digital infrastructure which is incomparable in reach to all others before. Internet reaches billions of individuals and enables senders to adjust convincing messages to specific psychological profiles of individuals. Thereto, nowadays disinformation and its influence is being researched more.

DA: How do you consider to win against this whole digital infrastructure? That is impossible.
R: By building resilience.

DA: Resilience to what?
R: Resilience to disinformation, which means being equipped with knowledge and skills to scrutinise the truthfulness of information, as well as the goal and the means in which they are distributed to us. That is something that can be learned!

DA: Why build resilience with the broader public and vulnerable groups to disinformation? Can't there be something more practical? Isn't it simpler to train journalists not to spread disinformation???
R: Because it is quite difficult, almost impossible to influence the disinformation creators, having in mind that disinformation is most often the result of conscious and intended tendencies for manipulation, it is most important to build resilience of the public to disinformation, especially of the vulnerable groups.

DA: How could that be built? How come you think you can build resilience to disinformation?
R: There are several ways, yet enhancing media literacy is one of the most effective ways.

DA: Aham, therefore you have taken to researching the subject of media literacy? It appears to be a simple task!
R: Yes, the research subject is the relationship between media literacy with recognising cues of disinformation, but it is not an easy task. We have included few variables in this mechanism which we consider to be related: news media literacy, motivations or news consumption, interest and motivation to learn what is disinformation; awareness for the existence of barriers in identifying and countering disinformation. I told you that it is not an easy task.

DA: My view is that you are complicating things unnecessary!
R: It is a matter of a complex mechanism, resulting from few factors. If the individual wants to be able to recognise disinformation, they have to know media systems, their operation and effects, as well as be motivated to (proactively) behave towards the process of news/information consumption. These two things usually go hand in hand. If a person is motivated, if they want, have the desire to recognise disinformation, then they would most probably educate themselves on how media systems operate in the society. But, the other mechanism is also important and probably correct: the person that would educate themselves for media and media systems, becoming aware for the mechanisms of disinformation operation, will be increasingly motivated to recognise the hidden cues of disinformation. The activation component is key element of media literacy.

DA: I however consider that it is impossible to measure media literacy. How do you measure it? In what way could you measure how media literate a person is?
R: Primarily, it is important to distinguish between news media literacy and media literacy. Certainly there is overlap of these two terms in some segment, but they are not complete synonyms. We measure news media literacy through three components: one is the need for cognition, the second is media locus of control, and the third is media knowledge. The first means the human need to be included in deliberation, thinking activities. The second refers to the personal sense of the individual that they are controlling information, not vice versa, the information (media) controlling them. The third component refers to the knowledge about the structure, operation, role of media, their influence and how they are regulated. Thereto, people who have larger need for cognition (who are intellectually curious and enjoy being involved in thinking activities), who have a sense that they are controlling information/media (higher locus of control), as well as those that have greater knowledge about the structure, operation and influence of media – will be more news media literate. Media literacy is a construct which besides the news media literacy, involves the activation component as a motivation for following the news and motivation for learning and capacity to identify disinformation, as well as awareness that the process is not simple, on the contrary, there are numerous barriers, a lot of obstacles in identifying and countering disinformation.

DA: You are confusing me now... is media literacy equal to resilience to disinformation? Those who are less media literate are more vulnerable to disinformation???
R: Yes, that is like a figure and its shadow. Media literacy is in the background, the appearance is the disinformation identification and behaviour accordingly.

DA: You have included also knowledge about topics such as European integration processes and climate change? I do not see any correlation of knowing these topics with media literacy?
R: A responsible citizen is a well-informed citizen. An active citizen with participative culture is a citizen who is and wants to be properly informed about important societal topics, issues. European integration is an important and bitter issue for us, and climate change is a bitter issue for the whole humankind. Thereto, a responsible and active citizen is a citizen who is media literate, but also literate for topics of societal interest. These are related phenomena!!

DA: How can it be measured how much a person knows to recognise disinformation? It appears that you are continuously trying to measure things which cannot be measured!
R: We have constructed three texts, three short news presented as online news (news on a website) in which we have inserted cues according to which disinformation can be spotted and we could observe whether the respondents managed to locate those cues. We are not completely certain that this exactly is a valid instrument for measuring competence on disinformation, but we consider that it provides certain guidelines.

DA: What are those cues?
R: Overemphasising certain information, not citing precise sources, use of emotionally charged words, several typos in the text, hyper use of punctuation cues – we have included all of that in the texts.

DA: How many cues did the students spot?
R: Well, about 2-3 in each of the news.

DA: What about the pensioners?
R: One.

DA: How many disinformation cues were included in each news?
R: 9 in each of the three news!

DA: What led to these results? Why students and especially pensioners spot so little disinformation cues? Who is responsible for such a situation?
R: The responsibility lies with every one of us who is involved in education, particularly of young peo- ple, and we are failing to develop intellectual curiosity; all of us who are working with communication and media and are failing to transfer knowledge to the youth about the manner in which media oper- ate, thus we have contributed to repulsiveness to following media content, especially with the young people; the responsibility lies also with those who create policies, and do not feel accountable for not building resilience to disinformation.

DA: Why did you select online news? Disinformation is spread across all media!
R: We consider that online news has the greatest potentially ravaging power because it can reach far larger number of users; news preparation in this context has largest number of challenges, we even have nonhuman forms (bot) which create news; it is an area that is least regulated and our hypothesis was that disinformation spreads fastest and easiest online. With traditional media the situation is more or less different.

DA: Honestly I cannot see the forest for the trees! What have you really proven for media literacy? What is the most important finding from your research?
R: It is a complex research, few components were involved, still the overall process/mechanism for identifying and countering disinformation is complex. What is primarily important to note is that it is not a simple process, it involves few factors that influence each other. The crucial finding is that me- dia literacy influences the competence for recognising disinformation cues, so people who are media literate will identify disinformation more successfully. Interestingly, this is true only for the students! The pensioners have other "rules of the game." They know the cyber space less, as well as the oper- ation of news websites and most probably consider that news is prepared in the same manner alike in the mainstream media. Thereto, as media literate as the students are, they will have virtually no competence for identifying disinformation in online news.

DA: What happens now? Where and for what can these findings be used? I cannot see large benefit from them!
R: Benefits are huge! When one knows the mechanism of operation of media literacy, when one knows the factors, intentions and barriers in the process of identifying and countering disinformation, that it can be used to tailor educational resources and/or programmes for developing media literacy. The specifics of this mechanism for each group (whether it is by age, sex, education…) should be carefully and adequately utilised!
Nonetheless, take a careful look at the data presented in the research and you will see for yourself how it can be practically and positively used!

2.

GLOSSARY

Disinformation

Disinformation is information whose falseness can be established and is shared with an intention to deceive or mislead (UK Government Communication Service). False information deliberately and often covertly spread (as by the planting of rumours) in order to influence public opinion or obscure the truth. (https://www.merriam-webster.com/dictionary/disinformation)

Vulnerability to disinformation

Social vulnerability is defined as a "the state of an individual, groups or entire communities which is characterised by: the inability to withstand the negative consequences from the stressors; high potential to be physically or psychologically hurt/harmed and insufficient capacity, abilities and possibilities for: forecasting the stressful situations; managing stressful situations; overcoming consequences from stressful situations and recovering from stressful situations." Thereto, "an individual, group or a community that has greater capacity to adapt and lesser sensitivity and exposure to stressors is less vulnerable. An individual, group or community which has lesser capacity to adapt, and larger sensitivity and exposure to stressors is more vulnerable."
(https://www.mtsp.gov.mk/WBStorage/Files/priracnik_socijalni_usligi.pdf)
Therefore, the vulnerability to disinformation is the inability to identify disinformation, high risk to suffer negative consequences from it, low capacity, abilities and possibilities to counter them and frequent exposure to disinformation.

Media literacy

Media literacy is the ability to use, understand and create media and communications in a variety of contexts. (https://www.ofcom.org.uk/research-and-data/media-literacy-research)
Media literacy is a wider concept of literacy encompassing the abilities to: access and analyse media messages; creating, thinking and taking action by using the power of information and communication to make certain meaningful changes in the environment (https://www.aspeninstitute.org/wp-content/uploads/2010/11/Digital_and_Media_Literacy.pdf).

News media literacy

News media literacy is a competence for critical thinking, deconstructing the meaning and evaluation of the credibility of information; adequate interpretation of received information, distinguishing opinions from facts; recognising the credibility of information and official position, contrary to personal opinion and interpreting events by individuals[2] (https://www.aspeninstitute.org/wp-content/uploads/2010/11/Digital_and_Media_Literacy.pdf).

Need for cognition

Need for cognition refers to an individual's tendency to engage in and enjoy activities that require thinking. Some individuals have relatively little motivation for cognitively complex tasks. These individuals are described as being low in need for cognition. Other individuals consistently engage in and enjoy cognitively challenging activities and are referred to as being high in need for cognition. (http://psychology.iresearchnet.com/social-psychology/personality/need-for-cognition/)

Media locus of control

Locus of control is a psychological term introduced into psychology by Julian Rotter (https://dictionary.apa.org/locus-of-control), and it is used to determine how much control the individual considers to have over the conditions of their lives. People with an internal locus of control tend to believe that things happening to them are because of their own abilities, actions or mistakes. People with external locus of control will tend to consider that other forces – such as accidental opportunities, environmental factors or other people's actions are more responsible for the events that are happening in their life.

Media locus of control refers to the feeling that individuals have whether their being informed (disinformed) is a result of their efforts, knowledge and activities, or a result of media and how they present information. Individuals with internal locus of control will consider that it depends on them whether and how correctly they will be informed, whereas the individuals with external locus of control will consider that it depends on media how well they will be informed.

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2 Working version of the definition

Extrinsic motivation for news consumption

Extrinsic or external motivation is an external incentive to engage in a specific activity, especially motivation arising from the expectation of punishment or reward (e.g., completing a disliked chore in exchange for payment) (APA Dictionary of Psychology)

Extrinsic motivation is a motivation led by external rewards. They can be tangible such as money or grades, or immaterial, such as praise and glory. Different to the intrinsic or internal motivation, which stems internally from the individual, the external motivation is focused exclusively on external rewards.

People who are externally motivated will continue to do a task though it does not give them any satisfaction by itself. For example, they will do something uncomfortable within their work tasks in order to earn a salary.

Extrinsic or external motivation for following news means motivation for following the news led by external factors such as: news is followed because it needs to be done, because it is needed for something, because a recognition will be given for it etc.

Intrinsic motivation for news consumption

Intrinsic or internal incentive to engage in a specific activity that derives from pleasure in the activity itself (e.g., a genuine interest in a subject studied) rather than because of any external benefits that might be obtained (e.g., money, course credits, or obligation). (APA Dictionary of Psychology)

Intrinsic motivation means behaviours that are driven by rewards experienced internally. These might include the satisfaction of completing a task, a sense of achievement, or finding something interesting. This form of motivation is internal to the individual, as they are naturally energised to engage in these behaviours regardless of any extrinsic (external) reward such as pay or promotion. (Intrinsic motivation - Oxford Reference)

Intrinsic motivation for following news is a motivation to follow the news led by internal incentive: the news is followed because it is a desired action, appreciated and knowing information from the news bears personal rewards, satisfaction and self-respect.

Barriers for identifying and countering disinformation

Barriers are the internal (of the individual) factors that aggravate, obstruct, or disable the recognition of the disinformation cues, which mostly are: insufficient knowledge of the topic in the news, insufficient experience about it, insufficient interest for the theme in the received news as well as the emotions triggered by some news. (Disinformation Techniques: How to Spot Them | Psychology Today)

Disinformation cues

Disinformation cues are all cues that signify whether news is genuine or not. The disinformation creators use a variety of tools to influence their "victims", to coerce them to act in a certain manner and trigger certain consequences. Those cues can be: using emotionally charged words, not providing the source of information, using proverbs which trigger certain feeling etc. (Tools of Disinformation: Inauthentic Content (cisa.gov); (Identify Disinformation 1 (instituteforpr.org); 10 Ways to Identify Disinformation – A Guide and Checklist | Institute for Public Relations (instituteforpr.org). Knowing these cues could increase individual's preparedness to demonstrate resilience when they come across disinformation.

3.

INTRODUCTION

With the rapid rise and explosion of technological development and consequently the increased access to a wealth of information in fractions of a second, we as humanity have been thrust into the information era. While still needing to adapt to the vast space of all kinds of information, we almost fully unprepared have entered a newer era, the disinformation era. There is an explosion of anyone's opinions, social media posts, virtual debates, blogs and webpages, thus anyone can find data and information about anything, as well as release information about anything in the cyberspace. Even if we became aware of the existence of disinformation, even if we knew all the techniques that disinformation creators use to influence us, even if we trained how to spot them and counter disinformation, they can potentially be immense, which can easily in an instant exhaust the full capacity of the individuals, make groups vulnerable, threaten societies. It has already become clear that the resilience of the individual to the ravaging power of disinformation has to become one of our main priorities in education.

The Institute of Communication Studies (ICS) has been implementing the project Fact-Based Journalism for Raising Awareness and Countering Disinformation in the Media Space in North Macedonia (Use Facts) which should **strengthen the resilience of the broad public and vulnerable groups to disinformation.** It is financed by the British Embassy Skopje and its timeframe is 2022-2025.

The goal of the project is to provide support to citizens, journalists and civil society organisations to increase their understanding for the source, motives and influence of disinformation in society. The project will produce in-depth and investigative journalistic stories and educational content and offer resources that would equip citizens to identify disinformation, scrutinising their sources, motives and effects. At the same time, the project has an objective to encourage citizens to engage for increased transparency of institutions in order to narrow the space for spread of disinformation, and on the other hand encourage media and institutions to provide wider access to credible information and news.

One of the activities within the project is conducting this research for susceptibility or vulnerability of people to disinformation. Through this research ICS aimed to test its hypothesis that young people, the elderly (above 60 years) as well as people who are socio-economically fragile are particularly susceptible to disinformation. Therefore, a comprehensive analysis was conducted, of research so far, as well as field research of a sample of potentially vulnerable categories in regard to disinformation. The main objective was to establish the individual factors, intentions and barriers for identifying and countering disinformation. The aim is to use the research data for scientific and educational purposes, providing recommendations and guidelines for creating educational content and activities for decreasing the susceptibility of the citizens to disinformation.

This research is first of this kind in the R.N. Macedonia. Its uniqueness is in defining the potential factors, motives and barriers for identifying disinformation and an effort for their measurement and quantification. The cause and effect consequences were researched, there is a hypothesis for a new theoretic model of influence which was tested. In this model the central term is media literacy and in narrow terms – news media literacy. Media literacy enables people to have competence, knowledge and understanding to completely use the possibilities that traditional and new communication media offer. To be media literate (especially) online is of fundamental importance for how people behave as consumers, users and "digital" citizens. The central goal that media literacy plays online has implication on other spheres of people's lives. This enables users to participate in public life, vote in elections, maintain healthy relationships with others, access and receive information and critically formulate and express opinions.

Until now, researches in North Macedonia have been researching media literacy on a general, apparent level. The largest share of research is based on self-evaluation of the individual digital competence or level of media literacy, so this research is a pioneer in the intention to dive deeper in the factors and motives of the individual for that literacy. This research is different from all others because for the first time there is designed adequate scale for measuring media literacy and media literacy index. **The subject of this research is what are the psychological and societal drivers of media literacy and whether media literacy can lead to more successful identification of disinformation in media (primarily online news).**

★ ★ ★

This research on vulnerability to disinformation has a starting point in the theoretic model of news media literacy by Maksl, Ashley and Craft[3]. The basis for their work is in the James Potter's cognitive model of media literacy, according to which the construct of media literacy is composed of four components: 1. Knowledge structures about media, 2. Personal locus of control, 3. Manner of processing information and 4. Certain competences and skills. The abovementioned researchers excluded the last component from Potter's model, and have constructed their own theoretical model which contains three components: the need for cognition, media locus of control and media knowledge, their structure and operation. The authors have designed an instrument with which they tried to measure news media literacy and indicated that individuals who are news media literate have larger need for cognition and would be those that enjoy thinking; for them it is an activity they like and will do it willingly;

they will have internal locus of control, which means they will have the tendency to believe that it depends on them, not on media whether and how they will be well-informed, and be the ones that will have larger quantity of knowledge for how media operate, their structure and influence on people.

The model in this research builds on the theoretical model and instrument from the research of Maksl, Ashley and Craft, but it is expanded with two additional components: the first, activation component that includes the intrinsic and extrinsic motivation for following news, as well as motivation for learning and education for identifying disinformation, whereas the second component refers to the awareness about the barriers that disable the process of identifying disinformation. Suggested and tested, with this research, the theoretical model could visually be presented in the following manner:

Figure no. 1 Model for resilience to disinformation
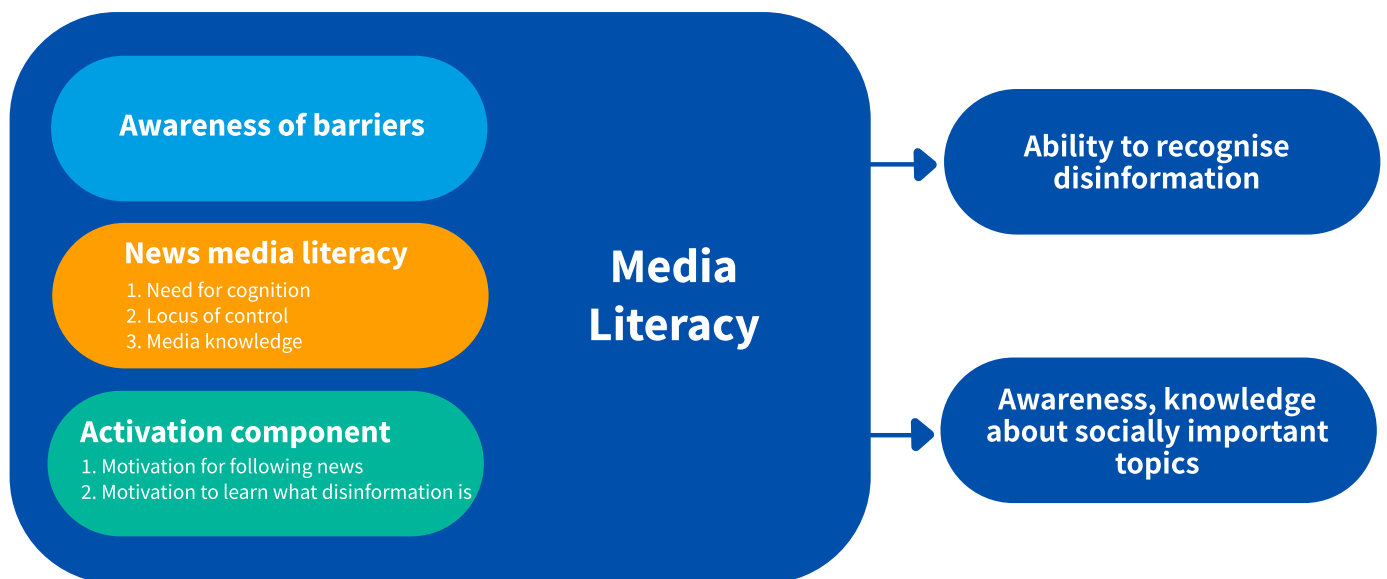
3 Maksl, A., Ashley, S., Craft, S. (2015). Measuring News Media Literacy, Journal of Media Literacy Education 6(3), 29 – 45, https://www.researchgate.net/publication/286937368_Measuring_News_Media_Literacy

The activation component in this new expanded model includes:

a) motivation, tendency, the desire to follow the news and it is done willingly (intrinsic, internal motivation) or because it has to be done, it should be done (extrinsic, external motivation) and

b) motivation to learn what is disinformation, which would mean an interest and preparedness for education for successful identification and countering disinformation.

Awareness about barriers for identifying and countering disinformation is the awareness that there are obstacles and difficulties in the process. There are individuals who are fully aware that their emotions (emotional state), their insufficient knowledge, insufficient experience for, or insufficient interest for some of the issues could be an obstacle for correct distinction of what is truth and what is a lie in the news.

In the end, this complex construct titled media literacy will mean the competence for recognising disinformation. It will also mean accurately informed and responsible citizens, who base their decisions and behaviours on conscious thinking and check well information they receive by media on daily basis.

Quite simply speaking, this model assumes that individuals who are media literate will be aware of the existence of disinformation, will actively and consciously enter the process of following the news, and will know and be able to recognise disinformation and counter them. In this manner they become responsible citizens, who besides being less vulnerable to disinformation, will also be active subjects in society as consumers, customers, voters, educators, teachers, etc.

4.

RESEARCH OBJECTIVES AND SUBJECT, RESEARCH QUESTIONS AND VARIABLES

4.1 Research objectives

The objective of the research was to establish the individual factors, motives and barriers for identifying and countering disinformation. The analysis from the research will serve as a basis for developing educational resources and activities for decreasing susceptibility of citizens to disinformation.

4.1.1 Determining vulnerable groups for research needs

When people's vulnerability is discussed, there is always a reference to the capacities that people have in regard to risks that a certain societal event or situation has. In the social sphere, vulnerability is determined in regard to the social problems and risk which people are facing, on the one hand and the individual capacities (social, economic, psychological etc.) of the people. In the Manual for Developing Social Services for Vulnerable Categories in the Local Communities[4] designed by the Ministry of Labour and Social Policy, social vulnerability is defined as the "state of an individual, groups or communities characterised by: inability to withstand the negative consequences from the stressors; high potential to be physically or psychologically hurt/harmed and insufficient capacity, abilities and possibilities for: forecasting the stressful situations; managing stressful situations; overcoming consequences from stressful situations and recovering from stressful situations." Thereto, "an individual, group or a community that has larger capacity to adapt and lesser sensitivity and exposure to stressors is less vulnerable. An individual, group or a community that has lesser capacity to adapt and larger sensitivity and exposure to stressors is more vulnerable."

Analogous, when we talk about vulnerability (or susceptibility) to disinformation, in order to determine the vulnerable categories, there should be defined the negative consequences from disinformation, possibility for some kind of damage or harm for the individuals and insufficient capacity, i.e. abilities and possibilities for identifying and countering disinformation. Disinformation is identified as "contributor to various disputable events, which can range from elections and referenda to political or religious prosecutions, to the global response to the COVID-19 pandemic" [5]. On the other hand, it is unavoidable challenge for human cognition and social interaction, because it is a consequence of the fact that people often make mistakes and sometimes do not tell the truth intentionally. Among the damaging consequences of disinformation, most frequently mentioned are undermining the credibility of information, declining trust in media and institutions, distortion of the democratic relations, not least encouraging sense of insecurity, fear, disturbance, which are generated in people when they find out that they were exposed to disinformation[6].

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4 Ministry of Labour and Social Policy. Manual for Development of Social Services for Vulnerable Groups in Local Communities. 2013 https://www.mtsp.gov.mk/WBStorage/Files/priracnik_socijalni_usligi.pdf

5 Ecker, U.K.H., Lewandowsky, S., Cook, J. et al. The psychological drivers of misinformation belief and its resistance to correction. Nat Rev Psychol 1, 13–29 (2022). https://doi.org/10.1038/s44159-021-00006-y

6 The latest polling about establishing citizens' ability to identify and counter disinformation within the project of the Institute of Communication Studies, Use Facts concludes that "citizens most often feel disturbed when they will realise that they had read fake news or disinformation, 10% stated they felt very angry." (ИКС, Report from research of citizens' ability to discern and deal with disinformation 2022. https://iks.edu.mk/en/research-analysis/report-from-research-of-citizens-ability-to-discern-and-deal-with-disinformation/)

Regarding the capacities for recognising and countering disinformation, as the last component in determining vulnerability, in the science and research public until now it has been most often pointed that media literacy has a role in vulnerability to disinformation.

Having in mind all of the mentioned determinants, the research identifies as vulnerable groups the young people aged between 18 and 28, elderly above 60 years of age and with significant reservations and people from socially vulnerable category (recipients of some kind of social benefits). The key criteria for defining the vulnerable groups is the third component, i.e. capacities for identifying and countering disinformation. Theoretically, young people are still in development and building their basic capabilities for countering disinformation in media and especially in the digital era, and therefore it is assumed that due to that fact they are more vulnerable in comparison to people aged between 28 and 60. At the same time, according to the last 2021 census, the age group 18-28 years of age have a share of 13% of the total population . On the other hand, people older than 60 years, considering the capacities for countering disinformation, are also vulnerable because they have less developed digital skills, and are more sensitive to the manipulative effects of disinformation and therefore have been considered as the second category of vulnerable group of citizens. At the same time, in the sense of the overall share in the total population, people above 60 according to the last census are 24%. Those are the two key and most numerous vulnerable categories sampled in the research and the main analysis and comparisons are done on these two groups.

4.2 Research subject

The subject of this research was the relationship between media literacy with recognising disinformation cues in online news. Having in mind that media literacy is a complex construct the research involved: news media literacy, extrinsic (led by external factors) and intrinsic (led by internal factors) motivation for following news, motivation to learn what is disinformation, the awareness for existence of barriers in the process of identifying and countering disinformation. These variables were included in order to reveal the mechanism of interdependent factors that determine media literacy, and the successful identification of disinformation, as well as knowledge or being informed about societally important issues.

Separate category of vulnerable citizens was considered the socially vulnerable, i.e. those that receive social benefits on various grounds. It should be underlined that it was quite difficult, almost impossible to reach this category. There were delivered invitations for participation in the research to the Ministry of Labour and Social Policy, as well as to 4 inter-municipal social services centres, with which there was direct communication several times to prompt people who receive social benefits, but without success. Still, in order to have some insight in the capacities for countering disinformation of this vulnerable category of citizens there was successful cooperation with the Educational Day-care Centre for Street Children in Shuto Orizari whose beneficiaries are children from socially vulnerable families. On the other hand, in terms of priority needs and values of this vulnerable category (basic needs such as food, economic security, healthcare protection etc.) the research team considers that they should not be the main goal either in the research, or in the activities that will be taken within the project Use Facts.

Usually when vulnerable categories are discussed, by default people with disability (or functional variation) are included. However, because the group itself in its nature is diverse and demands special individually tailored approach in the research, and due to the specific interests for information, this category of people was not part of the research sample.

Online news was selected as news to recognise the disinformation cues, due to the power of the Internet to reach every home and category of people (young and old, educated and less educated, those that live in an urban and rural environment, those that have larger and modest digital skills….) Online news can reach practically anyone, to cause a lot of forecasted but also unforeseen consequences and generate challenges on individual and societal level. The more it is discovered what influences the successful recognition of disinformation in online news, the more effective will be the investment in building resilience to disinformation in the powerful tool called the Internet space, cyber space.

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7 If expanded from younger age, i.e. 16 years, the percentage is 15%, but due to ethic standards in academic research methods, underaged persons cannot participate in such research without consent from their parents/legal guardians, and thefore these persons were not included with the research tools and due to the limited timeframe.

8 The reference ICS polling from 2022, about establishing citizens' ability to identify and counter disinformation concludes that "the feeling of anger and disturbance is more present with the elderly groups of citizens, compared to others, i.e. 54 % of the citizens older than 65 stated they felt disturbed when they discovered to had read fake news or disinformation."

4.3 Research questions

On the basis of the objective and the theoretical analysis the following general and research question was posed: **What are the individual factors, motives and barriers for recognising cues of disinformation?** More specifically, the overall analysis was based on the replies from few basic questions:

1. How successfully can news media literacy be measured?
2. Is there correlation between news media literacy and the motivation for following news?
3. Is there a correlation between news media literacy and the motivation for learning what is disinformation?
4. Is there a correlation between news media literacy and the awareness for existing barriers in the process of identifying disinformation?

5. What are the sociological factors related to the news media literacy?
6. Is there correlation between news media literacy and digital literacy?
7. Can there be coined a new term such as media literacy? Is there such a construct?
8. Can media literacy influence the ability to identify disinformation in online news?
9. Does media literacy mean to be well-informed about current, societal and political topics?

In order to provide answers to these questions, there were included few variables, as well as adequate instruments for their measurement.

4.4 Variables

This research includes few variables:

1. News media literacy is a variable, a construct of 3 components:

1.1 The need for cognition: the tendency of the individual to get involved and enjoy activities that require deliberation. This component is an indicator of the tendency to consciously and actively approach the media information process, information processing, contrary to the automatic and quite passive listening to the news and receiving information.

1.2 Media locus of control: the sense that individuals have regarding the level of being informed (disinformed), is it a result of their efforts, knowledge and activities, or is it a result of media and the manner in which they present information. Internal media locus of control is having attitude and sense that the individual is controlling the information that reaches them, and external locus of control means a position that media controls the individual and determines how they will be informed.

1.3 Media knowledge: knowledge about the structure, operation and influence of media generally and specifically in the R.N. Macedonia.

2. Activation component, the variable that consists of two sub-components:

2.1 Motivation for news consumption: the tendency to follow the news because it is desired and there is an "internal" award (intrinsic motivation) and the tendency to follow the news because it has to be done, or is necessary because of some "external" rewards (extrinsic motivation).

2.2 Motivation to learn what is disinformation: the tendency to be educated about identifying disinformation, independent studying about what is and how does disinformation work, as well as the importance that is attached to the process of identifying and countering disinformation.

3. Awareness about barriers in the process of identifying and countering disinformation: perception that the emotions (emotional state), not knowing, the insufficient experience and the insufficient interest for the news topics can be obstacles in the process of identifying disinformation.

4. Specific knowledge, being informed about current and important societal topics

4.1 Knowledge about the European integration of North Macedonia knowledge about certain basic terms and important dates in the process of membership in the EU

4.2 Interest about the topics of European integration of North Macedonia: how much do respondents find interesting the topics about membership in the EU

4.3 Importance attached to the topics of European integration of North Macedonia: how much they (the respondents) personally find the topics of membership in the EU of interest

4.4 Knowledge about climate change: how much do they find the issues related to climate change interesting

4.5 Interest about themes regarding climate change how much do they find the issues related to climate change interesting

4.6 Importance attached to the issues about climate change: how much they personally find the issues related to climate change important

5. Recognising cues of disinformation in online news: the ability to spot and recognise cues of disinformation such as overemphasising certain parts of the news, grammatical errors, use of emotionally charged words, use of proverbs, not providing the source, hyper use of punctuation cues.

Independent factors tested whether they are related to news media literacy:

- gender
- age
- ethnicity
- place of residence (urban/rural environment)
- degree of education
- participation in training for media/digital literacy
- intensity of using a computer and
- frequency of following news online

4.4.1 Operationalisation of variables

News media literacy is a summary result, score of three scales: The Cognition Scale, the Media Locus of Control Scale and Media Knowledge Scale. A higher score will mean bigger news media literacy.

Need for cognition is a result (summary score of 5 findings) acquired on the Need for Cognition Scale, marked as Scale 1 in the questionnaire. A higher score means bigger need for cognition

Media Locus of Control is a result (summary score) acquired in the Media Locus of Control Scale, marked as Scale 2 in the Questionnaire. A higher score on this scale will mean internal locus of control (position: it depends on me whether and how correctly I will be informed), and lower score will mean external locus of control (position: media decides how they will inform/disinform me).

Media Knowledge is a result of the Scale for the knowledge about media structure, operations and influence, marked as Scale 3 in the Questionnaire. A higher score will mean greater quantum of knowledge.

Barrier Awareness is a summary score of four issues about barriers. A higher score will mean greater awareness about the obstacles in the process of identifying disinformation.

Motivation for news consumption is a separate result of two scales:
Scale for extrinsic (external) motivation: summary score of two questions.
Scale for intrinsic motivation: summary score of two questions.
Higher scores on the two scales will mean bigger extrinsic and intrinsic motivation.

Motivation to learn what is disinformation summary score of three questions. A higher score will mean bigger motivation for education to recognise and counter disinformation.

Knowledge about European integration of North Macedonia is a summary score of five questions. A higher score will mean greater knowledge.

Knowledge about climate change is a summary score of six questions. A higher score will mean larger knowledge.

Importance of issues about European integration of North Macedonia is the response to a question on a five-point scale. A higher score means bigger importance for issues about EU integrations.

Interest in European integration issues of North Macedonia is the answer to one question on a five-point scale. A higher score means expressing more interest in EU integration issues.

Interest in climate change issues is the answer to one question on a five-point scale. A higher score indicates a greater interest in climate change issues.

Importance of climate change issues is the answer to one question on a five-point scale. A higher score means assigning more importance to climate change issues.

Recognising cues of disinformation is the summary score of correctly recognised cues in the online news presented in the quiz questions. A higher score means recognising more cues of disinformation.

4.5   Data collection methods and techniques

4.5.1 Survey with a structured questionnaire - online and paper forms

For the purpose of quantitative data collection, the research included a survey questionnaire with a total of 63 questions, of which 9 for general data on the respondents, 51 closed-type questions (with the choice of one answer) and 3 interactive quiz questions, intended for the general population of age over 18 years, focusing on all the above areas that were the subject of this research. With portion of the respondents, the questionnaire was conducted electronically, using a purpose-built platform, available in Macedonian and Albanian, and the rest of the respondents - using a paper form of the questionnaire. The questions in the online version were answered by clicking (selecting) the option that matches the respondent's opinion, while the quiz questions by multiple selection of what is required in them. The questionnaire was distributed to several faculties from Ss. Cyryl and Methodius University, Mother Theresa University, State University of Tetovo and Goce Delcev University, as well as to members of 12 pensioners' associations. The data analysis was carried out using the SPSS program for statistical data processing.

4.5.2 Focus group of socio-economically vulnerable people to examine their views on news consumption and countering disinformation

In order to include groups from socio-economically vulnerable categories, due to the insufficient availability and technical impossibility of these categories of persons to answer the questionnaire online or in paper form, a focus group was organised with persons receiving social benefits from the Municipality of Shuto Orizari. All questions from the questionnaire were simplified, adapted for oral presentation and for people with little or no education.

5.

REFERENCE RESEARCH

Understanding why people consume disinformation, whether and why disinformation spreads more quickly, easily and widely than facts, can help us recognise the mechanisms involved in the process of receiving disinformation, and indicate how to prevent the harmful effects of their spreading. All research indicates that every measure should be aimed at strengthening the resilience of users and their role and action not only as a critical audience, but also as holders of certain, guaranteed rights.

An individual's susceptibility to believe (and further spread) disinformation is a complex phenomenon that consists of several layers, including individual, group, and societal (Scheufele & Krause, 2019, according to Nagel, TWS, 2022). In terms of individual endorsement of disinformation, the responsibility lies primarily with the individual's internal factors. An individual may have predisposing beliefs, knowledge, or attitudes that increase or decrease susceptibility (vulnerability) to disinformation.

5.1 Reference research in the world

The following is a review of four studies that examine factors that may influence people's susceptibility or vulnerability to believing and spreading disinformation.
In the research "Disinformation and Freedom of Expression"[9] conducted by the Association for Progressive Communications in 2021, researchers conclude that:

- A comprehensive, holistic approach to understanding disinformation requires analysing our broader information eco-systems.
- Only such a holistic approach can allow us to define solutions and preventive actions that will contribute to further strengthening of other spaces and actors that promote the flow of information, visions and ideas in our societies.
- Quick access to public information systems, a plural, accessible and diverse media context, independent and qualified journalism and safe expression of opinion are the necessary prerequisites for a healthy information system.
- Solutions to disinformation, including regulatory ones, need to take into account the pervasive nature of disinformation sources, as well as the fact that the entire information eco-system is saturated by them.

- Digital and media literacy programs are crucial and should be part of countries' efforts in dealing with the numerous information irregularities or; such programs can be implemented independently, but should also be embedded in the regular education curricula.
- Whatever decisions are made, especially regulatory measures and policies, should be made through a participatory process.

In another study[10], from 2021, the Alan Turing Institute from the United Kingdom aimed to understand vulnerability/susceptibility to health disinformation received online during the Covid-19 pandemic, examined two sets of factors that may influence vulnerability. One refers to factors arising from the individual, and the other on factors arising from the content itself. As the authors state, a number of factors associated with people being susceptible to disinformation have been identified. Among the factors they list age, gender, education, cognitive skills, health literacy, numerical literacy, digital, media and information literacy, personality traits and trust in government. In the second group of factors, at the content level, it is stated that nature, the way the content is presented and the substance of it can influence the likelihood that individuals will believe it. Among factors are included the

9 Disinformation and freedom of expression, Association of Progressive Information, https://www.ohchr.org/sites/default/files/Documents/Issues/Expression/disinformation/2-Civil-society-organisations/APC-Disinformation-Submission.pdf; The research was submitted to the UN Special Rapporteur on the Promotion and Protection of the Right to Expression for the purposes of the annual thematic report of the Human Rights Council in 2021.
10 Understanding vulnerability to online misinformation, 2021, Alan Turing Institute

manner in which content is presented, style and comprehensibility, content source, warnings and information (over)load.

In a 2015 research by Maksl, Ashley, and Craft[11] which measured the news literacy level of a sample of 500 teenagers using a new measurement scale based on James Potter's cognitive model of media literacy[12], and adapted for a specific measurement of news media literacy, findings indicate that teenagers with high news media literacy are more intrinsically motivated to use news, more sceptical, and more knowledgeable about current social events compared to peers with lower news media literacy. Potter's cognitive theory is composed of four components: 1. knowledge structures, 2. personal locus, 3. information processing, and 4. competencies and skills. Together, these factors describe the media literacy of an individual or group. Maksl, Ashley, and Craft used this model to measure news literacy when creating a questionnaire instrument, adopting the first three components and omitting competencies and skills (arguing that news media literacy is a consumptive, not a creative, process). They divided the questions in the instrument into three dimensions that correspond to the three components in Potter's theoretical model. Five questions in the "need for cognition" dimension measured information processing, six in the dimension "media locus of control" measured what Potter named personal locus of control and 15 questions in the dimension "knowledge structures about informative media" measured Potter's knowledge structures.

In the end, there is a review of the research conducted by the Southern Alberta Institute of Technology from Canada[13] in which a news media literacy instrument is used to measure disinformation acumen. This research is particularly relevant to the current research because it attempts to examine how an instrument for measuring news media literacy can simultaneously measure susceptibility to disinformation.

The author starts from the assumption that a more effective proactive manner to counter disinformation online is to develop the internal locus of control of individuals in their news consumption habits, i.e., to increase news media literacy. As the author states, the measurement of media literacy is increasingly the subject of academic work and research is mainly based on two models. The model adopted by the author, just like the authors of the previous research (Maksl, Ashley and Craft, 2015), is based on James Potter's cognitive theory of media literacy. The instrument constructed by the three authors (Maksl, Ashley and Kraft) in their 2015 study, with minor adaptations to Canadian conditions, was used by Nigel to measure susceptibility to fake news alongside the use of an additional 15 questions that measured people's attitudes, beliefs and behaviours towards fake news and their use of various information platforms. In addition, respondents answered five demographic questions. As the author concludes, the scale of the instrument for measuring news media literacy can be an effective tool not only for measuring media literacy, but also for measuring the ability to recognise and counter inaccurate news.

11 Maksl A., Ashley S., Craft S. (2015). Measuring News Media Literacy. Journal of Media Literacy Education 6 (3), 29 – 45. https://doi.org/10.23860/jmle-6-3-3
12 James Potter is a professor in the Department of Communication at the University of California, Santa Barbara. https://www.comm.ucsb.edu/people/w-james-potter
13 Nagel, T. W. S. (2022). Measuring fake news acumen using a news media literacy instrument. Journal of Media Literacy Education, 14(1), 29-42. https://doi.org/10.23860/JMLE-2022- 14-1-3

5.2 Reference researches in North Macedonia

Research related to the problem of disinformation in North Macedonia is mostly conducted by civil society organisations and associations, whereas scientists and professors, both from state and private higher education institutions, rarely participate in the public discourse on these topics. For the purposes of this research, several researches conducted in the period between 2018 until now were consulted. Despite the fact that the corpus of research in the country is not small, especially during the period of the pandemic (which has proven to be a particularly favourable period for disinformation spread globally), from the review of research, no research was observed that goes in-depth to examine the individual contributing factors towards the vulnerability or susceptibility of citizens to disinformation. In that sense, this research can be said to be the first to consider individual factor, starting from the concept of media literacy and connecting it with other variables.

Of interest for this research is the latest Research of citizens' ability to recognise and counter disinformation[14], conducted by the Institute of Communication Studies, in late 2022. Among the findings of this research, particularly relevant to the current one, are those related to disinformation recognition skills, measured through self-perception of one's disinformation recognition skills, information checking habits as well as sensitivity or susceptibility to disinformation on topics related to the European integration of the country and climate change. Regarding the self-perception of the ability to recognise disinformation, it is interesting that over 70% of the respondents answered that they can recognise when the news is not the truth (over 50% answered that they can sometimes recognise, while 22% are sure that they can always recognise when the news is not true). Men are more confident that they can always recognise disinformation – 26% than women (19%). When they doubt the news they have read, 30% of respondents check whether and how news was reported in other media; 16% of citizens consult someone knowledgeable of the topic/media about the credibility of the news, while 14% start from the assumption that the news must be reliable since it is published, that is, that the facts have been checked before publication. Only 7% of citizens check the publisher, and 6% the author of the news.

The most related according to the researched variables is the research of the Agency for Audio and Audio-visual Media Services "Mapping Levels of Media Literacy in the Republic of North Macedonia Among the Population over the Age of 16" done by RESIS and supported by the OSCE. The survey was conducted during the second half of 2019, to examine 'individual patterns of media use, communication habits and skills of the audience, as well as the levels of knowledge and critical understanding of the contents of linear and non-linear audio-visual media services'[15] . In the used theoretical-methodological framework for categorising and evaluating individual levels of media literacy, 'the first dimension of the concept of media literacy refers to the abilities and habits of individuals to use different types of media. ... (a) The second dimension of individual levels of media literacy refers to the critical understanding of media content and media as institutions'[16]. In relation to the group of indicators from the first dimension in the research, among other things, it is concluded that viewing various contents via computer and mobile phone is increasing and that the young generations possess far more digital skills and abilities than the older ones. Regarding the second dimension, it is concluded that the general population has a relatively highly developed critical awareness of certain negative aspects of the contents. Also, the data in this section revealed that there is an 'intersection' or 'frontier' in traditional versus social media exposure that can be located in the population around the age of 45. It is concluded that the population younger than 45 uses social media to a greater extent as sources of information about domestic events, while the population older than 45 uses traditional media to a greater extent. Regarding the respondents' behavioural strategies when they notice large or substantial differences in information about the same events, most of the respondents (about 50% of the population in each age group) form their view by talking to family members, friends or other people. Also, there is an equal percentage in each age group (about 30%) who most often accept information from a source they trust. As the most critical, and in that sense the most active age group, the 25-34-year-old group was observed, which to a greater extent than the others compares published news from different media, i.e., it does research and comparisons with information from relevant sources.

14 Institute of Communication Studies. Report from a survey of citizens' ability to recognise and deal with disinformation. 2022 https://iks.edu.mk/istrazu-vanja-analizi/izveshtaj-od-istrazhuvanje-na-sposobnosta-na-gragjanite-za-prepoznavanje-i-spravuvanje-so-dezinformacii/
15 Trpevska S., Mapping the levels of media literacy in the Republic of North Macedonia among the population over the age of 16, Organisation for Security and Cooperation in Europe - Mission in Skopje, Skopje, 2020
16 ibid

During the period of the COVID-19 pandemic, other research was conducted that focused on disinformation during the pandemic (Pandemic or Infodemic? Critical Thinking and Conspiracy Theories in a Pandemic[17], Analysis of disinformation related to COVID-19 in North Macedonia, Metamorphosis, 2021).

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From the review of the previous research on the topic of disinformation in RNM, it can be concluded that although media literacy or critical opinion is examined, most of the research is based on self-evaluation of individual digital skills or level of media literacy. Media literacy has not been put into context or in the function of recognising disinformation, nor has there been made a statistical analysis that can reliably check if there is and what is the connection between the skills that are covered by the media literacy construct and the other relevant (dependent and independent) variables. This research differs from all others in that for the first time an appropriate scale and media literacy index were developed, determining if and how they can measure news media literacy, motivation and awareness about barriers in the process of recognising disinformation, and also researched in what way is the media literacy connected with the competence for recognising and countering disinformation.

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17 Petkovski, Lj. Pandemic or infodemic? Critical thinking and conspiracy theories in a time of pandemic. 2020 https://metamorphosis.org.mk/wp-content/uploads/2021/08/kritink-3-pandemija-ili-infodemija.pdf

6.

DATA OBTAINED FROM RESEARCH

6.1 Demographic characteristic of respondents

The sample consists of 291 respondents, 193 of which are students and 98 are pensioners. In addition, a focus group was conducted with 16 people from socio-economically vulnerable categories - Roma from the Municipality of Shuto Orizari, receivers of social benefits and beneficiaries of the Education Day-care Centre for Street Children[18] . The sample, by its nature, is convenient and purposive, with consideration to have respondents from different parts of RNM, as well as to cover both rural and urban municipalities.

For the first group of the sample - the youth, first and second year students from several faculties were included - Ss. Cyril and Methodius University (UKIM), State University of Tetovo (DUT) and Mother Theresa University. The age of the examined students ranged from 18 to 36 years, with a mean age of 20.27 years. The questionnaire was completed by almost 83% female and 17% male respondents - student population. Regarding the place of residence (urban-rural), the questionnaire was completed by 67.4% of students who live in urban areas, and 32.6% of students who live in rural areas. According to ethnicity, Macedonians are represented by 61.1%, Albanians by 35.2% and other non-majority communities by 3.6%.

Table 1 provides a detailed overview of student participation by faculty/university. Considering the technical availability, the electronic questionnaire was filled in by all students from DUT, Mother Theresa University, as well as students from the Faculty of Philology and Philosophy at UKIM. Paper form of the questionnaire was filled in by all students from the Faculty of Law and Pedagogy at UKIM[19] .

For the second group – adults over 60 years of age, pensioners, members of pensioner associations from several municipalities were included. When contacting the associations, it was suggested to choose people who have experience in using the Internet as a news medium. In the first phase of recruiting potential respondents among pensioners, the sample was purposive (people with experience in watching news on the Internet and working with computers were sought), and then in the implementation phase, the sample was convenient. The sample of 98 pensioners are aged 53[20] to 88 years, with a mean age of 69.61 years. The male-female ratio is 64% male pensioners versus 36% female pensioners. Regarding the place of residence, 83.7% live in urban areas, while 16.3% live in rural areas. According to ethnicity, 71.4% of the surveyed pensioners are Macedonians, 23.5% are Albanians, and 5% are from other ethnic communities (Roma, Serbs, etc.).

Table 1 shows the number of pensioners by municipality of residence and as can be seen from the table, more than half - 55 pensioners (56%) of the respondents are from Skopje municipalities. Taking into account the technical availability in the pensioner associations, as well as the skills of the pensioners, only 15 pensioners completed the electronic version of the questionnaire, while the rest, mostly at their request, answered in paper form.

Regarding the third group of the sample - persons who are socio-economically vulnerable, a focus group was conducted with 16 mothers of children beneficiaries of the Education Day-care Centre for Street Children; these families are recipients of social benefits[21]. Unlike other categories of socio-economically vulnerable persons, this group has its own specificities, including the very low level of education, and a large part of them are also illiterate, they have been unemployed for a long time, some of them even beg. Therefore, the discussion within the focus group was very limited.

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18 These respondents were contacted through the Children's Rights Association which manages the Education Daycare Centre for Street Children in Shuto Orizari.

19 A larger number of students were targeted, but due to the predetermined deadlines, the research was conducted immediately before an exam session, perhaps for those reasons, there was lack of participation of students from some faculties and universities in and outside of Skopje.

20 Three respondents from the pensioners were under 60 years old (with early benefits retirement) from the Association of Pensioners of the Ministry of the Interior

21 The Inter-Municipal Center for Social Work Skopje was contacted to enable access to persons who are recipients of social benefits on various grounds. Following several attempts to contact and negotiate, there was no co-operation and there was additional communication with the Children's Rights Association, which for more than 10 years manages a the Education Day-care Centre for Street Children in the Municipality of Shuto Orizari, which takes care of a vulnerable category of Roma children, with the aim of their social inclusion through spending time in a useful and structured manner throughout the year, stimulating and developing their potentials and capacities for their socialisation, growth, development and involvement in the community.

Table 1 Frequencies and percentages for demographic data for students and pensioners

Sex/gender	Frequencies			Percentages		
	Students	Pensioners	Socially Vulnerable	Students	Pensioners	Socially vulnerable
Male	33	63	0	17.1	64.3	0
Female	160	35	15	82.9	35.7	100.0
Ethnicity						
Macedonian	118	70		61.1	71.4	
Albanian	68	23		35.2	23.5	
Turkish	3	0		1.6	0	
Roma	2	2	15	1.0	2.0	100.0
Other	2	3		1.0	3.0	
Residence						
Urban area	130			67.4		
Rural area	63			32.6		
Age	18 years old - 36 years old.	53 years old - 88 years old	22 years old - 53 years old.	M=20.27, SD=2.435	M=69.61	M=34.4
SD=6,403	M=34.4					
University/ Faculty/ Retirement Association						
Ss. Cyril and Methodius University						
Faculty of Philology	33			17.1		
Faculty of Philosophy	15			7.8		
Law School	32			16.6		
Public Relations	15			7.8		
Faculty of Pedagogy	37			19.2		
State University of Tetovo	44			22.8		
University of Goce Delchev	2			1.0		
University of Mother Theresa	16			6.2		
Other faculties	3			1.5		
Makedonski Brod		10			10.2	
Bitola		3			3.0	
Demir Hisar		3			3.0	
Sveti Nikole		5			5.1	
Skopje (Butel, Gazi Baba, Gjorce Petrov, Saraj and the Association of Pensioners of the Ministry of Interior Skopje)		55			56.1	
Veles		5			5.1	
Makedonska Kamenica		9			9.2	
Vinica		8			8.2	

6.2 Involvement of respondents in media or digital literacy programmes

As a factor that might have a role in news literacy, and in disinformation recognition, it was considered whether respondents had been part of media or digital literacy programme. Respondents were asked whether they had participated in training on media or digital literacy.

Almost one third of the surveyed students (30.6%) answered affirmatively - that they were involved in some programme, and 69.4% of the students said they were not involved.

The majority of respondents, pensioners, or 79.6%, do not have such experience. Those who participated in such programs are from the municipalities of Makedonski Brod (1), Bitola (1), Demir Hisar (1), Makedonska Kamenica (6) and Skopje (11), or a total of 20.4% of the surveyed pensioners.

Chart No. 1 Participation in media or digital literacy training

6.3 Following news on the Internet

Using a computer in everyday life is one of the prerequisites for digital literacy and the probability of the importance of this skill in recognising disinformation is high. Respondents were asked how often they use a computer.

More than three quarters of the surveyed students, or 83.4%, use a computer, 41.7% once to twice a week, 17.4% - 3 to 6 times, and 24.3% every day. Every sixth student does not use a computer at all. 41.2% of pensioners, as shown in Table 3, hardly use a computer, and 59% use it - sometimes (18.8%), often (10.6%) or every day (29.4%).

Table 2 Following news on the Internet

Following news on the Internet	Students		Pensioners	
	Frequencies	Percentages	Frequencies	Percentages
No	6	4.1	9	10.7
Yes, rarely	76	52.4	27	32.1
Yes, often	63	43.4	48	57.1
In total [22]	145	100	84	100

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[22] In processing, both among students and pensioners, respondents who did not answer this question were taken into account, for more valid presentation of the data.

6.4 How often respondents use a computer

Using a computer in everyday life is one of the pre-requisites for digital literacy and the probability of the importance of this skill in recognising disinformation is high. Respondents were asked how often they use a computer.

More than three quarters of the surveyed students, or 83.4%, use a computer, 41.7% once to twice a week, 17.4% - 3 to 6 times, and 24.3% every day. Every sixth student does not use a computer at all. 41.2% of pensioners, as shown in Table 3, hardly use a computer, and 59% use it - sometimes (18.8%), often (10.6%) or every day (29.4%).

Table 3 Frequency of computer use

Using a computer	Students		Pensioners	
	Frequencies	Percentages	Frequencies	Percentages
Very rarely, almost never	24	16.7	35	41.2
Sometimes (1-2 times a week)	60	41.7	16	18.8
Often (3-6 times a week)	25	17.4	9	10.6
Everyday	35	24.3	25	29.4
In total [23]	144	100	85	100

Sample description summary

Students

Females predominate with 82.9%.

Macedonians are 61.1, and Albanians 35.2.

67% of the students are from urban areas, the rest from rural areas.

31% were involved in media or digital literacy training.

Over 95% follow online news (rarely or often). Only 4% do not follow at all.

The largest number use a computer sometimes (1-2) a week.

Pensioners

Males dominate with 64.3%.

71.4% are Macedonians, 23.5% are Albanians.

56% are from Skopje, the rest are outside of Skopje.

21% were involved in media or digital literacy training.

Over 89% follow online news (rarely or often). Almost 11% do not follow at all.

The largest number do not use a computer.

- A huge disproportion is noted in relation to the gender variable. The reason is that among students, the research was conducted in groups of faculties that traditionally have more female students. For pensioners, recruitment was done through pensioner associations. The percentages of groups according to demographic factors certainly do not reflect the real percentage.

- The fact that over 75% of both students and pensioners follow online news indicates that following news and the possibility of coming into contact with disinformation through digital media is high among both age groups, with both groups representing a possible target group for education and strengthening their disinformation recognition skills.

- The number of students who **never use a computer** is surprising, even **16.7%**.

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23 In processing, both among students and pensioners, respondents who did not answer this question were not taken into account, for more valid data presentation.

6.5 News media literacy

News media literacy in the research is seen as a construct of three components: Need for cognition, Media locus of control and Media Knowledge, which are measured through three scales (based on the procedure and scales of the examination of news literacy by Maksl, Ashley and Craft). Theoretically, those with high news media literacy will have higher scores on the three scales, i.e. they will have a greater need for cognition, they will believe that it depends on them whether and how much they will be accurately informed and they will have good knowledge about the structure, operation and influence of media. Those with low news media literacy will have low scores on all three scales, i.e., they will have a lower need for cognition, they will consider that it depends on the media whether and how accurately they are informed and they will know little about the media (little knowledge about the structure, operation and influence of the media).

6.5.1 Need for cognition

The Need for Cognition Scale[24] consists of 5 statements[25], to which respondents expressed their degree of agreement or disagreement on a five-point Likert scale (where 1 means 'do not agree at all' and 5 means 'completely agree'). This scale examines respondents' need for cognition. The theoretical maximum total score of all five statements is 25 points, while the minimum is 5.

The maximum total score in the group of students is 25 points and only 7 respondents or 3.6% achieved this score. The total score on the scale of need for cognition is 17.28 points, shown in table 4.

Table 4 Percentages and arithmetic mean (M) of statements in Scale 1 among students

	Statement	Scores					
		1	**2**	**3**	**4**	**5**	**M**
1	I don't want to have much to think about	6.3	12.5	29.2	23.4	28.6	**3.56**
2	I try to avoid situations that require deep thinking	4.2	10.9	24.0	23.4	37.5	**3.79**
3	I'd rather do something that requires thinking than something that doesn't require much thought	4.2	10.9	32.3	22.9	29.7	**3.63**
4	I prefer complex problems to simple problems	14.1	21.9	26.6	21.9	15.6	**3.03**
5	Thinking hard and for a long time about something does not give me pleasure	10.4	15.1	32.3	21.9	20.3	**3.27**
	The total scale score						**17.28**

The largest percentage of students choose the middle alternative (I neither agree nor disagree). The total score on the scale 17.28 indicates that the students have a slightly above-average development of this need for cognition.

Among the students, in terms of demographic characteristics: gender, ethnicity and place of residence (urban/rural), no differences were found in the need for cognition.

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24 Each statement of Scale 1 shows a high item-total correlation, a satisfactory Cronbach Alpha coefficient, as well as saturation by only one factor, thus proving the metric characteristics of this scale.
25 The first, second, and fifth questions are reverse coded, and a higher total score means a higher need for cognition.

The scores on the need for cognition scale are similar among pensioners. And with them, the maximum total score obtained is 25, although only 3 respondents or 3.1% achieved it. The total score on the scale of need for cognition is 15.32 points. This value indicates that pensioners have an averagely developed need for cognition.

Table 5 Percentages and arithmetic mean statements in Scale 1 among pensioners

		Scores					
	Statement	1	2	3	4	5	M
1	I don't want to have much to think about	11.5	24.1	25.3	13.8	25.3	**3.17**
2	I try to avoid situations that require deep thinking	13.8	32.2	14.9	18.4	20.7	**3.00**
3	I'd rather do something that requires thinking than something that doesn't require much thought	3.4	18.4	27.6	25.3	25.3	**3.51**
4	I prefer complex problems to simple problems	8.0	26.4	25.3	26.4	13.8	**3.11**
5	Thinking hard and for a long time about something does not give me pleasure	20.7	33.3	28.7	6.9	10.3	**2.53**
	Total scale score						**15.32**

In pensioners, as well as in the students, in terms of demographic characteristics: gender, ethnicity and place of residence (urban/rural), no differences were found in the need for cognition.

When comparing the mean scores of the group of students and the group of pensioners, it was concluded that both groups have a total score around the average, but still the ***mean value of the total score for students (17.28) is higher than that of pensioners (15.32) with statistical significance (p< 0.01)***. This means that students have a greater need for cognition than pensioners.
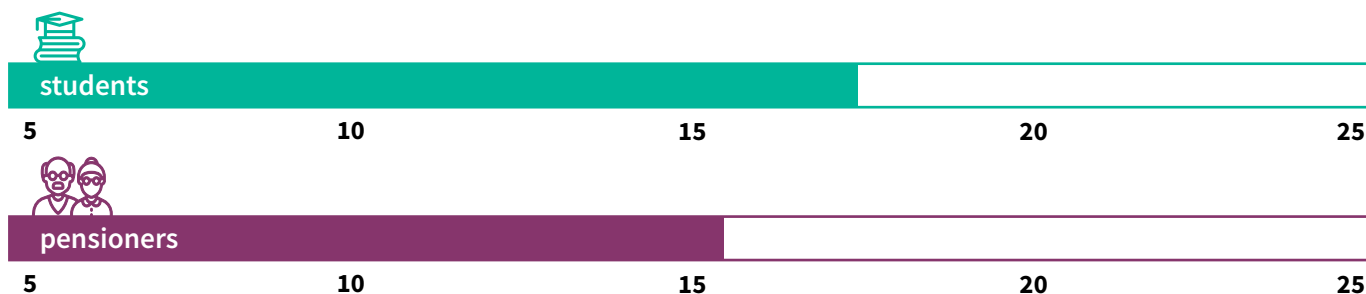
6.5.2 Media locus of control

The Media Locus of Control Scale[26] consists of 6 statements, to which respondents expressed their degree of agreement or disagreement on a five-point Likert scale (where 1 means 'do not agree at all' and 5 means 'completely agree'). The maximum theoretical total score of all six statements is 30 points, while the minimum is 6. Individuals with high scores will consider that it depends on them whether and how accurately they will be informed, while individuals with a low media locus of control will consider that it will depend on the media whether and how accurately they will be informed.

The maximum total score in the group of students is 30 points and only 6 respondents (3.1%) achieved it. The total score on the scale for media locus of control is 20.44. This value indicates that the students' locus of control is above average. Only the average score of the third statement – 'If I am disinformed by the media, I am responsible' (Table 6) is significantly below the average.

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26 Each statement of Scale 2 shows a high item-total correlation, a satisfactory Cronbach Alpha coefficient, as well as saturation by only one factor, thus proving the metric characteristics of this scale.

Table 6 Percentages and arithmetic mean of statements in Scale 2 among students

	Statement	Scores					
		1	2	3	4	5	M
1	If I am disinformed by the media, it is up to me how quickly I get the correct information	8.8	11.9	30.1	25.4	23.8	**3.44**
2	I am in control of the information I receive from the media	11.9	20.2	24.4	24.4	19.2	**3.19**
3	If I am disinformed by the media, I am responsible	28.5	28.0	27.5	4.7	11.4	**2.42**
4	My knowledge of the world is mostly influenced by what I do myself	4.7	16.1	24.9	31.6	22.8	**3.52**
5	By checking different news sources, I can avoid being disinformed	4.7	8.3	21.8	29.5	35.8	**3.83**
6	If I take appropriate actions, I will stay informed	2.6	4.7	20.2	31.1	41.5	**4.04**
	Total scale score						**20.44**

Among the students, no differences were found in the scores of this scale in relation to the demographic characteristics of gender, ethnicity and place of residence (urban/rural).

Five pensioners from the group (or 5.6%) achieved the maximum score of 30 points. The total score on the media locus of control scale is 21.51 points. This value indicates that both among pensioners and among students, the media locus of control is above the theoretical average. Only the average score of the third statement, which read: 'If I am disinformed by the media, I am responsible' has exactly the mean value.

Table 7 Percentages and arithmetic mean of statements in Scale 2 among pensioners

	Statement	Scores					
		1	2	3	4	5	M
1	If I am disinformed by the media, it is up to me how quickly I get the correct information	13.5	11.2	12.4	25.8	37.1	**3.62**
2	I am in control of the information I receive from the media	7.9	19.1	18.0	28.1	27.0	**3.47**
3	If I am disinformed by the media, I am responsible	21.3	18.0	18.0	24.7	18.0	**3.00**
4	My knowledge of the world is mostly influenced by what I do myself	5,6	11.2	20.2	37.1	25.8	**3.66**
5	By checking different news sources, I can avoid being disinformed	6,6	4.5	20.2	27.0	41.6	**3.92**
6	If I take appropriate actions, I will stay informed	4.5	10.1	19.1	29.2	37.1	**3.84**
	Total scale score						**21.51**

In the group of pensioners, a statistically significant difference (p<0.01) was determined in the locus of control between those from an urban and rural environment, with those from an urban environment having a higher locus of control. Also, among pensioners there is a statistically significant difference (p<0.01) in the locus of control between Macedonians and Albanians, Macedonians have a higher score on the locus of control scale than Albanians.

A comparison between students and pensioners on this component of news literacy showed that there was a significant difference between students and pensioners, but this time in favour of pensioners. ***The average value of the total score for students is lower than that of pensioners with statistical significance (p<0.05).*** This means that pensioners, compared to students, believe to a somewhat greater degree that it depends on them whether and how much they will be accurately informed.

students				
6	12	18	24	30

pensioners				
6	12	18	24	30

6.5.3 Media knowledge

The scale for measuring media knowledge consists of 13 questions with multiple answers, and only one correct answer (see attachment, p.72-73). The questions are about how the media operate and what is their influence. The maximum theoretical score that someone can get on this scale is 13, and the minimum is 0. Table 8 shows the results of the group of students. In the table marked with different colours are the questions to which the highest percentage of students answered correctly or incorrectly. Questions marked in green are questions for which students usually know the correct answer. Questions marked in blue are questions for which students usually do not know the correct answer.

Over 88 % of surveyed students know that

> if a topic gets a lot of news coverage, people who watch the news are more likely to think that topic is important"

as do

Over 77 % of students surveyed know that

> the editor-in-chief or producer is the who has the most influence on what news will be shown on television.

Over 86 % of the student respondents do not know that

> journalists do not need a license to work in Macedonia'; they do not know what is meant when media is criticized for being biased

and even

Over 94 %

> of the respondents do not know who usually writes the press release.

Table 8 Percentages of students with correct and incorrect answers to statements in Scale

	Question	% of students with	
		incorrect answer	correct answer
1.	Who owns the largest number of media in North Macedonia?	67.7	36.3
2.	Do journalists/reporters in North Macedonia need a license for employment?	86.5	13.5
3.	Which of the media does not depend primarily on advertisements for financial support?	81.9	18.1
4.	What is the main difference between websites such as Time.mk and websites such as Kanal 5?	66.8	33.2
5.	Who has the biggest influence on what news will be shown on television?	22.8	77.2
6.	What is the coverage of all ethnic entities in the country in the news?	72.0	28.0
7.	What does news coverage of election campaigns usually focus on?	49.7	50.3
8.	What do people usually mean when they criticize the media for being biased?	85.5	14.5
9.	Whose job is it to write a press release?	94.8	5.2
10.	What is the effect of media on people?	69.4	30.6
11.	What tendency to think do people who watch a lot of news have?	34.2	65.8
12.	What do you think about the topic that is reported a lot in the news?	11.9	88.1
13.	What is the possible effect of advertisements in the media on people?	52.8	47.2

Among pensioners, the highest percentage correctly answered the first question - 61.2% and the fifth question- 57.7%. Pensioners gave the least correct answers to the question 'whose job is to write a press release' (ninth question) – 5.2%.

Table 9 Percentages of pensioners with correct and incorrect answers to the statements in Scale 3

Question		Percentages of pensioners with	
		incorrect answer	correct answer
1.	Who owns the largest number of media in North Macedonia?	38.8	61.2
2.	Do journalists/reporters in North Macedonia need a license upon employment?	84.5	15.5
3.	Which of the media does not depend primarily on advertisements for financial support?	58.2	41.8
4.	What is the main difference between websites such as Time.mk and websites such as Kanal 5?	84.5	15.5
5.	Who has the biggest influence on what news will be shown on television?	42.3	57.7
6.	What is the coverage of all ethnic entities in the country in the news?	70.1	29.9
7.	What does news coverage of election campaigns usually focus on?	49.5	50.5
8.	What do people usually mean when they criticize the media for being biased?	73.2	26.8
9.	Whose job is it to write a press release?	94.8	5.2
10.	What is the effect of media on people?	73.2	26.8
11.	What tendency to think do people who watch a lot of news have?	60.8	39.2
12.	What do you think about the topic that is reported a lot in the news?	58.8	41.2
13.	What is the possible effect of advertisements in the media on people?	81.4	18.6

In Table 10, you can see how the respondents (students and pensioners) are distributed according to their total score on Scale 3, which measured the level of knowledge about the media. Among students, it is noted that the most numerous are those who have a total score of 5 or 6 correct answers on the scale. Only one respondent knew 12 out of 13 correct answers. The average correct answers of the entire sample of students in this research is 5.08 correct answers on the scale that measures media knowledge.

The maximum score on this scale for pensioners is 10, and only one pensioner achieved that score. Nine respondents did not answer any question correctly. The largest percentage of respondents - 20%, had four questions answered correctly, and the average score is 4.29, that is, on average, they answered correctly only 4 questions out of 13.

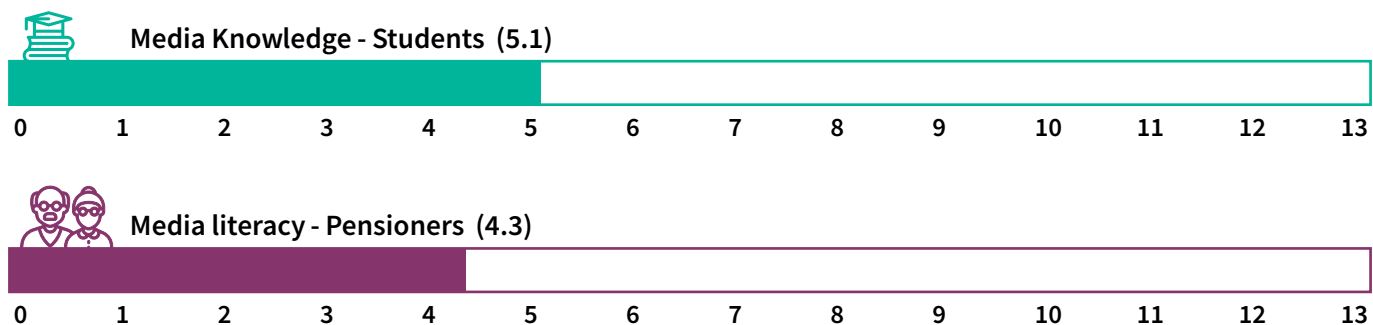**Table 10** Distribution of respondents in terms of the total score of Scale 3

Number of correct answers	Percentages of students	Percentages of pensioners
0	1.6	10.2
1	2.6	7.1
2	6.2	5.1
3	15.5	12.2
4	11.9	20.4
5	19.2	18.4
6	18.1	5.1
7	15.5	10.2
8	4.7	7.1
9	1.6	3.1
10	1.0	1.0
11	1.6	/
12	0.6	/

While on the first two scales (the Need for Cognition Scale and the Media Locus of Control Scale) the student sample was above average, on this scale they are below the theoretical average, which means they know little about media.

It is the same with pensioners. Pensioners achieved the lowest scores on the third scale, compared to the other two scales, and they are also clearly below average on this scale.

The average value of the total score for students (5.1) is higher than that of pensioners (4.3) with statistical significance (p<0.05). Students, on average, know a bit more about the media than pensioners.

Media Knowledge - Students (5.1)

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |

Media literacy - Pensioners (4.3)

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |

In the context of students' ethnicity, there is a statistically significant difference (p<0.01) in favour of Macedonians, i.e. Macedonian students on average know more about media than Albanian students. There is also a statistically significant difference (p<0.05) in media knowledge between students from rural and urban areas, in favour of students from urban areas.

Among pensioners, on the other hand, a statistically significant difference (p<0.01) was found in media knowledge between those with primary or unfinished education and those with higher education (secondary, university, master's and doctoral studies) in favour of those with higher education. In addition, a statistically significant difference (p<0.01) was found between pensioners from urban and rural areas, with those from urban areas having a higher score on this scale. This means that pensioners with higher education and those living in urban areas have better media knowledge.

6.5.4 News Media Literacy Index

The news media literacy index is calculated by summing the scores on the three scales[27] . A high index will mean a greater need for cognition, a higher media locus of control (or statement: 'it depends on us whether and how much we will be accurately informed) and better knowledge about the structure, operation and influence of media. Low index of this literacy will mean low scores on all three scales, i.e. a lower need for cognition, a lower locus of control (statement: 'it depends on the media whether and how much we will be accurately informed') and a lower level of knowledge about media (less knowledge about the structure, operation and influence of media).

Theoretically, the minimum possible news media literacy index is 0, and the maximum is 12 (as a result of scale transformation to ensure summation). The theoretical average is 6.

The news media literacy index of the group of students is 7.1, and the same index of the group of pensioners is 6.7. This means that both groups of respondents have slightly above average news media literacy index. There is no statistically significant difference between the two groups of respondents regarding this media literacy index.

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27 In order to generate an overall news media literacy score, the numerical scores from each scale were standardised to a four-point scale so that they could be equally weighted.
Responses to both Need for Cognition and Media Locus of Control were corrected by correcting the reverse-coded questions and then generating a total score of zero to 4 as an aggregation of the Likert scores divided by the number of questions in the respective scale. Questions on the Media Knowledge scale were "marked" as binary true or false, and the questions were summed and weighted to give an overall Media Knowledge score on a scale of zero to four. From these three dimensions (need for cognition, locus of control, and media knowledge), each fixed on a scale of zero to four, a final score, a news media literacy score out of a possible 12 points, was generated.

News Media Literacy Index - Students (7.1)

0	1	2	3	4	5	6	7	8	9	10	11	12

News Media Literacy Index - Pensioners (6.7)

0	1	2	3	4	5	6	7	8	9	10	11	12
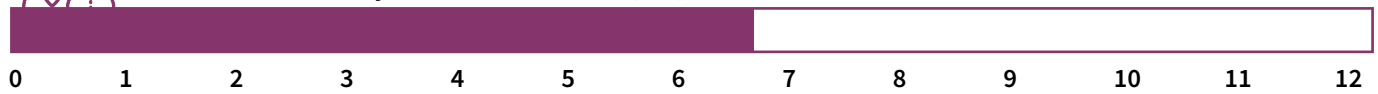
Among students, regarding the demographic variables gender, ethnicity and living in an urban or rural area, statistically significant differences were found between male and female respondents (Mann Whitney coefficient significant at p<0.05), as well as between those living in urban and rural area (Mann Whitney coefficient significant at p<0.01), so male respondents, as well as those students coming from an urban environment, will have a higher news media literacy index.

Additionally, it was tested whether there is a difference in the news media literacy index: between those who have been involved in some media and/or digital literacy training; between those who follow online news more often or less often, as well as between those who work on the computer more often or less often. A difference was found in the level of news media literacy only in relation to the first variable, so students who have been involved in some media/digital literacy training so far will, as expected, be the ones who will have a higher news literacy.

Among pensioners, the only difference found in terms of the news media literacy index is between those who live in an urban area and those in a rural area (Mann Whitney coefficient significant at p<0.01). Those living in urban areas had a higher news media literacy index.

Summary of News Media Literacy Index Findings

- The need for cognition is slightly above average for students and within the theoretical average for pensioners. Among students, it is higher (statistically significant) than among pensioners.

- The media locus of control is above the theoretical average for both students and pensioners. Among pensioners, it is higher (statistically significant) than among students.

- Media knowledge is below average among both students and pensioners. Students have more media knowledge (statistically significant).

- The news media literacy index is slightly above average for both students and pensioners. Students and pensioners did not differ on the news media literacy index.

The difference between the youngest and the oldest respondent in the total sample is 70 years (18 years for the youngest and 88 for the oldest). Despite this age difference, which also implies different temporal, cultural and social conditions in which the two age groups live, with different habits for following news and media culture, different degrees of development of information and communication technologies in the time in which they live, **both groups did not differ in total news media literacy index – no statistically significant difference.**

6.6 Motivation to follow news and learn, educate about disinformation

Motivation is an important factor for all human processes and activities. Here, too, its importance was recognised, and consequently the questionnaire contained several questions through which it was examined:

1) the respondents' motivation for following news through four questions - are they more internally/intrinsically motivated or is the motivation external/extrinsic;

2) the respondents' motivation to learn what disinformation is, which would mean strengthening their own capacities for recognising and dealing with fake news and disinformation.

6.6.1 Motivation for following news – extrinsic and intrinsic (external and internal)

In this short part of the questionnaire that was dedicated to the type of motivation for following the news, 4 questions were asked: two that referred more to the extrinsic motivation to follow the news and two that referred more to the intrinsic motivation to follow the news.

The reasons or motives why we follow the news can be different – someone follows the news because it is necessary for the work they do, someone to stay informed and keep up with the events, someone because they want to, someone because they feel more confident if they follow and if they are informed, someone because of all the reasons mentioned so far, etc. In the questionnaire, the four questions, i.e., statements related to the extrinsic and intrinsic motives for following the news serve as a basis for predicting success in disinformation recognition, as well as the connec-

tion with the news media literacy index. The assumption is that people who follow news because they want to, because they believe it is good for them (who have higher intrinsic motivation) will follow the news more carefully, will be more news media literate and will be able to spot more cues of disinformation.

On the four statements, respondents expressed their degree of agreement or disagreement on a five-point Likert scale (where 1 means 'do not agree at all' and 5 means 'completely agree').

The frequencies of student responses and the arithmetic mean for each statement are shown in Table 11

Table 11 Percentages and arithmetic mean of the statements of the Extrinsic (EM) and Intrinsic Motivation (IM) Scale among students

	Scores					
	1	2	3	4	5	M
I don't see any benefit from the news for me	18.7	23.8	31.1	15.5	10.9	2.76
I follow news because I have to	31.6	18.1	22.8	20.2	7.3	2.56
EM Summary Score						**5.30**
I follow news for my own good	13.0	19.2	37.3	19.2	11.4	2.97
I follow news because I want to	13.5	14.0	23.8	23.8	24.9	3.33
IM summary score						**6.30**

The data show that the students participating in the research have an average total score slightly below average on the first scale (extrinsic motivation scale), and just as slightly above average on the second scale (intrinsic motivation scale).

In the case of pensioners, as can be seen from the table below, the total average score of internal motivation for news is higher, i.e. for internal it is almost 8 and for external it is almost 7.

Table 12 Percentages and arithmetic mean of the claims of the Extrinsic (EM) and Intrinsic Motivation (IM) Scale among pensioners

	Scores					
	1	**2**	**3**	**4**	**5**	**M**
I don't see any benefit from the news for me	21.6	11.4	20.5	21.6	25.0	3.17
I follow news because I have to	9.1	15.9	19.3	33.0	22.7	3.44
EM Summary Score						**6.61**
I follow news for my own good	8.0	1.1	29.5	23.9	37.5	3.82
I follow news because I want to	8.0	2.3	20.5	21.6	47.7	3.99
IM summary score						**7.81**

The mean values of the total score of both extrinsic and intrinsic motivation for students are lower than those of pensioners with statistical significance (p<0.01).

Extrinsic motivation

Intrinsic motivation

6.6.2 Motivation to learn about disinformation

To examine the motivation to learn what disinformation is, a short scale was constructed containing 3 questions[28]. The first question refers to the motivation to attend a course/training/workshop for successfully recognising and countering disinformation; the second question was about motivation for self-improvement for successfully recognising and countering disinformation, and the third question about how important it is for respondents to know how to skilfully recognise and counter disinformation. All three questions were answered on a five-point Likert scale, whereby 1 by default meant 'I'm not motivated at all' and 'I don't care at all', and 5 'I'm completely motivated' and 'I care too much'.

Table 13 Percentages and arithmetic means of statements in the Scale for motivation to learn about disinformation with students

	Scores					
	1	**2**	**3**	**4**	**5**	**M**
Motivation to attend course/training/workshop on successfully recognising and countering disinformation	11.1	10.6	24.9	28.0	25.4	3.46
Self-improvement motivation to successfully recognise and counter disinformation	7.4	7.9	23.8	32.3	28.6	3.67
The importance of knowing how to skilfully recognise and counter disinformation	1.6	4.2	26.5	29.1	38.6	3.99
Total scale score						**11.12**

28 All 3 statements from this scale show a high item total correlation, a high Cronbach Alpha coefficient, as well as saturation of only one factor, which proved the metric characteristics of this self-constructed motivation scale for knowing and dealing with disinformation.

The student data suggests that on each statement, and subsequently on the Disinformation Learning Scale total score, respondents are 'above' average. The figures show that the majority of students choose the 4th or 5th alternative ('I am very motivated and it is very important for me to know') of each of the 3 statements. Speaking generally for the whole sample of students, there is above average motivation to learn, education to recognise and counter disinformation.

Table 14 Percentages and arithmetic means of statements in the Scale for motivation to learn about disinformation with pensioners

	Scores					
	1	**2**	**3**	**4**	**5**	**M**
Motivation to attend course/training/workshop on successfully recognising and countering disinformation	17.3	11.2	23.5	22.4	25.5	3.28
Self-improvement motivation to successfully recognise and counter disinformation	14.3	7.1	23.5	25.5	29.6	3.49
The importance of knowing how to skilfully recognise and counter disinformation	9.2	6.1	19.4	31.6	33.7	3.74
Total scale score						**10.51**

Like the students and the pensioners, the sample is motivated to learn and upgrade their skills in recognising and countering disinformation.

There is no statistically significant difference between students and pensioners in terms of motivation to recognise and counter disinformation.

Motivation for education on disinformation

Summary of findings regarding motivation to learn about disinformation:

◉ Both students and pensioners have greater intrinsic (internal drive driven) than extrinsic (external drive driven) motivation to follow news.

◉ Pensioners have higher both extrinsic and intrinsic motivation to follow news than students.

◉ The motivation to recognise and deal with disinformation of both groups is above average which means that it is important for them to strengthen their skills to recognise disinformation through training or by self-study.

6.7 Awareness of the existence of barriers

Important factor for recognising cues of disinformation certainly is the awareness of the existence of obstacles or barriers to recognising and countering disinformation. In this context, respondents were asked how much they agree that emotions, insufficient knowledge, insufficient experience and insufficient interest in a certain topic can be a barrier in the process to recognise disinformation. Again, the respondents answered on a scale from 1 to 5 (where 1 meant 'I do not agree at all' and 5- 'I completely agree'), so a higher total score on this scale means a greater agreement that everything mentioned above can be a barrier in the process of distinguishing true from fake news. The theoretical maximum score on this scale is 20, and the minimum is 4.

The table with presentation of the distribution of answers to the four questions about what is perceived as a barrier in the process of recognising disinformation is presented below.

Mean values above the theoretical average (3.0) of each recognised barrier say that a greater number of students agree to a greater degree that the emotions caused by a news item, as well as the insufficient experience and insufficient interest in the topic in the news, and especially insufficient knowledge can represent barrier to distinguish true from fake news.

Table 15 Percentages and arithmetic mean of statements about barriers to recognising disinformation among the sample of students

	Scores					
	1	2	3	4	5	M
Emotions triggered by a news story can be a barrier to distinguishing true from fake news	5.3	10.6	25.4	28.0	30.7	3.68
Insufficient knowledge about the topic in the news can be a barrier to distinguishing true from fake news	2.6	4.2	14.8	32.8	45.5	4.14
Insufficient experience related to the topic in the news can be a barrier to distinguish true from fake news	3.7	2.6	24.9	31.7	37.0	3.96
Insufficient interest in the topic of the news can be a barrier to distinguishing true from fake news	6.3	8.5	21.2	26.5	37.6	3.80
Summary score						**15.58**

On these statements, 20 respondents from pensioners, or 22%, achieved a maximum score of 20. Here, too, as among students, the mean values of each barrier statement indicate that, to a large extent, pensioners recognise all the listed barriers as such. If we take a closer look at the percentages of answers with a score of 4 and 5 for each statement, it can be seen that all of them are over 64%, and as much as 95% of pensioners agree that insufficient experience (third statement) can be a barrier to recognising disinformation. The average maximum score is 15.48.

Table 16 Percentages and arithmetic mean of statements about barriers to recognition of disinformation among pensioners

	Scores					
Statement	1	2	3	4	5	M
Emotions triggered by a news story can be a barrier to distinguishing true from fake news	15.6	5.6	14.4	33.3	31.1	3.59
Insufficient knowledge about the topic in the news can be a barrier to distinguishing true from fake news	3.3	10.0	16.7	30.0	40.0	3.93
Insufficient experience related to the topic in the news can be a barrier to distinguish true from fake news	6.7	2.2	17.8	34.4	38.9	3.97
Insufficient interest in the topic of the news can be a barrier to distinguishing true from fake news	5.6	5.6	20.0	22.2	46.7	3.99
Summary score						**15.48**

There is no statistically significant difference between students and pensioners in terms of their awareness of what can be a barrier in the process of recognising and countering disinformation.

Awareness of barriers for the existence of disinformation

STUDENTS																
PENSIONERS																

| 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
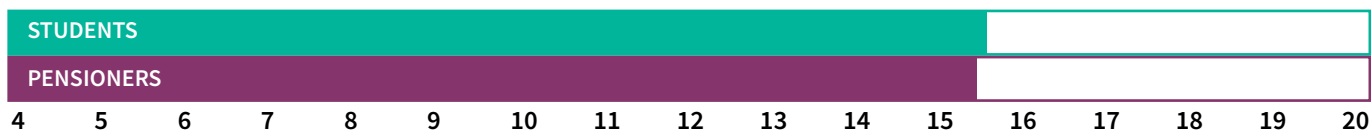
In summary, in terms of awareness of the existence of barriers:

◉ Both students and pensioners have above-average results on the scale of awareness of the existence of barriers in the process of recognising and countering disinformation.

◉ Students and pensioners are no different in this awareness.

This result encourages that there is an awareness among both students and pensioners of the existence of barriers in the process of recognising disinformation, and this in turn speaks of an awareness of the information that individuals receive from the media. When one is aware that there may be obstacles to recognising disinformation, and that those obstacles are within oneself, not outside of oneself, then this likely ceases to be a barrier. A barrier only has power when it is not conscious. Process awareness means active consideration when receiving information, not automatic adoption. It is a good basis for further strengthening this awareness and criticality, which, in turn, can lead to an increase in resistance to disinformation.

6.8   Knowledge and interest in information related to the European integration process and climate change

In the context of media literacy, the individual's interest and knowledge of information related to the EU integration process and climate change is important for the following reasons:

✓ interest and knowledge of these two areas means knowledge of important and current topics of socio-political life in North Macedonia;
✓ the interest and knowledge of these two areas is somehow related to responsible citizenship. A well-informed citizen is a responsible citizen who can make decisions based on true and verified information;

✓ the connection of media literacy with the interest and knowledge of these areas will also mean proving the assumption that media literacy is an important factor for active and responsible citizenship.

From there, 3 blocks of questions are included in the questionnaire: the first one about the knowledge of information related to the topics: European integration of North Macedonia and climate change; the second for the interest in these topics and, the third block for the importance that the individual attaches to the two mentioned topics.

First block. In this block there are 11 questions, five of which refer to the European integration process, and six to climate change. The questions refer to relatively general, but also to more specific knowledge about the two areas, about which the respondents should be informed through different sources, different media and news.

◉ Knowledge of the European integration processes

As mentioned in the instrument description, this section covers five questions. The questions are with multiple answers, of which only one is correct. A correct answer is scored with 1 point, and an incorrect one with 0. The maximum score of these questions is 5, and the minimum is 0. The five questions refer to events that are generally known about the integration process and which the media reports on daily basis.

Table 17 Percentages of respondents with correct answers to the statements of the EU Knowledge Scale

Questions		% of students with		% of pensioners with	
		Incorrect answer	Correct answer	Incorrect answer	Correct answer
1.	Who is North Macedonia's main negotiator with the EU?	86.2	13.8	74.5	25.5
2.	When did North Macedonia acquire the status of a candidate country for membership?	86.8	13.2	80.6	19.4
3.	When was the Intergovernmental Conference on North Macedonia held?	91.5	8.5	64.3	35.7
4.	What is Frontex?	90.5	9.5	80.6	19.4
5.	What is the purpose of screening?	73.5	26.5	65.3	34.7

The students showed very little knowledge of these issues regarding the European integration process. On average, they do not get a single question answered correctly. About 27% of the students answered the fifth question correctly (they know the most), and the least they knew how to answer the third question correctly - when the Intergovernmental Conference on North Macedonia was held - only 8.5% of the students knew.

Although better than the group of students, pensioners also have very poor knowledge about the European integration process. Over 65% answered incorrectly to all five questions, and the total average score is 1.35. It is interesting to see that the highest percentage of pensioners gave the correct answer to the third question, which the students know the least about.

Table 18 Distribution of respondents in relation to the total score of the European Integration Scale

Number of correct answers	Percentages of students	Percentages of pensioners
0	49.7	31.6
1	37.0	33.7
2	7.4	14.3
3	3.7	12.2
4	2.1	5.1
5	/	3.1

There are no student respondents who answered all questions correctly; Half of the surveyed students do not have a single correct answer; With one correct answer are 37% of the students. From pensioners three knew the answers to all the questions, but 66% of the pensioners did not know any correct answer or only to one question.

The average value of the total score for students is lower than that of pensioners with statistical significance (p<0.01).

◉ Knowledge of climate change issues

The climate change questions block has 6 closed-ended questions (with suggested answers), to which there is only one correct answer. Theoretically, the minimum score that can be obtained on this scale is 0, and the maximum is 6.

The percentages of correct answers to each question of this scale for both groups of respondents are shown in the following table.

Table 19 Percentages of respondents with correct answers to the statements of the Climate Change Knowledge Scale

	Questions	% of students with		% of pensioners with	
		Incorrect answer	Correct answer	Incorrect answer	Correct answer
1.	What are the main causes of climate change?	48.9	51.5	61.2	38.8
2.	What actually is climate change?	30.0	70.0	38.8	61.2
3.	How does the greenhouse effect work?	80.5	19.5	77.6	22.4
4.	Does North Macedonia have a climate action strategy?	89.5	10.5	65.3	34.7
5.	Which ministry is responsible for creating climate change policies?	50.5	49.5	31.6	68.4
6.	Is climate change the same as air pollution?	27.4	72.6	38.8	61.2

Regarding certain knowledge of the students about the phenomenon of climate change, from the table 3 groups of questions can be observed: questions to which the majority of students know the correct answer (that is the sixth question); questions for which the majority of students do not know the correct answer (the third and fourth questions); and questions for which half of the surveyed students know and half do not know the correct answers, such as questions about the main causes of climate change and which ministry is responsible for creating climate change policies.

Table 20 Distribution of respondents in relation to the total score of the Climate Change Scale

Number of correct answers	Percentages of students	Percentages of pensioners
0	7.9	7.1
1	10.5	4.1
2	16.3	19.4
3	37.9	41.8
4	22.1	17.3
5	3.7	10.2
6	1.6	/

The percentage of students who answered all the questions correctly is 1.6%, while none of the pensioners answered all the questions correctly. Almost 8% of students and 7% of pensioners do not have a single correct answer. The most numerous students are those who have 3 correct answers, and their percentage is 37.9%. Three quarters are the students who have 2 to 4 correct answers. 10% of pensioners, on the other hand, answered five questions correctly. The highest percentage - 41.8% of pensioners knew the correct answer to three questions, just like the students. Their mean total score across all questions is 2.89, which means that on average they answered almost three out of six questions correctly. The most correct answers were given to the fifth question - 68%, and 61% of the pensioners answered the second and sixth questions correctly (table 19).

There is no statistically significant difference between students and pensioners on the Climate Change Knowledge Scale.

6.8.1 Interest in the topics: European integration process and climate change and the importance of those topics for the individual

In addition to questions about knowledge regarding the two topics, the questionnaire asked questions regarding the interest in topics related to European integration and climate change, as well as how important these topics are to the respondents themselves.

A descriptive description of these two questions follows.

Table 21 Percentages and arithmetic mean of the claims of interest and importance of the topics of European integration and climate change among students

	Scores					
	1	**2**	**3**	**4**	**5**	**M**
Interest in topics related to the European integration of North Macedonia	26.5	12.2	33.9	16.4	11.1	2.74
Interest in topics related to climate change in North Macedonia	14.3	7.9	27.0	30.7	20.1	3.34
Importance of topics such as the European integration of North Macedonia	21.7	13.8	30.7	20.6	13.2	2.90
Importance of topics such as climate change in North Macedonia	10.1	5.8	20.6	36.5	27.0	3.65

Students' interest in topics related to climate change is greater than interest in topics related to the European integration process. This difference, almost in the same ratio, is mirrored in the context of the importance of the topics for the European integration and climate change for them. Topics such as the European integration are less important to students compared to topics such as climate change.

Table 22 Percentages and arithmetic mean of statements about interest and importance of the topics of European integration and climate change among pensioners

	Scores					
	1	**2**	**3**	**4**	**5**	**M**
Interest in topics related to the European integration of North Macedonia	17.3	6.1	27.6	11.2	37.8	3.46
Interest in topics related to climate change in North Macedonia	8.2	8.2	17.3	22.4	43.9	3.86
Importance of topics such as the European integration of North Macedonia	17.3	4.1	17.3	26.5	34.7	3.57
Importance of topics such as climate change in North Macedonia	8.2	4.1	16.3	25.5	45.9	3.97

There is a slight difference in the pensioners' interest in the two topics in favour of the climate change topic, as well as in the importance these topics have for them.

Compared to the responses of students in the sample, all scores of the pensioners are higher than for students, so it appears that pensioners are more motivated to learn or find out more about these topics.

The mean values of the total score and the interest in the two topics and the importance for the respondents of the two topics of the students are lower than those of the pensioners with statistical significance (p<0.01).
This means that compared to students, pensioners are more interested in both topics and attribute more importance to them.

Summarised in terms of knowledge and interest in the European integration processes and climate change:

- The ignorance of the pensioners, but especially the students, regarding certain basic facts about North Macedonia's membership in the European Union is large.

- Compared to the answers to the scale of facts about the process of European integration, students and pensioners are much more informed and knowledgeable about climate change. On average, out of a total of 6, both answered almost 3 questions correctly.

- Both pensioners and students are more interested and find more important to them to be topics of climate change than the topics related to the European integration process.

- Compared to students, pensioners are more interested and attach more importance to both topics.

This result is interesting because not only do both groups show ignorance of the events and processes of our country in its European integration, but (knowledge) with the students is so small that it can be said non-existent. The five questions did not examine expert knowledge of the processes, but knowledge of important dates and facts about the process. It would be advisable to do additional research on the reasons for the very low level of knowledge on this issue, which, according to the long-term determination of all governments so far, has been seen as key to the development of the country.

In addition to being less known, the interest and importance attributed to European integration as a topic is less compared to the interest and importance given to climate change. This is true for both age groups, but especially for students.

6.9 Quiz questions – recognising cues that indicate possible disinformation or incorrect news

These three questions were designed to test the skill of recognising disinformation cues. The original idea is from an educational online campaign by the BBC as an educational quiz on recognising disinformation (https://www.bbc.co.uk/bitesize/articles/zwfm8hv).). It is solved online by clicking on the parts that seem suspicious, and receiving information whether the indicated part is correctly recognised as a sign of disinformation (indicated by a green light) or not (indicated by a red light). The quiz also offers a display of all questionable parts and an additional educational short video explaining how to recognise disinformation.
In the online version of the questionnaire, the respondents were also asked to click on any parts of the online news that they found suspicious, in terms of disinformation.

In doing so, they received information on whether it was correctly recognised as a sign of disinformation. There were limits on the total number of clicks – 12, while on all three questions there were 9 cues indicating disinformation. Recognition cues in the quiz questions included: typos such as permutations of letters in a word, compound words, misspellings (Ferruary instead of February for example), incorrect data such as a non-existent date (February 31 or November 31), using emotionally charged words, not citing the source of the information, using proverbs that cause a certain feeling, words written in capital letters, emphasised punctuation marks (for example several exclamation points next to each other - !!!!) etc. All three questions included all types of cues.

Outline of the three quiz questions

The quiz questions were designed as news on online portals on three topics, the first of which is about education and was taken from the BBC quiz and translated, and the other two are related to the topics important for the pur poses of the research - one about the European integration of North Macedonia, and the other on the subject of climate change.

6.9.1 Students

As can be seen from table 23, there is not a student who recognised all the cues of disinformation in one or more online news stories.

In relation to all 3 online news, the number of students who failed to recognise even one correct sign of disinformation is the largest.

Table 23 Distribution of respondents in relation to the total score of recognising cues of disinformation

Number of correct answers	Frequencies and percentages of respondents who correctly recognised the cues of disinformation in the first online news	Frequencies and percentages of respondents who correctly recognised the cues of disinformation in the second online news	Frequencies and percentages Of respondents who correctly recognised the cues of disinformation in the third online news
0	36 (19.7)	48 (26.7)	44 (24.6)
1	31 (16.9)	38 (21.1)	32 (17.9)
2	35 (19.1)	31 (17.2)	23 (12.8)
3	24 (13.1)	33 (18.3)	14 (7.8)
4	12 (6.6)	13 (7.2)	14 (7.8)
5	16 (8.7)	9 (5.0)	24 (13.4)
6	13 (7.1)	6 (3.3)	20 (11.2)
7	14 (7.7)	2 (1.1)	6 (3.4)
8	2 (1.1)		2 (1.1)

Out of a **total of 9** in each news item, students **recognise an average of 2.43** cues of disinformation.

6.9.2 Pensioners

The situation with pensioners is similar. Most of the pensioners did not recognise any or only one sign of disinformation.

Only on the last quiz question, all 9 cues of disinformation from one pensioner were found.

Table 24 Distribution of respondents in relation to the total score of recognising cues of disinformation among pensioners

Number of correct answers	Frequencies and percentages of respondents who correctly recognised the cues of fake news in the first online news	Frequencies and percentages of respondents who correctly recognised the cues of fake news in the second online news	Frequencies and percentages of respondents who correctly recognised the cues of fake news in the third online news
0	35(38.5)	44 (49.4)	40 (45.5)
1	20 (22)	14 (15.7)	20 (22.7)
2	12 (13.2)	11 (12.4)	10 (11.4)
3	9 (9.9)	12 (13.5)	7 (8.0)
4	7 (7.7)	5 (5.6)	4 (4.5)
5	6 (6.6)	2 (2.2)	3 (3.4)
6	1 (1.1)	1 (1.1)	2 (2.3)
7	1 (1.1)		1 (1.1)
9			1 (1.1)

Out of a **total of 9** in each news item, pensioners **recognise an average of 1.38** disinformation cues.

The correlations between the total recognition of disinformation cues in all three news items among both students and pensioners are high and significant (all at the 0.01 level), which suggests that if someone can recognise the disinformation cues of the first, they will be able to recognise the same as well in the second and third news, regardless of the topic covered in the news. Hence, for all subsequent runs, the results from all three news items are aggregated into one variable: total disinformation cues recognised for all three news items.

The comparison between students and pensioners in terms of the number of recognised disinformation cues showed that **students are more successful** (differences are statistically significant at 0.01 level) **in recognising cues** in all three news items separately, and consequently in the total score.

Summary of findings regarding recognising cues of disinformation:

◉ Out of a total of 9 in each news item, students on average recognise 2.43 cues, pensioners 1.38 cues of disinformation.

◉ Success in recognising cues of disinformation does not depend on the topic of the news. If one can recognise the cues of disinformation in one, they will be able to recognise the same type of cues in all news.

◉ Students are more successful at recognising cues of disinformation compared to pensioners.

# 6.10 Testing the Disinformation Recognition Model

Testing of the disinformation recognition model took place in three steps.

STEP ONE: **Defining the concept/construct of News Media Literacy**

In the first step, the functionality of the scales that make up the construct news media literacy was examined, given that they are being applied for the first time in the Macedonian and Albanian languages in the territory of the RNM. The data showed that all three scales: The Need for Cognition Scale, the Media Locus of Control Scale and the Media Knowledge Scale have excellent metric characteristics (in both samples), and their use in the Macedonian and Albanian languages is justified in North Macedonia. The News Media Literacy Index (NMLI) was also calculated in this step, and the procedure for summarising the scales is detailed in the News Media Literacy section (p. 37).

Picture No.2 The construct news media literacy

News Media Literacy

Need for cognition

Media knowledge

Locus of control
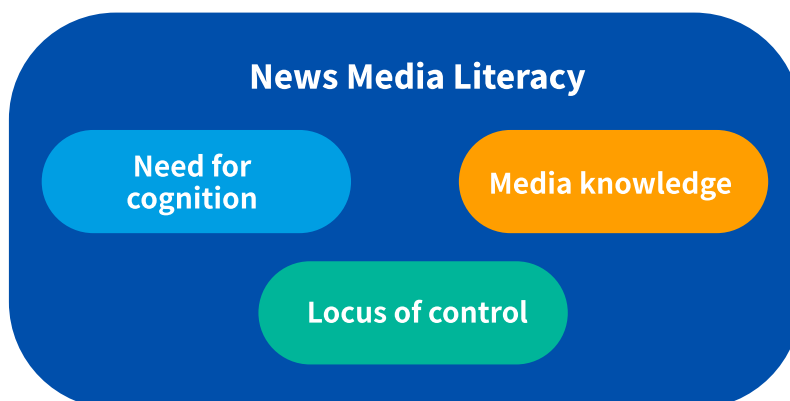
After defining the concept of news media literacy, the second step followed.

STEP TWO: **Expanding the concept of or defining the "boundaries" of media literacy**

The second step is actually expanding the concept or defining the 'boundaries' of media literacy. At this stage it is assumed that news media literacy is only one component of media literacy, and that there are three other components, all linked together, that make up media literacy:

- Intrinsic (internal) motivation (IM) for following news
- Motivation to learn, education about disinformation
- Awareness of the existence of barriers in the process of recognising disinformation.

Namely, it was assumed that those individuals who have higher news media literacy are more intrinsically motivated to follow news (they follow news because they want to and consider it to be for their own good), have more motivation to learn about disinformation and are more aware of the barriers that can arise in the process of recognising disinformation. If it is shown that there is a connection between these four segments/components, it will probably be an argument that they can be seen as components of the construct: media literacy.
The obtained correlations among the students are shown in the following table.

Table 25: Correlations between all components of media literacy among students

	Need for cognition	Locus of control	Media knowledge	NMLI	IM	EM	Motive for learning about disinf.	Awareness of barriers
Need for cognition		0.03	0.30**	0.70**	-0.05	-0.02	0.20**	0.20**
Locus of control	0.03		0.11	0.54**	0.22**	0.07	0.15	0.14
Media knowledge	0.30**	0.11		0.72**	0.06	0.01	0.28**	0.20**
NMLI	0.70**	0.54**	0.72**		0.05	0.03	0.31**	0.27**
IM	-0.05	0.22**	0.06	0.05		0.04	0.23**	0.04
EM	-0.02	0.07	0.01	0.03	0.04		0.07	0.08
Motive for learning about disinform.	0.20**	0.15	0.28**	0.31**	0.23**	0.07		0.26**
Awareness of barriers	0.20**	0.14	0.20**	0.27**	0.04	0.08	0.26**	

NMLI=News Media Literacy Index; IM=Intrinsic Motivation; EM=Extrinsic Motivation
*= $p<0.05$; **= $p<0.01$

These obtained correlations can be shown more vividly in the following way, which would show the mutual correlation of all components. Namely, the appearance of the media literacy construct among students would look like this:

Picture No.3 Media literacy construct among students

News media literacy

Barrier awareness

Locus of control

Need for cognition
Media knowledge

Intrinsic motivation

Motivation to learn about disinformation

Among students, news media literacy is related to intrinsic motivation through the locus of control. Quite expectedly, if it is known that the commonality of these two components is the activation tendency: if the individual has the attitude that they rule and have control in relation to the information they receive from the media, it is expected that there will also be an intrinsic (from internal motivations) motivation to follow the news.

News media literacy is related to learning motivation, disinformation education through the need for cognition and media literacy. Quite expected if it is known that all 3 components refer to thought and cognitive processes. Individuals who are intellectually curious and have a greater need for cognition and involvement in thought processes will be motivated to learn and invest in disinformation education and will have greater media knowledge.

News literacy is related to awareness of barriers to disinformation recognition through the need for awareness and media knowledge. And again, quite predictably, individuals who are intellectually curious will have greater knowledge of the media and will be more aware of barriers in the disinformation process.

Since extrinsic motivation was not correlated with any component, it could not be included in this construct.

Intrinsic motivation by its nature is more related to the motivation to learn. Highly internally motivated news followers will also be more motivated to learn about disinformation. All these connections were expected and speak for the existence of a construct of interdependent components.

The obtained correlations among pensioners are shown in table 26.

**Table 26:** Correlations between all components of media literacy among pensioners

	Need for cognition	Locus of control	Media knowledge	NMLI	IM	EM	Motive for learning about disinf.	Awareness of barriers
Need for cognition		0.02	0.22*	0.62**	0.03	-0.03	0.08	0.11
Locus of control	0.02		0.15	0.59**	0.34**	0.35**	0.52**	0.39**
Media knowledge	0.22*	0.15		0.71**	0.00	0.03	0.17	0.42**
NMLI	0.62**	0.59**	0.71**		0.19	0.21	0.42**	0.49**
IM	0.03	0.34**	0.00	0.19		0.23	0.13	0.17
EM	-0.03	0.35**	0.03	0.21	0.23		0.24	0.24
Motive for learning about disinform.	0.08	0.52**	0.17	0.42**	0.13	0.24		0.25*
Awareness of barriers	0.11	0.39**	0.42**	0.49**	0.17	0.24	0.25*	

NMLI=News Media Literacy Index; IM=Intrinsic Motivation; EM=Extrinsic Motivation
*= p<0.05; **= p<0.01

If we would like to show this graphically, in order to get a better overview, i.e. visualisation of the mutual dependence of the components of media literacy, it would look like this:

Picture No.4 Media literacy construct among pensioners
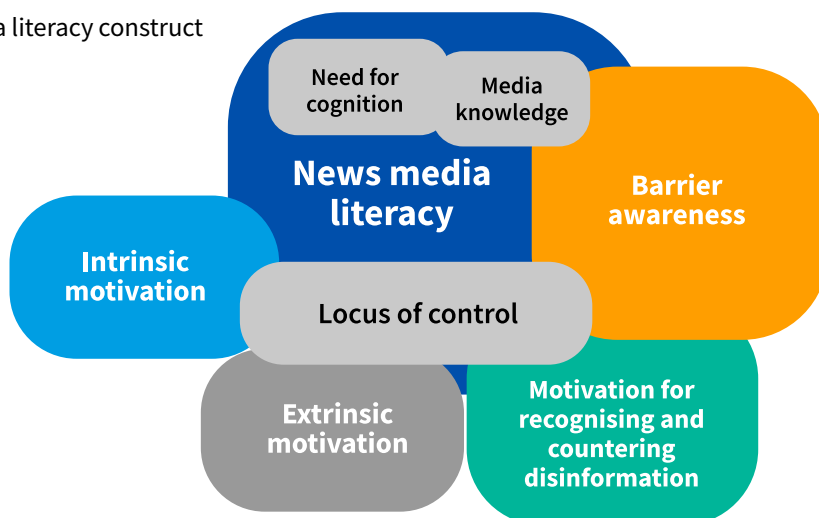
The relationship between the components of media literacy among pensioners is in many ways similar to that among students, which once again speaks of the real existence of such a complex construct of interdependent variables, which could be called media literacy. It is necessary and interesting to comment on two points that distinguish pensioners from students. The first is the additional inclusion of extrinsic motivation (from external stimuli) for following news in this construct. In contrast to students in whom news media literacy through locus of control was related only to intrinsic motivation, among pensioners, news media literacy through locus of control is related to both intrinsic and extrinsic motivation. Older and senior citizens who feel that they themselves control the information from the media will be both intrinsically and extrinsically more motivated to follow the news. The second point is that the locus of control, in this construct of media literacy, takes a central place among pensioners. The locus of control is the unifying component that brings all the other components together. Among pensioners, it is as if everything is in the hands of the attitude that the individual is the one who decides whether, how much and how they will be informed. When you have this attitude, then you will be motivated to learn about disinformation, you will be more aware of the barriers, you will be both extrinsically and intrinsically motivated to follow the news. Pensioners are at an age when interests in many things may be decreasing, and consequently the desire, the motivation to invest in something may also decrease, so people's attitude that it depends on them whether and how much they will be informed will be decisive for the desire and motivation (both intrinsic and extrinsic) to follow news and invest in learning about disinformation. That attitude will determine the activation component for pensioners.

After proving that news media literacy does correlate with several hypothesised relationships, the third step and testing of the disinformation recognition model began.

STEP THREE: **Creating groups of respondents according to media literacy**

The third step consists of creating groups of respondents according to their media literacy, as well as testing the differences that exist between those groups.

Based on these 4 variables (5 for pensioners) which are interrelated and which were assumed and proven to make up the construct of media literacy, two groups were created: a group with higher media literacy and a group with lower media literacy[29].

Among students, the first group included respondents who are more news media literate, those who are intrinsically motivated to follow news, highly motivated to learn to recognise disinformation, as well as those who are aware of the existence of barriers in the process of recognising disinformation. The second group included respondents who are less news media literate, those who have less intrinsic motivation to follow news, and who are less motivated to learn to recognise disinformation, as well as those who are less aware of the existence of barriers in the recognition process disinformation.

The same classification was made for pensioners, but extrinsic motivation was also entered for them, considering that it also correlated with one of the components of news media literacy. The first group included respondents who are more news media literate, who are intrinsically but also extrinsically motivated to follow news, highly motivated to learn to recognise disinformation, as well as those who are aware of the existence of barriers in the process of recognising disinformation. The second group included respondents who are less news media literate, those who have less intrinsic but also extrinsic motivation to follow news, and who are less motivated to learn to recognise disinformation, as well as those who are less aware of the existence of barriers in the process of recognising disinformation.

A group with higher media literacy

Higher news media literacy

Greater intrinsic/extrinsic motivation to follow news

Greater motivation to learn about disinformation

Greater awareness of barriers in recognising disinformation

Group with lower media literacy:

Lower news media literacy

Less intrinsic/extrinsic motivation to follow news

Less motivation to learn about disinformation

Less awareness of barriers to disinformation recognition

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29 To create these two groups, a cluster analysis (two step cluster analysis) was used by entering the four variables as a basis for classification.

It was assumed that these two formed groups (both among students and pensioners) will differ in:
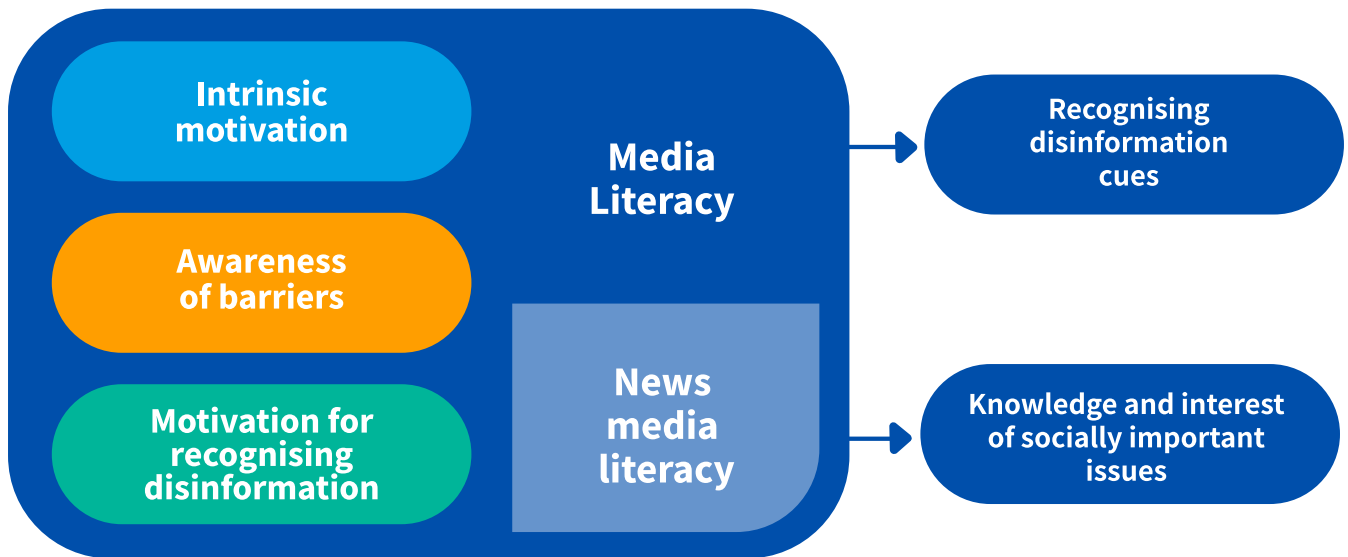
- the competence for recognising disinformation,
- knowledge and interest in socially important and current topics of modern life, such as the European integration process and climate change.

With students there was significant difference between these two groups and the competence for recognising disinformation (p<0.05), as well as level of knowledge, interest in important social and political issues (the differences are all significant to 0.01)[30] . The group with higher media literacy on average recognise more disinformation cues in online news in comparison to the group with lower media literacy. The group with higher media literacy demonstrate greater knowledge, as well as more interest in socially important issues. This proves the assumed model of recognising disinformation.
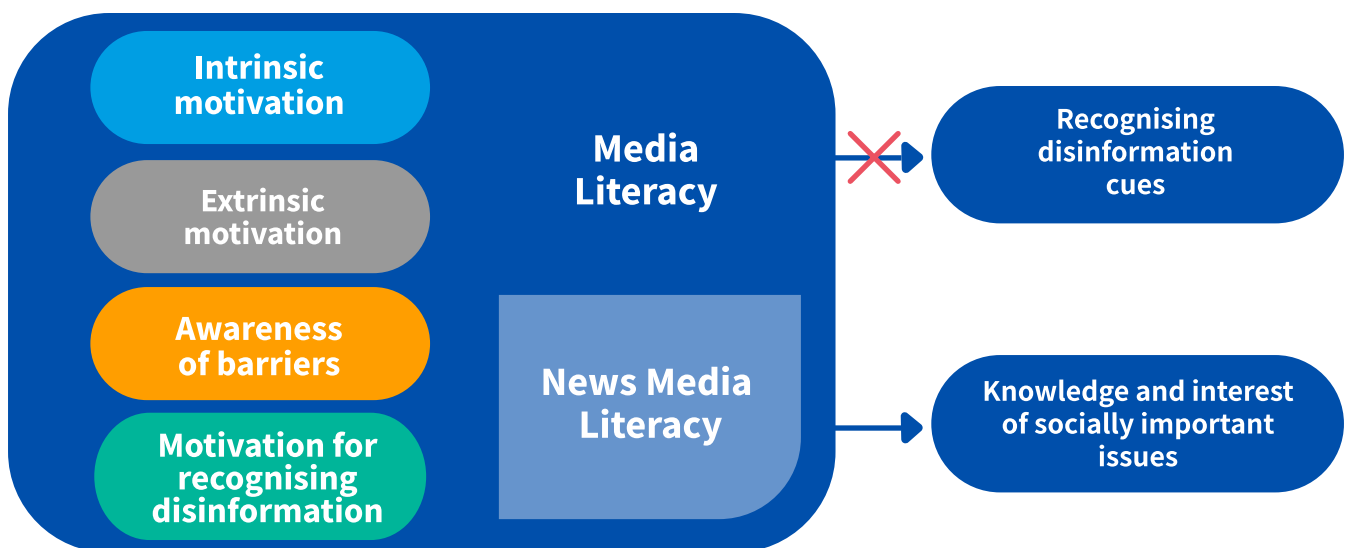
Students

Picture No. 6. Media Literacy and competence for recognizing disinformation in the group of pensioners

Pensioners

Picture No. 5. Media Literacy and competence for recognizing disinformation in the group of students

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30 Mann Whitney coefficient was used for all calculations of statistical difference between arithmetic means

Among pensioners, no significant difference was shown between these two groups in the ability to recognise disinformation, but a difference was shown in the levels of knowledge and interest in important social and political topics (differences are all significant at 0.01). Pensioners with both higher and lower media literacy equally fail to recognise the cues of disinformation. However, those with higher media literacy demonstrate greater knowledge and interest in socially important topics. This partially proved the assumed model of disinformation recognition among pensioners.

Summarising all the data (both from the univariate analysis (27p.- 45p.) as well as from testing the disinformation recognition model (45p.- 49p.) two groups of individuals could be profiled among both students and pensioners.

Apart from them, a profile was constructed based on the responses of the participants in the focus group with persons from the socially vulnerable category, as well as a 'desirable' profile, according to all the results obtained and their analysis.

STUDENTS

Students with LOWER media literacy

- More often female
- No media/digital literacy education
- From a rural environment
- Equally from all ethnic communities

- Lower need for cognition
- Lower locus of control
- Lower level of media knowledge

= lower news media literacy index

- Lower intrinsic motivation to follow news
- Less motivation to learn about disinformation
- Less awareness of the existence of barriers in the information process

- Less knowledge about the EU integration of RNM
- Less knowledge about climate change
- Less interest and attaching less importance to topics like the EU integration of RNM
- Less interest and attaching less importance to topics such as climate change

Less successful in recognising disinformation cues in online news

Students with HIGHER media literacy

- More often male
- Participation in media/digital literacy education
- From an urban environment
- Equally from all ethnic communities

- Higher need for cognition
- Higher locus of control
- Greater level of media knowledge

= higher news media literacy index

- Higher intrinsic motivation to follow news
- Greater motivation to learn about disinformation
- Greater awareness of barriers in the information process

- More knowledge about the EU
- More knowledge about climate change
- Greater interest and attaching greater importance to topics such as the EU
- Greater interest and attaching less importance to topics such as climate change

Greater success in recognising disinformation cues in online news

PENSIONERS

Pensioners with LOWER media literacy	Pensioners with HIGHER media literacy
• Equally male and female • Equally from all ethnic connoisseurs • From all levels of education • From a rural environment	• Equally male and female • Equally from all ethnic communities • From all levels of education • From an urban environment
• Lower need for cognition • Lower locus of control in relation to the media • Lower level of media knowledge = lower news media literacy index	• Higher need for cognition • Higher locus of control • Greater level of media knowledge = higher news media literacy index
• Lower intrinsic motivation to follow news • Lower extrinsic motivation to follow news • Less motivation to learn about disinformation • Less awareness of barriers in the information process	• Higher intrinsic motivation for following news • Higher extrinsic motivation to follow news • Greater motivation to learn about disinformation • Greater awareness of barriers in the information process
• Less knowledge about EU integration process • Less knowledge about climate change • Less interest and attaching less importance to topics such as EU integration of the Republic of Macedonia • Less interest and attaching less importance to topics such as climate change	• More knowledge about EU integration process • More knowledge about climate change • Greater interest and attaching greater importance to topics such as EU integration of the Republic of Macedonia • Greater interest and attaching greater importance to topics such as climate change
Extremely low performance in recognising disinformation cues in online news	Extremely low performance in recognising disinformation cues in online news

6.11 Qualitative analysis of the focus group with socially vulnerable people

The focus group was scheduled and held in the premises of the Educational Day-care Centre for Street Children in Shuto Orizari.

20 participants were invited, but 16 came, all women, recipients of social benefits.

The room in which the focus group took place was an adapted classroom, without enough space, considering that the women came with children who either kept them close to them (the smaller ones), or the children were gathered in the other adjacent room but constantly walked and entered the room where the focus group took place.

In that situation and atmosphere of noise and excitement, the focus group was with obstacles, although the organiser tried to silence the participants in the focus group, to direct them to the conversation, and to organise the children with some activity so that they would not run to their mothers. At the same time, they gave them food and packages, so there was no shortage of food and eating while the conversation was going on.

However, the participants (at least a good part of them) showed interest in the conversation and tried to get involved even though they said at the beginning that they did not know much about the media.

Demographic data

Age: The youngest participant was 22, and the oldest 53, mean age of the group M=34.4

Sex/gender: All participants were female. We were told that it was a day-care centre where only women with children came.

Ethnicity: All Roma women

I**nvolvement in media or digital literacy programs:** None of the participants were involved in a media or digital literacy programme.

What is the highest level of education you have? Out of a total of 16 participants, 12 had no education (not even primary) and signed with a fingerprint, 3 had primary education and one participant had completed secondary education.

Residence: All the participants said that they live in Shuto Orizari.

Employment: All participants were recipients of social benefits

Following news online and how often: Only one participant said that she reads some news on Facebook in the evening, but not all the time. Three female participants said that they listen to news on television, they only know and watch Sitel TV. They are only interested in welfare related news. The rest, when asked if they follow the media, if they get information about something and if they want to be informed at all, answered that if they are interested in something, they will go out on the street and there they will find out everything: when social benefits are distributed, if they be increased, if they will be delayed etc.

All the questions in the questionnaire were extremely simplified, adapted for oral setting and for people without education

Need for cognition

The female participants (all unemployed) were asked which activities they liked better: whether to engage in work that did not require a lot of thinking or something that would engage them mentally.
Only two participants declared that they had nothing to do because they were uneducated. Most of them simultaneously said that their most important job is taking care of children. One of the interwees said they had no choice but to clean houses. They don't know anything else.

> *We can only clean, but not everyone can do that either. Now some of the younger ones want to study, but those like us, unfortunately, no one has an education.*

Media locus of control

The participants were asked if they themselves ask to be informed or if the information reaches them without their involvement; do they feel that they are being manipulated by the media; do they somehow check the news they hear or read.
Only one participant said that in the evening she looks for something to read on social networks.

> *At night, when I put the children to sleep, I look to see what happened, something interesting, not politics, something else. Those who are my friends on FB play something and I open it. I read various things.*

They do not understand the concept of manipulation by the media, they did not answer the question about manipulation. One participant only said that the media sometimes lie:

> *Sometimes they tell exactly what is going to happen with social benefits, sometimes they lie to us. But that's up to the politicians, not up to the television.*

When asked if they believed, they also didn't know what to answer, except that they asked each other if any information was correct.

> *When I want to know something, I ask during the day on the street where we gather, someone knows something they heard, so they will tell us.*

Knowledge structures of news media

Frequency and manner of following news
Few of them follow the news, only when something happens with social benefits or pensions. Those few, only watch television.

Knowing how many and what kind of media there are in North Macedonia.
They know that there are several televisions, the 4 who followed said that they watch Sitel, and one of them said that she knows Kanal 5.

Following news during elections
Three female participants answered that when there are local, parliamentary, and presidential elections, they watch a little bit of news and know that the news talks about who is leading and who will win.

> *Politicians appear on television to make promises and then nothing, that's why I don't want to listen to them on television during elections.*

The largest number of questions in this block of questions regarding knowledge about the functioning of the media and its influence was simply useless to ask because 80% of the participants do not follow the media at all.

Motivation for news consumption

When asked "What do you think is the benefit of watching the news?", most of the participants do not see any benefit.

> *Everything I'm interested in, I'll ask here (at the Centre), my neighbour will tell me…, I don't need to watch TV*

> *I don't have time to watch the news, I have 4 children, I don't manage to take care of them…*

> *What do I need the news for? Would they tell me something good?*

Knowledge of events related to EU integrations

In this block of questions, questions were asked whether they know what climate change is in general; how important are climate changes for RNM; is something related to climate change being done in RNM?
The largest number of female participants (8 out of 12) know about the European Union; almost everyone knows that North Macedonia wants to join the EU; none knew who the negotiator was.

Knowledge of events and information related to climate change

In this block of questions, questions were asked whether they know what climate change is in general; how important are climate changes for RNM; is something related to climate change being done in RNM?
Four women in the group said they had heard of climate change, only one explained specifically what she thought climate change was:

> *It's that the air is polluted, that we're breathing poison.*

The same interlocutor, when asked about the causes of climate change, said that people and factories are responsible for it.

> *The air itself is not polluted, we pollute it, the factories pollute it, but also the fact that we are poor.*

Interest and importance of the topics of European integration and climate change

Questions were asked in this block how important topics such as European integration and climate change are to them and questions are they interested in topics related to such as the European integration of RNM and climate change in the world and North Macedonia.

> *It is not important for me; it is important for the young people to leave Macedonia to one of the countries in Europe. That's why they need to learn something about what it's like there.*

> *When someone goes there, they tell their family how it is in Europe, they know best there, they don't need to listen to the news.*

> *We should all be interested in being clean around us and not breathing poison, but here you see what garbage we live in, garbage everywhere, no one cleans it.*

> *No one is interested in how we can buy firewood, and everyone tells us that we should not burn garbage in the ovens. I don't want to burn garbage either, but I have no choice.*

> *It is important to breathe clean air, but no one is doing anything about it, neither the state nor the people.*

Motivation to recognise and counter disinformation

When asked if there was training on how to successfully recognise and counter disinformation, they would be willing to follow it, several nodded, but did not give the impression that they knew what it was actually about. The same can be said about the reaction to the question of how important it is for them to be able to recognise and counter disinformation. One participant just said:

> *We need to be informed about what is happening in this country, this is where we live.*

Perceived barriers to recognising and countering disinformation

In this last part of the questions, they were asked if they think that if they are uninformed, do not know and have no experience about a topic (they were given the example of social benefits which is most important to them) they can be easily deceived, as well as if they are disinterested they can easily be deceived by the media.
Two participants joined the discussion. They don't think they can be lied to by the media because they checked the information among themselves, so they didn't follow a lot of media to be lied to.

> *Anything and everything is talked on television, but who listens to it? Nobody cares about anything.*

Conclusions from the focus group discussion

Interviews with people from the socially vulnerable category from the focus group confirmed and at the same time provided additional insights into the assumption that media literacy is not a priority for them.

It can be concluded that 80% of the interviewed recipients of social benefits do not follow the news at all, and those who follow, follow the news related to social benefits (when it will be distributed, if there is a raise, etc.), since the majority of them are illiterate, without any education, they perceive themselves as insufficiently capable of working except looking after children, and they satisfy their need for cognition through social contacts with those they trust. They do not understand the concept of manipulation by the media, but few of them believe that the truth is not being told in the news.

Media knowledge is very modest, but they still know that there are several television channels and the most watched is TV Sitel. Regarding the knowledge of current topics of social importance such as the EU integration process and climate change, the largest number of participants (8 out of 12) know about the European Union; almost everyone knows that RNM wants to join the EU; none knew who the negotiator was. Similarly, they have very modest knowledge about the topic of climate change.

There is an awareness of disinformation and a vague desire to learn how to spot it (would they participate in such training, a few of them nodded modestly). It can be said that this group of socially vulnerable persons are at a high risk of being influenced by disinformation due to their illiteracy, unemployment and hence the inability to engage in social events in which they would engage their cognitive capacities and with a very low motivation to learn things that are not directly related to their priority needs. The challenge for this socially vulnerable group, which due to this condition is susceptible to disinformation, is to find a way to raise the level of their motivation to learn ways to safely reach accurate and verified information on issues of social importance. Summarising the data obtained from the interviews in the focus group of persons receiving social benefits, one group could be profiled.

Profile of persons at social risk	
• Women, Roma • From 22 to 53 years, average age 34.4 years • 75% have no primary education • Unemployed • A settlement with a dominant Roma population, Shuto Orizari • All welfare recipients	• No media/digital literacy education • No news media literacy • No news is being followed • A small percentage is primarily informed by television • Only one participant reads news online • They check information that is important to them through personal social contacts ("on the street")
• Extrinsic motivation for following news • Instrumental need to follow media: they only follow what is most important to them - news related to social benefits	• Ignorance of socially important topics • Insufficient interest in following socially important topics • Ignorance of the concept of disinformation

6.12 Summary of results and conclusions

SAMPLE DESCRIPTION/independent variables

| STUDENTS | Females predominate 82.9%.
Macedonians are 61.1 %, and Albanians 35.2 %.
67 % of the students are from urban areas, the rest from rural areas |

General data for media/digital literacy

Almost one third of the surveyed students (30.6 %) answered affirmatively - that they were involved in some programme on media or digital literacy, and 69.4 % of the students said they were not involved.

Online news consumption

When asked if and how often students follow news on the Internet (on a computer, phone, tablet...) the majority answered in the affirmative. Only 3 % of the students involved in the survey do not follow news online at all.

Using a computer

More than three quarters of the surveyed students, or 83.4 %, use a computer, 41.7 % once to twice a week, 17.4 % - 3 to 6 times, and 24.3% every day. Every sixth student does not use a computer at all.

| PENSIONERS | 64.3% are male.
71.4% are Macedonians, 23.5% are Albanians.
56% are from Skopje, the rest are outside Skopje. |

General data for media/digital literacy

The group of respondent pensioners for the largest part, or 79.6% of them, do not have the experience of participation in a programme on media/digital literacy.

Online news consumption

The habit of following news through digital means is present among almost 70 % of respondents, with 48.9 % following frequently, while 27.6 % rarely.

Using a computer

35.7% of respondents hardly ever use a computer, and almost the same number (34.7 %) use it often or every day.

News media literacy

Scale 1
Need for cognition – automatic versus conscious processing of information

For students, the mean value of the total score on the Need for Cognition Scale is 17.28 points. On each statement, and subsequently on the total score of the Need for Cognition Scale, the respondents are somewhat above the average. The majority of students choose the middle alternative.

Among pensioners, the mean value of the total score on the scale for the eed for cognition is 15.31 points. This value indicates that the need for cognition with pensioners is average.

The mean value of the total score on the need for cognition scale for students is higher than that of pensioners with statistical significance.

Scale 2
Media locus of control

With students as well as for the first scale, the data show that on each statement, and subsequently on the total score of the Media Locus of Control Scale, the respondents are above the average, except for the third statement, which read: "If I am wrongly informed by the media, I am responsible".

With the pensioners the mean value of the total score on the media locus of control scale is 21.52. This value indicates that the locus of control is above average.

The mean value of the total score on this scale for students is lower than that of pensioners with statistical significance.

Scale 3
Media knowledge

The sample of students on this scale are below the theoretical average. The sample of students on this scale is below the theoretical average. The most numerous are those respondents who have a total score of 5 or 6, out of 13 possible correct answers on the scale 3. 80% are a total of students who have 3 to 7 correct answers. Only one respondent knew 12 out of 13 correct answers. The average correct answers of the entire sample of students in this research is 5.08 correct answers.

The average correct answers of the entire sample of pensioners in this research is 4.29 correct answers on scale 3, which certainly means that they are below the theoretical average (6.5). Most of the pensioners had a total score, that is, they answered only four or five questions correctly - 20% with 4 correct answers, ie 18% with 5 correct answers.

The mean value of the total score on this scale for students is higher than that of pensioners with statistical significance.

News Media Literacy Index

The news media literacy index is slightly above average for both students and pensioners. Students and pensioners did not differ on the news media literacy index.

Activation component of media literacy

The students participants in the research have an average total score of 5.30, slightly below average (6) on the first scale (external motivation scale), and just as slightly above average = 6.30 on the second scale (internal motivation scale).

Among pensioners, the overall average score of internal motivation for news is higher, than for the external, i.e. for internal motivation it is almost 8 and for external it is almost 7.
The mean values of the total score of both extrinsic and intrinsic motivation for students are lower than those of pensioners with statistical significance.

Students: on each statement, and subsequently on the total score of the Disinformation Learning Scale, respondents are "above" the average. The figures show that the largest percentage of students choose the alternative: "I am very motivated and it is very important for me to know" to each of the 3 statements. Speaking generally for the entire sample of students, there is above average motivation to learn how to recognise disinformation.
Similar to the students, the group of pensioners from the sample is motivated to upgrade the skills to recognise and counter disinformation.
There is no statistically significant difference between students and pensioners regarding the motivation to recognise disinformation.

Awareness of barriers in the process of recognising disinformation

The mean values of each recognised barrier indicate that a larger number of students, as well as pensioners, agree to a greater degree that emotions caused by a news item, as well as insufficient experience and insufficient interest in the topic in the news, and especially insufficient knowledge can be a barrier to distinguish true from fake news.
There is no statistically significant difference between students and pensioners in terms of knowledge of barriers to recognising disinformation.

Recognising disinformation cues

No student respondent recognised all the cues of disnformation in one or most of the online news stories. In regard to all 3 online news, the largest number of students failed to recognise any correct sign of disinformation.
Only at the last quiz question one pensioner found all 9 cues of disinformation. Most of the pensioners did not recognise any or only one sign of disinformation.

Being informed, specific knowledge about societally important topics

Knowledge of the European integration processes

Students: There are no respondents who answered all the questions correctly; Half of the surveyed students do not have a single correct answer; With one correct answer are 37% of the students.

Pensioners: Although somewhat better than the group of students, pensioners have very poor knowledge of the European integration process too. Over 64% answered all five questions incorrectly.

Three of the pensioners knew the answers to all the questions, but 65% of the pensioners did not know any correct answer or only to one question.

The mean value of the total score for students is lower than that of pensioners with statistical significance.

Knowledge of topics related to climate change

Students: The percentage of respondents who answered all questions correctly is 1.6%. Almost 8% are students who do not have a single correct answer; The most numerous are those who have 3 correct answers, and their percentage is 37.9%. Three quarters are respondents who have 2 to 4 correct answers.

Pensioners: The mean total score at the level of all questions is 2.89, which means that on average they answered almost three questions. The most correct answers were given to the fifth question - 68%, and 61% of the pensioners answered the second and sixth questions correctly. No respondent answered six questions correctly, and only 10% of respondents answered five correctly.

There is no statistically significant difference between students and pensioners on the Climate Change Knowledge Scale.

Interest in topics such as European integration and climate change and the importance of these topics for the individual

Students' interest and importance in topics related to climate change is greater than the interest and importance they attach to topics related to the European integration.

There is a slight difference in the **pensioners**' interest in the two topics in favour of the climate change topic, as well as in the importance these topics have for them.

The mean values of the total score and the interest in the two topics and the importance for the respondents of the two topics for the students are lower than those of the pensioners with statistical significance.

DEFINING A MEDIA LITERACY CONSTRUCT

STUDENTS
Construct of media literacy

Among students, news media literacy is related to intrinsic motivation through locus of control: those who feel they have control over the information they receive from the media will also have intrinsic motivation to follow the news.

News media literacy is related to learning motivation, disinformation education through the need for cognition and media literacy. Individuals who are intellectually curious and have a greater need for cognition and involvement in thought processes will be motivated to learn and invest in disinformation education and will have greater media knowledge.

News media literacy is related to awareness of barriers to disinformation recognition through the need for cognition and media knowledge. Individuals who are intellectually curious will have greater knowledge of the media and will be more aware of barriers in the disinformation process.

Intrinsic motivation by its nature is more related to the motivation to learn and the awareness of the existence of barriers. Highly intrinsically motivated news followers will also be more aware of any obstacles that may arise in the process of recognising disinformation.

PENSIONERS
Construct of media literacy

The relationship between the components of media literacy among pensioners is in many ways similar to that among students, which once again speaks of the real existence of such a complex construct of interdependent variables, which could be called "media literacy".

The addition is the inclusion of extrinsic motivation (from external stimuli) for following news in this construct.

News media literacy through the locus of control is related to both intrinsic and extrinsic motivation.

Older people and senior citizens who feel that they control information from the media will be both intrinsically and extrinsically more motivated to follow the news.

Locus of control, in this construct of media literacy acquires central position with the pensioners. The locus of control is unifying component that unites all other components. With the pensioners, as if everything is in the hands of the individual about whether, how much and how they will be informed. When one has this attitude, then they will have motivation to learn about disinformation, will be more aware of the barriers, will be extrinsically and intrinsically motivated to follow the news. News media literacy is related to the awareness of barriers in recognising disinformation through media knowledge: individuals who have larger media knowledge will be more aware about the existence of barriers in the process of recognising disinformation.

TESTING THE IMPACT MODEL OF MEDIA LITERACY

Creating 2 groups of respondents according to their media literacy

STUDENTS

Among students, the first group included respondents who are more news media literate, those who are intrinsically motivated to follow news, highly motivated to learn to recognise disinformation, as well as those who are aware of the existence of barriers in the process of recognising disinformation. The second group included respondents who are less news media literate, those who have less intrinsic motivation to follow news, and who are less motivated to learn to recognise disinformation, as well as those who are less aware of the existence of barriers in the process of disinformation recognition.

PROOF OF MODEL

The students showed a significant difference between these two groups in the ability to recognise disinformation, as well as in the level of knowledge, interest in important societal and political topics. The group with higher media literacy will, on average, actually recognise more cues of disinformation in online news compared to the group with lower media literacy. The group with higher media literacy will show greater knowledge and interest in societally important topics. This proved the assumed model of disinformation recognition.

PENSIONERS

The same classification was made for pensioners, but extrinsic motivation was also entered for them, considering that it also correlated with one of the components of news media literacy. The first group included respondents who are more news media literate, who are intrinsically but also extrinsically motivated to follow news, highly motivated to learn to recognise disinformation, as well as those who are aware of the existence of barriers in the process of recognising disinformation. The second group included respondents who are less news media literate, those who have less intrinsic but also extrinsic motivation to follow news, and who are less motivated to learn to recognise disinformation, as well as those who are less aware of the existence of barriers in the process of recognising disinformation.

PROOF OF MODEL

Among pensioners, no significant difference was shown between these two groups in the ability to recognise disinformation, but a difference was shown in the levels of knowledge and interest in important societal and political topics. Pensioners with both higher and lower media literacy will fail equally to recognise the cues of disinformation. However, those with higher media literacy will also demonstrate greater knowledge and interest in societally important topics. This partially proved the assumed model of disinformation recognition among pensioners.

7.

ANSWERING THE RESEARCH QUESTIONS

And the Devil's Advocate again...

DA: Now finally, when you have completed the entire research process, what can you say: how successfully can news media literacy be measured?
R: Testing the metric characteristics of the three scales that are the main components of news media literacy in the theoretical model (need for cognition, locus of control, and media knowledge) showed that the three scales are internally consistent, determined by one factor, and discriminative. In addition, the correlation of the same with the rest of the components showed that they are also valid.

DA: What would that mean?
R: It means that the three scales adequately "measure" the news media literacy of our population.

DA: Is news media literacy related to motivation for news consumption?
R: Yes, you just have to be more precise here. Among students, news media literacy is only related to intrinsic motivation for news consumption. At the same time, we are not talking about the news media literacy index, but only about one component, which is the locus of control. Among pensioners, news media literacy (again only locus of control as one of its components) is related to both extrinsic and intrinsic motivation.

DA: How so? Why is that? Didn't the referent research show that news media literacy was only related to intrinsic motivation?
R: The relevant research you mention is conducted among young people. With the elderly, extrinsic motivation is probably included. They follow news when they see the benefit of it, they follow news because they think they should! This is not the mechanism with the young people!

DA: And this with this locus of control is not clear to me. So, the motivation, either extrinsic or intrinsic, to follow the news is not related to the news media literacy index, but only to one of its components - the locus?!
R: Yes, it is actually very expected. The internal locus of control is the basis for activism, psychologists know this very well, and scientific literature has proven it! People who believe that the media controls them are expected to take a more passive role. While those who believe they have power over information and the media, expectedly will be more active and motivated to follow news.

DA: Is news media literacy related to motivation to learn about disinformation?
R: Yes, both among students and pensioners, high correlation, strong connection!

DA: What would that mean?
R: News media literacy also means motivation to learn, short and simple, no great science here!

DA: What can we conclude from these two connections (both with the motivation to follow and with the motivation to learn)?
R: That news media literacy is always associated with an activation component. A media literate person is news media literate and wants to know and learn and educate themselves about disinformation. A locus of control is a particularly important component for this activation component. It is actually the basis for motivation. It is not for nothing that the definition of media literacy includes a part that highlights this active component, this urge to take actions in relation to it, not for nothing!

DA: Is news media literacy related to the awareness of barriers in the process of recognising disinformation?
R: Short and clear yes! The more news media literate someone is, the more aware they are of the barriers in the process of recognising disinformation.

DA: Can we now talk about the existence of a construct for media literacy consisting of four components?
R:Yes, of course yes. That is why the cluster analysis was done. Based on these four components (news media literacy, motivation for news consumption, motivation to learn about disinformation, awareness of barriers) the respondents were divided into two groups and the differences between them are sought. See the profiles. They really differ in all parameters. So there really is that construct of media literacy, made up of those four interdependent components. And that construct is crucial in the process of recognising and countering disinformation!

DA: Does media literacy affect the ability to recognise disinformation in online news? Is the disinformation recognition model you proposed successful in that sense? Does it have application and use value? We do not need science for the sake of science!
R: For students, yes, for pensioners, no.

DA: What would that mean specifically?
R: The model was tested precisely because of its utility value. The model is successful, it has been shown that among students, the group with higher media literacy on average will indeed recognise more cues of disinformation in online news compared to the group with lower media literacy, as it will show greater knowledge as well as greater interest in societally important topics. Pensioners with higher and lower media literacy will equally fail to recognise cues of disinformation. However, those with higher media literacy will also demonstrate greater knowledge and interest in societally important topics.

DA: And what didn't work for the pensioners???
R: Among pensioners, this model functioned partially. Media literacy with them also means news media literacy, strong activation mechanisms and awareness of barriers to recognising disinformation. There the problem is different. There are no pensioners who know how to recognise disinformation. All are equally unsuccessful at recognising disinformation. Their digital illiteracy, their ignorance of how it works and what are the opportunities offered by cyber space makes them vulnerable to disinformation in that space. They follow news online, some of them even use computers every day, but they do not know how to recognise cues of disinformation.

DA: Does media literacy also mean good information about current, social and political topics?
R:Yes! Both students and pensioners have a big YES!
Both among younger and older people, media literacy means greater awareness of important topics for our country, but also for the world; such topics are the European integration process and cli-

mate change. Hence, we consider that media literacy also means the responsibility to be accurately informed, and to make decisions based on good and accurate information. Only then, people's behaviours, in real and cyber space, will mean active and participatory, but also critical citizenship.

DA: What are the demographic factors related to news literacy?
R: Gender, place of residence (urban/rural) among students. Only the place of residence for pensioners. And before you ask me anything further about it I would say that inference about demographic factors based on a convenience sample is very limited. Here, other surveys of a representative sample according to the main demographic data will be needed. Some guidelines have been shown to be important and this should only be a challenge for further research. However, we would not draw "big" conclusions from these data.

DA: Is media literacy related to digital literacy?
R: Digital literacy was not examined in this survey, only questions were asked about some aspects of computer use habits, online news consumption, and participation in media and/or digital literacy training. Only among students, engaging in media/digital literacy training means greater news media literacy. This is not the case with pensioners. There is no connection of news media literacy with frequent use of a computer, nor with more frequent following of news online. No matter how much online news is followed, no matter how much computers are used, this alone does not contribute to greater news media literacy. This data highlights the importance of media literacy training and more specifically news media literacy. But they should also be well-designed, adequate for the target group of people. Obviously, the same media or digital literacy training will not be necessary or successful for youth and older adults. Not to mention the women, Roma recipients of social benefits! News media literacy training should be highly tailored to the potential, needs and abilities of the individuals for whom it is intended.

DA: And now? How would one simply answer the main research questions? What are the individual factors, motivation and barriers to recognising cues of disinformation? Just a simple answer please! I have no use for complex answers. It's a sign that you don't really know things!
R: Factors (individual, of each individual) for successful recognition of disinformation are: news media literacy i.e.: the need for cognition, media locus of control and media knowledge.
The motives are: motivation to follow news (can be both extrinsic and intrinsic) and motivation to learn (education) about disinformation
The barriers are: unawareness of the existence of obstacles in the recognition process. A barrier is not knowing that emotions can be an obstacle, not knowing that insufficient knowledge, insufficient interest for and attaching importance to the topics reported in the media can be an obstacle to recognise false news.

DA: Aha! Now I understand!
In order to successfully recognise the cues of disinformation one must be news media literate, which would mean being intellectually curious, willing to think; to have the attitude and feeling that they control the information from the media and that it depends on them whether and how well they will be informed; and to know how the media operate. In addition, they should have a developed activation component, which would mean being motivated to follow news (both extrinsically and intrinsically, but intrinsically is desirable), they should want to learn what disinformation is and what is its influence. Finally, the one who successfully recognises disinformation should be aware of the existence of all barriers in the process of recognising them, because the moment one becomes aware of the barriers, they, the barriers, cease to be barriers! Awareness about problems is the first step to solving them.

8.

LIMITATIONS OF THE RESEARCH

Sampling limitation. The sample is convenient, so the disproportion in the distribution according to gender and place of residence (urban-rural environment) (although in the statistical processing these disparities are overcome by the use of non-parametric statistics), is obvious and does not give room for generalizations to the general population or a segmented population.

Limitation of administering the questionnaire. The original method of data collection (online questionnaire) was not comprehensive in terms of all respondents, due to their characteristics or life circumstances or conditions, especially for some categories of respondents (i.e. pensioners over 70, socially vulnerable categories) who did not have the technical competences and means to answer the online version. Thereto, a large part of the research was conducted by answering a paper version of the questionnaire.

The questionnaire was taken by researchers from another environment and adapted to our conditions. The piloting phase, i.e. testing of all the metric characteristics of the adapted questionnaire for our population, was skipped. Although in this research the metric characteristics of the tests were solid, however, when re-applying the instrument, especially if it is done on a representative sample, it is highly recommendable to do testing and adjustment.

Taking the individual variables as the subject of research, and not the variables resulting from the content of the news, could be considered as a limitation of the research. Through research of news reated variables, information would be obtained about potential factors that could affect the recognition of disinformation. But on the other hand, it allowed to go in-depth of the obtained findings and do a more detailed analysis of the same - on the factors arising from the individual, which was the main interest.

9. RECOMMENDATIONS

General recommendations

When planning any content one should take into account:

The specifics of the group to which the activities are intended - age, level of education, where they come from, but also the psychological factors which participate in the media literacy (locus of control, need for cognition, motivation)

Apart from the content of the activities, the approach to work is of key importance, which should be such that it engages the target group, includes experiential learning, encourages the development of the personal responsibility, as well as awareness of one's own role in controlling the information received from the media. The approach to work is much more important than the contents of the activities themselves.

Since the knowledge about the media in both the group of the pensioners and the group of the students was not sufficiently developed, both groups are amenable to a variety of educational activities. Thus, both groups are motivated to be proficient in recognising disinformation, but the motivation is of a different nature: students want to have skills, to be able to apply them in practice, while the pensioners want to be well prepared theoretically. Translated, for example, into a concept of educational activities in the form of training, learning methods in which they will be directly engaged would be much more useful for students - work on specific project-tasks, i.e. learning by doing, experiential workshops, through which they will be able to share their own experiences and thus systematize and combine them with the theoretical knowledge. For the pensioners whose main motivation is the so-called extrinsic, i.e., they follow the news first of all because they have to follow it, because "it cannot be otherwise" and in that manner they have the feeling of control over what they hear in the news, and they are also highly motivated to be trained in how to recognise cues of disinformation, the trainings should include explanations of how it will benefit them in their everyday life. Trainings for the pensioners with the concept more like lectures and discussions through which they will satisfy the need for a personal locus would have a greater effect. Also, short educational materials would also have an effect on pensioners. Apart from the findings, however using the knowledge gained indirectly through contacts with the pensioners during the research, the great need for social interaction between them was also noted, so it is good to have activities as part of the training that would encourage social interaction between them in a less formal manner and it would have a positive feedback effect on the learning process (it is no coincidence that they are members of pensioners' associations).

For other types of activities, for example, in order to raise awareness for recognising disinformation, it is also recommended that all promotional materials (electronic, video, audio, etc.) should be different for the two groups.

Awareness of one's own emotions when receiving information is an important factor in achieving greater awareness and in recognising disinformation. Therefore, when organising educational activities for media literacy which includes recognition of disinformation, it is desirable to include parts that will refer to the so-called "emotionally coloured" words or words that are emotionally charged, such as adjectives that describe character or have a root in the nouns that denote emo-

tions (e.g. angry, scared, selfish, etc.), verbs that express feelings (e.g. I'm afraid, I am glad, they argue, etc.), social expressions such as "the good old days" or "as is commonly known", prepositions such as "never", "always" etc., and their impact on the perception and the understanding of the information or the news. For example, exercises could be included in which texts will be analysed containing emotionally charged words in parallel with texts without such words and to compare the perceptions of those participants who analysed texts with emotionally charged words and participants who analysed texts about the same news without using of such words. In addition, experiential exercises are a good way through which the participants (both students/ young people and pensioners) will become more aware of their own emotions and the connection of emotions with belief or disbelief in the news.

In the media literacy training which includes disinformation recognition, it is desirable to include spelling exercises/activities, correcting spelling mistakes in the texts. The research shows that one of the cues for recognising false news is making frequent spelling mistakes, using capital letters when writing words very often, excessive use of punctuation marks such as exclamation marks, etc. Even reputable and credible media outlets make mistakes. However, if an article is full of grammatical or spelling mistakes, it is a sign that it is fake news. If a media outlet fails to meet basic language standards, its ability to report objectively and fact-check is called into question.

It would be desirable to include contents that strengthen the communication skills of the participants in the educational activities. By communication skills we mean several skills, including perception, the influence of the previous experience on perception, verbal and non-verbal communication in both spoken and written communication, careful listening/reading, the necessity of listening or finding a sufficient number of facts and data before forming an opinion or position, decision, consensus etc. Better communication skills are the basis for better understanding of information, news, and people.

Recommendations related to the findings

News Media Literacy Testing – It is recommended that before starting any educational program, the participants should be tested using the instrument used to measure news media literacy in this study, in order to get an accurate picture of the level of news media literacy and to target the educational content and objectives accordingly. That would mean whether more attention should be paid to the need for cognition, or developing the locus of control, or whether it is necessary to focus more on the knowledge about the media industry.

Developing the need for cognition. Recommendations for the type of activities, tasks and contents: the activities or tasks should include elements which encourage intellectual curiosity, research, developing abstract thinking, logical thinking, solving dilemmas, developing complex questions, debating, etc. Examples of such activities are: riddles or puzzles, solving crosswords, Sudoku, writing stories about a specific issue, solving problem situations, exercises with syllogisms [31], "continue the sequence" type of tasks, etc. This type of tasks can be used as warm-up exercises, for energising, for pausing, not only as main activities.

Developing the internal media locus of control. Recommendations for the type of activities, tasks and content whose purpose is to develop the internal locus of control - a tendency to think that the person is the one on whom it depends whether and how much they will be informed. In this context, actually two important things should be learned in order to develop internal control: personal responsibility – believing that everything that happens to us is the result of personal choices and decisions, and a desire for constant learning (open mind versus closed mind). The activities should develop a feeling that we ourselves, not others, are responsible for the choices; focusing on the solution, not the problem; setting achievable goals; embracing possibilities that may seem daunting; to understand the mistakes as learning opportunities; moving on after negative experiences instead of "getting stuck" on them, etc.

Education about the media, their structure, functioning and influence on the people. The recommendations are directed towards: presenting the things in an interesting manner which are important for understanding how the media work. Various activities can be carried out here, such as making case studies, learning by playing roles (journalist, editor, media owner, etc.), and other creative and interactive manners in order to learn how the media work.

Developing intrinsic motivation- according to scientific knowledge, in order to develop this motivation, the learning environment should be such that it promotes:

▷ 1. Autonomy: people need to believe that they have a choice, to have a stake in what is being carried out. Personal success is the essence of goal setting – goals should be set in such a manner that people recognise that those goals lead them to their personal success;

▷ 2. Connectedness: people have a need to build deep connections with others;

▷ 3. Feeling of competence - developing appropriate skills and the possibility of their application; in order to achieve this, it is necessary to give them all available learning resources, instead of setting results-oriented goals, learning-oriented goals should be set (the goal should be learning, not a grade), instead of asking questions of the type "what did you achieve today?" should be asked "how have you grown today and what do you need for your growth tomorrow?"

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31 Types of logical reasoning, for example if A=B, and B=C, then A=?

Developing motivation to learn about disinformation – this recommendation is closely related to developing awareness of the barriers to recognising disinformation; here, also learning through exploration and interaction is recommended; presenting the power of disinformation by exposing its power and impact on people's lives, through examples from reality, sharing personal experiences, etc.

Developing awareness of the existence of barriers in the process of recognising disinformation - it is crucial to develop a critical opinion, but also to develop emotional literacy and competence.

Developing knowledge and awareness of the cognitive, social and emotional processes which make disinformation attractive and people vulnerable to forming wrong beliefs and drawing wrong conclusions.

▷ In terms of cognitive processes, they should understand the difference between intuitive and analytical thinking. In assessing the truth, people are often biased and rely more on the intuition ("lazy" thinking) than on pondering upon carefully. Hence, in order to encourage the cognitive processes, the activities and the contents that would be implemented should be designed in a manner that requires people to think before making any judgment, opinion or decision. Another important thing about the cognitive processes is the knowledge and the awareness of the effect of illusory truth, i.e., evaluating frequently repeated statements as true compared to the new statements. Cues of illusory truth effect are: the familiarity of the news (a sign that the message/news has been seen before); the ease of understanding (people tend to prefer things that are easy to understand); and the coherence of the references to the statements in our memory (repeated statements are more coherently linked in memory).

▷ In terms of social processes, any activity should be aimed at developing awareness of the following: in general, the messages are more persuasive when they come from sources which are considered credible, people tend to trust members of "their" group more than "the external ones' regardless of competence; they also tend to trust experts and political elites more. Very often the source of the information is overlooked, or ignored or forgotten to pay attention to. In reference to the online news, for example, it has been found that a banner with the publisher's logo (reputable media or dubious website) neither reduces the belief in disinformation nor increases it in the correct news, i.e., it plays no role because it is not used as a sign for recognition. The individuals when reading online information tend to overlook the quality of the medium and judge veracity primarily on the credibility of the content.

▷ The emotional content of the information also influences the formation of false beliefs. For example, messages that incite fear of injury can be successful in changing attitudes and behaviour if the message recipients believe they can avoid the injury. People understand the connection between the emotions and the persuasiveness, so often when they want to convince someone of something they naturally start using emotional language. Emotions can be persuasive because they distract the readers from those cues/cues that point to disinformation, such as the credibility of the source. In addition, the emotional state of the recipient of the message can also affect the assessment of whether the information is correct or not. People tend to rely on how they feel about information when judging its accuracy, and this is what makes them susceptible to disinformation. When people are encouraged to rely on their emotions through the use of emotional language (using emotionally charged words more frequently) it increases their vulnerability to disinformation. Arousing different emotional states – good mood, sadness, anger, social exclusion – are cues of disinformation.

Conducting additional research – this recommendation is based on the findings regarding the alarmingly low level of knowledge of the respondents, especially the students, on issues of societal importance such as the European integration and the climate issues. Namely, the "short path" to the truth can result from people's personal attitude and view of the world or the political determination. The proposed additional research can be carried out again on both age groups by examining the attitudes, value system and beliefs of the respondents and their connection with knowledge and interest in different topics of social importance.

Recommendations for activities with socially vulnerable groups

Regarding the Roma group, social vulnerable group, despite the low level of education, the impression is that they have sufficient awareness, a certain need for cognition, as well as a "common sense" reasoning, so they can be a suitable group for training if the contents of the training to raise their general media literacy, would be adapted to the interests of this group. It can be started with a small pilot project, in cooperation with the Educational Day-care Centre for Street Children, which has many years of experience in work and education with the parents of the children protégéss and can serve as an example to raise awareness of disinformation of other socially vulnerable categories. It would be desirable for the activities with this target group, at least initially, to be carried out in the environment in which they live due to the feeling of security among this group.

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Annex

Questionnaire to analyse the citizens' opinion on news consumption and countering disinformation

Demographic data

University/Faculty (question for the students)
Age (in years)
Sex/gender
Ethnicity
Highest completed level of education
Urban/Rural area

Additional independent variables

Have you ever been involved in media or digital literacy programmes?
Do you read/follow news on the Internet (on a computer, phone, tablet…)
How often do you use a computer?

Scale 1 Need for cognition

(5-point Likert scale where 1 is "Strongly Disagree" and 5 is "Strongly Agree")
I don't want to have much to think about.
I try to avoid situations that require deep thinking.
I would rather do something that requires thinking than something that does not require much consideration.
I prefer complex problems to simple problems.
Thinking hard and for a long time about something does not give me pleasure.

Scale 2 Media locus of control

(Scale with suggested answers and one correct answer)
If I am disinformed by the media, it is up to me how quickly I get the correct information.
I am in control of the information I receive from the media.
If I am disinformed by the media, I am responsible.
My knowledge of the world is mostly influenced by what I do myself.
By checking different news sources, I can avoid being disinformed.
If I take appropriate actions, I will stay informed.

Scale 3 Media Knowledge

(Scale with suggested answers and one correct answer)
Who owns most of the media outlets in Macedonia?
Owned by private companies/Owned by the state (government)/Non-profit companies/I don't know
Do journalists/reporters in Macedonia need a license for employment and from whom?

The Agency for Audio Visual Services/The Chamber of Commerce of Macedonia/The Association of Journalists/The journalists do not need to have a license/I don't know

Which of the media does not depend primarily on advertisements for financial support?

MTV/Sitel/Kanal 5/Alfa/24 Vesti/Telma/Alsat/Klan/Shenija/Nova Makedonija/Sloboden Pechat/Lice v lice/I don't know

What is the main difference between websites such as Time.mk and websites such as Kanal 5?

Time.mk does not have journalists who are reporting, while Kanal 5 does/Time.mk reports on the world, and Kanal 5 on Macedonia/Time.mk has a larger number of editors than Kanal 5/I don't know

Who has the biggest influence on what news will be shown on television?

Individual journalists/The presenter, the person who reads the news/The cameraman/The editor-in-chief or the producer/I don't know

What is the coverage of all ethnic entities in the country in the news?

It accurately reflects the percentage of the ethnic communities in the total population of Macedonia/ insufficiently reflects the percentage of the ethnic communities in the total population of Macedonia/ It excessively reflects the percentage of the ethnic communities in the total population of Macedonia/ I don't know

What does news coverage of election campaigns usually focus on?

Which of the candidates or parties leads/in-depth analysis of the candidates' attitudes/the education of the candidates/I don't know

What do people usually mean when they criticize the media for being biased?

The journalist gives only the facts about the news/The journalist also includes their opinion about the news when reporting/The journalist's reporting is based too much on the opinion of the people with neutral views/The journalist does not clearly state the purpose of the news/I don't know

Whose job is it to write a press release?

Journalist from MTV/Spokesperson for Alkaloid/Lawyer for Pivara Skopje/Editor-in-Chief of the news on Telma/I don't know

What do people think about the effect of the media?

The media has a greater effect on themselves than on other people/The media has a greater effect on other people than on themselves/The media has the same effects on them as on other people/The media has no effect on anyone/I don't know

How do people who watch a lot of news tend to think about the world?

The world is more violent and dangerous than it really is/The world is less violent and dangerous than it really is/The world is exactly as dangerous and violent as it really is/I don't know

What do people think about a topic that is getting a lot of news coverage?

It is more likely to think that topic is important /It is less likely to think the news is important/Neither it is more nor it is less likely to think the news is important/I don't know

What is the possible effect of the advertisements in the media?

The news will make people buy things they don't need/News can emphasize things that aren't really important/All of the above/None of the above. No effects/ I don't know

Extrinsic Motivation Scale

(5-point Likert scale where 1 is "Strongly Disagree" and 5 is "Strongly Agree")
I don't see what the news does for me
I follow news because I am supposed to

Intrinsic Motivation Scale

(5-point Likert-type scale where 1 is "Strongly Disagree" and 5 is "Strongly Agree")
I follow news for my own good
I follow news because I like to

A scale of motivation to learn what is disinformation

(5-point Likert scale where 1 is "I am not motivated at all" and 5 is "I am extremely motivated")

Motivation to attend training/practice/workshop on successfully recognizing and dealing with disinformation

Motivation for self-upgrading to successfully recognise and counter disinformation

Importance of the individual skilfully recognising and countering disinformation?

(5-point Likert-type scale where 1 is "Not at all important to me" and 5 is "Very important to me")

Scale of Awareness/Criticism of Barriers in the Process of Recognizing and Dealing with Disinformation

(5-point Likert scale of agreement where 1 is "Strongly Disagree" and 5 is "Strongly Agree")

Emotions triggered by a news story can be a barrier to distinguish true from fake news

Insufficient knowledge in reference to the topic in the news can be a barrier to distinguish true from fake news

Insufficient experience related to the topic in the news can be a barrier to distinguish true from fake news

Insufficient interest in the topic of the news can be a barrier to distinguish true from fake news

SPECIFIC KNOWLEDGE AND INTEREST IN TOPICS OF SOCIETAL SIGNIFICANCE

Knowledge Scale on the European Integration of Macedonia

(Scale with suggested answers and one correct answer)

Who is Macedonia's main negotiator with the EU?

Dimitar Kovacevski/Bujar Osmani/Bojan Marichikj/I don't know

When did Macedonia acquire the status of a candidate country for membership?

December 2004/December 2005/December 2007/I don't know

When was the Intergovernmental Conference on Macedonia held?

July 19, 2020/July 19, 2022/July 19, 2021/I don't know

What is Frontex?

European Information Agency/European Border and Coast Guard Agency/European Mediation Agency in Negotiation/I don't know

What is the purpose of screening?

To assess the degree of preparedness of the candidate countries/To prepare the countries for the EU accession negotiations/Both/Don't know

Climate Change Knowledge Scale

(Scale with suggested answers and one correct answer)

What are the causes of climate change?

Natural influences/Human activities/Both/I don't know

What is climate change?

Climate change is a natural phenomenon that occurs at certain time periods/Climate change is a natural phenomenon that occurs at certain time periods as a result of natural activities, but also due to increased human activities/Climate change is a natural phenomenon that occurs at certain time periods and we cannot influence them/I don't know

How does the greenhouse effect work?

The greenhouse gases reflect energy from the sun, thus warming the Earth/The Greenhouse gases absorb the energy from the sun to slow or to prevent the heat from escaping into space/The Greenhouse gases directly heat the oceans and cause dramatic weather/The oceans absorb greenhouse gases, which causes Earth's temperatures to keep rising/I don't know

Does Macedonia have a climate action strategy?

Yes/No/I don't know

Which ministry is responsible for creating climate change policies?

The Ministry of Environment and Physical Planning/The Ministry of Economy/The Ministry of Transport and Communications/The Ministry of Agriculture, Forestry and Water Management/The Ministry of Health/The Ministry of Education/The Ministry of Finance/I don't know

Is climate change the same as air pollution?

They are completely different phenomena with air pollution/It is the same as air pollution/It is closely related to air pollution but they are different phenomena/I don't know

Interest in topics related to the European Integration of Macedonia

(5-point Likert-type scale where 1 is "I am not interested at all" and 5 is "I am very interested")

Interest in topics related to climate change in Macedonia

(5-point Likert-type scale where 1 is " I am not interested at all" and 5 is "I am very interested")

The importance of topics such as the European Integration of Macedonia?

(5-point Likert-type scale where 1 is "Not important to me at all" and 5 is "Very important to me")

The importance of topics such as climate change in Macedonia?

(5-point Likert-type scale where 1 is "Not at all important to me" and 5 is "Very important to me")

QUIZ QUESTIONS
Can you spot the cues of fake news?

1.Internet news on the topic of education

www.byte.size.co/bbc/ddaf3232fg5

Bytesize

Избери јазик

Почетна | Истражувања | Поддршка | Кариера и вработување

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Училишните тестови се НАЈЛЕСНИ од кога било, покажа научното истаржување

Дел од **Учење**

31 февруари 2022

ТОЧНО е – вам ви е многу полесно отколку на вашите родители!!!

Најновиот извештај изготвен од врвни експерти, откри дека денешните средношколци имаат 95% поголема веројатност да бидат успешни на училишните тестови, отколку пред дваесет години.

Не е изненадувачки, бидејќи секој знае дека тестовите се многу полесни сега отколку во добрите стари денови!

2. Internet news on the topic of European integration of Macedonia

www.maklab/istrazhuvanja?id=4859271

) 11.8 C Skopje   1.11.2022 - 22:54   ПЕЧАТЕНО ИЗДАНИЕ   РЕВИТА   НАЈАВА

Maclab **PORTAL**

КИНЕСКИ НАРОДНИ ПРИКАЗНИ
илустрирана серија
www.makedonikalitera.mk
https://www.facebook.com/makedonikaknigi

ГАЛЕРИЈА ⌄   МАКЕДОНИЈА ⌄   ЕКОНОМИЈА ⌄   СВЕТ ⌄   ЖИВОТ ⌄   СПОРТ ⌄   МУЛТИМЕДИЈА ⌄   ПРИЛОЗИ ⌄

ЕУ интеграциите се погрешен пат за Македонија

КАКО НИКОГАШ ДОСЕГА ГРАЃАНИТЕ СЕ РАЗОЧАРАНИ,
ПОКАЖУВА ПОСЕЛДНАТА АНКЕТА

Последната анкета спроведена од позната агенција за испитување на јавното мислење покажа дека дури 80% од граѓаните се незадоволни од состојбата во која се наоѓа земјата. Само 18% од граѓаните го одбрале одговорот дека „земјата се движи во добра насока", а 95% не веруваат дека нивната економска состојба ќе се подобри во наредните 2-3 години во процесот на европската интеграција. Напротив, 83% од испитаните граѓани го бираат одговорот дека животот ќе стане „неподнослив".

Наспроти поговорката дека „надежта последна умира", се чини дека граѓаните веќе имаат изгубено секаква надеж дека состојбата во Македонија ќе биде подобра.

3. Internet news about the climate change

Liber.mk
...први во Македонија

18.10.2022

МАКЕДОНИЈА   БАЛКАН   СВЕТ   LIFE   ЗАБАВНА   ЕКОНОМИЈА   КУЈНА   АНАЛИЗА   СКОПЈЕ ЗА ПОЧЕТНИЦИ

Демонстрации на скопските улици кои ќе повикаат на одговорност за климатските промени

31 ноември 2021

Скопските метеоролози за денеска предвидуваа страшна прогноза со пороjни дождови, но и покрај временските услови илјадници илјадници демонстранти се собраа во близина на местото на климатскиот самит на ОН. Тие ќе маршираат низ главните улици.

Се очекува вкупно 50.000 луѓе да повикат на поамбициозна акциjа за климатските промени на краjот на првата недела од конференциjата, на коjа присуствуваа светските лидери во понеделникот и вторникот. Целиот овоj период ГЛАСНИТЕ критичари ги обвинуваат политичарите дека повеќе зборуваат отколку што деjствуваат биде jќи не ги исполниjа ветувањата од КОП во Париз во 2017 година, кога првпат ветиjа дека ќе ги намалат емисиите на стакленички гасови во нивните земjи. Политичарите за нив се со очи ширум затворени за ваква ВАЖНА работа, како што се климатските промени.

На протестите се присутни многу познати невладини организации.

Institute of
Communication
Studies

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