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Just think about it.

Findings of the Media Literacy Index 2019

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Contents

Media Literacy Index 2019

Highlights

- The index assesses the resilience potential of 35 European societies to post-truth phenomenon by employing media freedom, education and interpersonal trust indicators.
- Finland, Denmark, the Netherland, Sweden and Estonia top the Media Literacy Index 2019. Finland at #1 spot among 35 countries has a substantial lead over the rest with 78 points
- The last five countries in the ranking are North Macedonia (#35 with 12 points), Turkey (#34 with 19 points), Albania (#33 with 22 points), BiH (#32 with 24 points) and Montenegro (#31 with 29 points).
- The trends between 2017 and 2019 show that the CEE countries regress most with the Czech Republic, Slovakia and Poland marking the biggest deterioration, followed by Latvia, Lithuania, Croatia, Hungary and Romania as well as neighboring Austria, Malta and Serbia.
- The index results register geographic patterns as Northwest European countries having the best prerequisites to withstand the misinformation ramifications and the Southeast European most vulnerable to it, while the Central and Eastern European countries deteriorate faster than the rest in the index results.
- Distrust in scientists and journalists are related to media literacy, as generally countries with higher levels of distrust have lower media literacy scores.
- Corruption seems to have direct relation to media literacy levels as countries very clean from corruption have high media literacy scores.
- "Back to basics" approach is recommended to address the ramifications of misinformation – from restoring public trust and dealing with corruption to guaranteeing media freedom and employing educational approaches as the best vaccination strategy to fake news.

We have been warned: The Media Literacy Index 2019

In January 2019 the scientists behind Doomsday Clock, which warns about the dangers of nuclear annihilation, added "the manipulation of facts, fake news and information overload" to the list of threats that might destroy our planet.[1] "The new abnormal" as they called it is the "moment in which fact is becoming indistinguishable from fiction, undermining our very abilities to develop and apply solutions to the big problems of our time".[2]

The Media Literacy Index was created in 2017 as a response to the 'post-truth' phenomenon[3] to measure the potential for resilience to 'post-truth', 'fake-news' and their consequence in a number of European countries and contribute to finding solutions.

The Media Literacy Index 2019, presented in this report, is the third edition of the index after those in 2017[4] and 2018[5]. The report is composed of three sections. In the first section, the results of the Media Literacy Index 2019 are presented. In the second section, the relationship between the media literacy scores and a number of phenomena is examined– including trust in scientists and journalists as well as corruption perceptions – trying to shed additional light on the issues at hand. The third section takes stock of the results and outlines possible solutions.

This report presents the third edition of the Media Literacy Index after the 2017 and 2018 editions – scoring and ranking 35 countries in Europe according to their capacity to withstand the 'post-truth' and its negative ramification. The main assumption is that indicators for media freedom, quality of education, interpersonal trust and e-participation can serve as predictors to the level of resilience of a society to fake news, post-truth and related phenomenon. The concept of media literacy is employed to gauge the potential for resilience to the negative effects of diminishing public trust, severely polarized politics, and fragmented media, among others.

In addition to the index immediate results, this report also offers a brief look into the different aspects of the post-truth phenomena and fake news and suggestions how they can be tackled, deliberating on different approaches.

[1] https://www.france24.com/en/20190124-information-wars-endanger-civilization-say-doomsday-experts
[2] "A new abnormal: It is still 2 minutes to midnight" 2019 Doomsday Clock Statement https://thebulletin.org/doomsday-clock/current-time/
[3] The report on the first Media Literacy Index 2017 entitled "Can this be true? Predictors of media literacy and resilience to the post-truth phenomenon in Europe", October 2017, is available at http://osi.bg/?cy=10&lang=2&program=1&action=2&news_id=749
[4] "Can this be true? Predictors of media literacy and resilience to the post-truth phenomenon in Europe", OSI-Sofia 2017, https://osis.bg/?p=437&lang=en
[5] "Media Literacy Index 2018: Common Sense Wanted", OSI-Sofia 2018 https://osis.bg/?p=121&lang=en

How the predictors are measured: about the index methodology

The current paper contains an instrument for measuring if not media literacy itself, but predictors of media literacy with the aim to rank societies in their potential for resilience in the face of the post-truth phenomenon. The model employs several indicators (Table 1) that correspond to different aspects related to media literacy and the post-truth phenomena. Level of education, state of the media, trust in society and the usage of new tools of participation seem to be the predictors of media literacy. As they have different importance, the indicators are included with a corresponding weight. The media freedom and education indicators carry most weight, with reading literacy attributed relatively most importance in education. Trust and e-participation indicators are attributed the remaining share. The index converts the data into standardized scores from 0 to 100 (lowest to highest) and ranks the countries from 1 to 35 (highest to lowest position).[6]

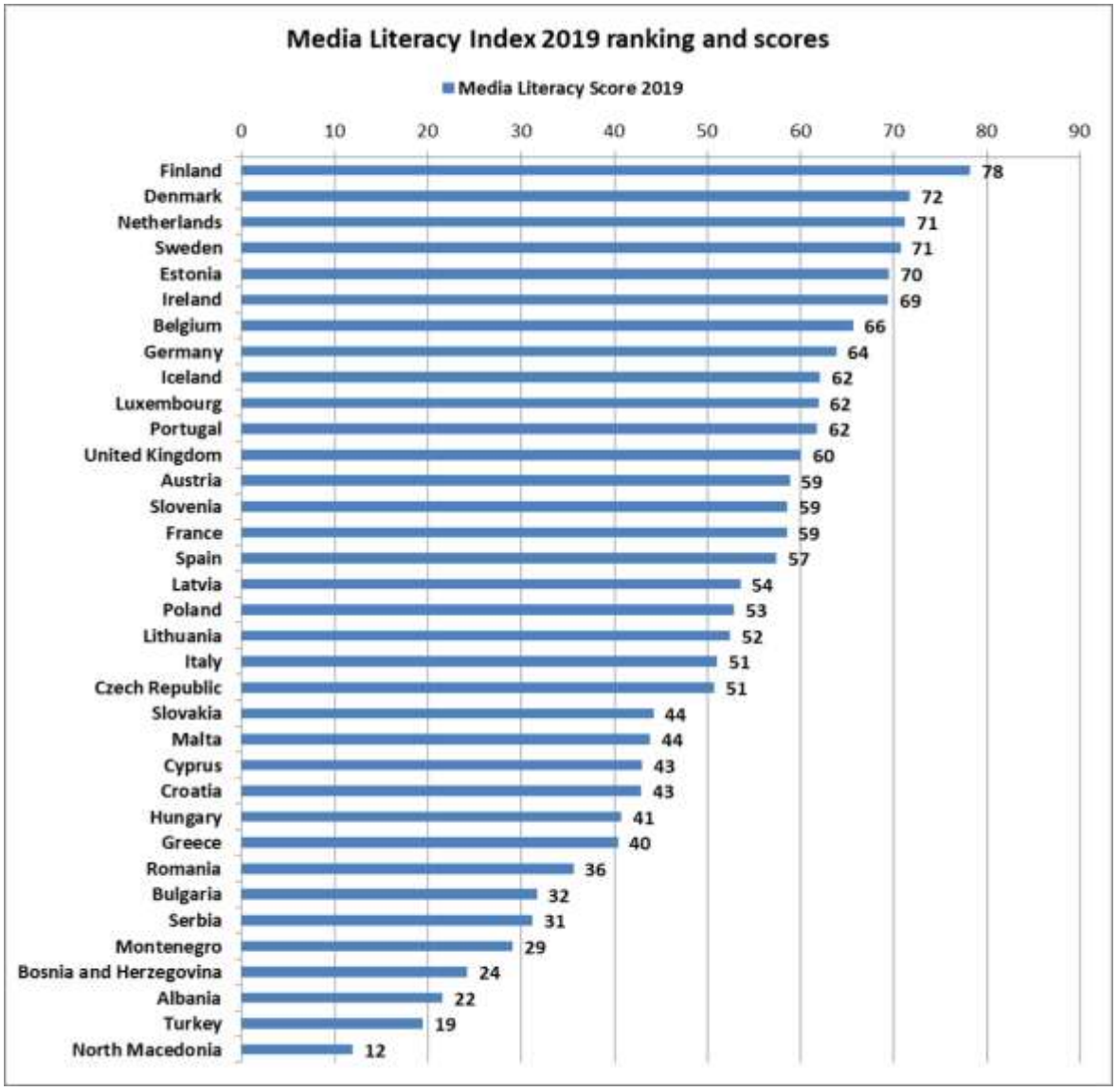
Methodology of the Media Literacy Index	
Indicators	**Weight**
Media Freedom indicators	
Freedom of the Press score by Freedom House	20%
Press Freedom Index by Reporters without Borders	20%
Education indicators	
PISA score in reading literacy (OECD)	30%
PISA score in scientific literacy (OECD)	5%
PISA score mathematical literacy (OECD)	5%
Share of population (%) with university degree (Eurostat)	5%
Trust	
Trust in others (Eurostat)	10%
New forms of participation	
E-participation Index (UN)	5%

Table 1. The table shows the methodology of the media literacy index with the groups of indicators, sources and their respective weight (importance). The data are converted into standardized scores (z-scores) from 100 to 0, highest to lowest.

[6] The used methodology and sources are based on the Catch-Up Index of the Open Society Institute - Sofia; the latest available data is as of 10 January 2019. You can find description of the methodology in the report "How Hard Can It Be? Findings of the European Catch-Up Index 2018", available in the Documents and Links section of the website www.thecatchupindex.eu and https://osis.bg/?p=3146&lang=en. Missing data were replaced using imputation procedures as described in the report.

What the numbers say about 2019: the index scores and ranking

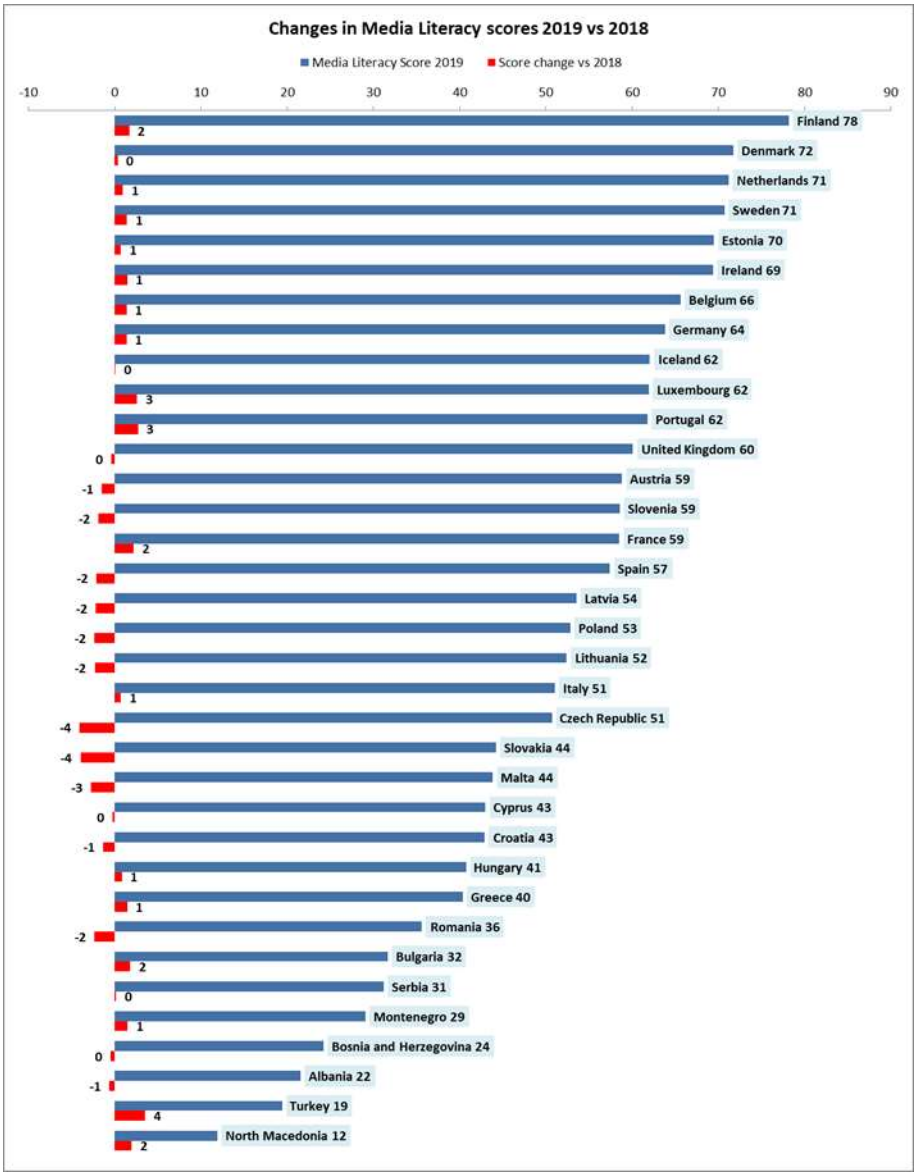
Finland, Denmark, the Netherland, Sweden and Estonia top the Media Literacy Index 2019. Finland at #1 spot among 35 countries has a substantial lead over the rest with 78 points on a 0-100 scale. Denmark is #2 with 72 points and the Netherlands (#3) and Sweden (#4) each have 71 points[7]. Estonia is 5th with 70 points. The last five countries in the ranking are North Macedonia (#35 with 12 points), Turkey (#34 with 19 points), Albania (#33 with 22 points), BiH (#32 with 24 points) and Montenegro (#31 with 29 points).



The figure shows the 35 European countries, included in the index, ranked according to their media literacy scores for 2019. The index uses standardized scores from 100 to 0, highest to lowest.

[7] With minimal difference after the decimal point before rounding

Changes in the Media Literacy scores



The figure shows the 35 European countries, included in the index, ranked according to their media literacy scores for 2019 next to the name of the country with standardized scores from 100 to 0, highest to lowest. The small columns represent the change of score between 2018 and 2019.

The Media Literacy Index has two pervious editions – from 2018 and 2017, which provides the opportunity to compare performance over the years and outlines trends. When the scores from the 2019 and the 2018 index results are compared, there are the following results. The scores of the Czech Republic and Slovakia deteriorate most, each decreasing by 4 points, followed by Malta with 3 points lower compared to 2018. A number of countries have lost 2 points each, among them Latvia, Poland, Lithuania and Romania.

The highest improvement in terms of score between 2018 and 2019 is in the case of Turkey (plus 4 points), but it remains second to last among all the 35 countries in the index. Other countries show certain improvement with 2 point increase in scores, but are still in the lower ranking positions are North Macedonia (35th in the ranking in 2019) and Bulgaria (29th). Portugal and Luxemburg each have 3 points increase in the scores.

Media Literacy Index 2019 and change vs 2018 and 2017						
Country	Score 2019	Rank 2019	Score change vs 2018	Score change vs 2017	Rank change vs 2018	Rank change vs 2017
Finland	78	1	2	2	0	0
Denmark	72	2	0	0	0	0
Netherlands	71	3	1	0	0	0
Sweden	71	4	1	4	0	2
Estonia	70	5	1	2	0	0
Ireland	69	6	1	1	0	-2
Belgium	66	7	1	2	0	0
Germany	64	8	1	1	0	0
Iceland	62	9	0	3	0	3
Luxembourg	62	10	3	3	4	3
Portugal	62	11	3	3	4	3
United Kingdom	60	12	0	1	-2	-1
Austria	59	13	-1	-2	-1	-3
Slovenia	59	14	-2	-2	-3	-5
France	59	15	2	4	1	4
Spain	57	16	-2	0	-3	0
Latvia	54	17	-2	-2	0	1
Poland	53	18	-2	-6	0	-3
Lithuania	52	19	-2	-2	1	1
Italy	51	20	1	1	1	2
Czech Republic	51	21	-4	-5	-2	-4
Slovakia	44	22	-4	-7	0	-1
Malta	44	23	-3	-3	0	0
Cyprus	43	24	0	0	1	1
Croatia	43	25	-1	-3	-1	-1
Hungary	41	26	1	-1	0	0
Greece	40	27	1	2	0	1
Romania	36	28	-2	-3	0	-1
Bulgaria	32	29	2	2	1	1
Serbia	31	30	0	-2	-1	-1
Montenegro	29	31	1	-1	0	0
Bosnia and Herzegovina	24	32	0	1	0	0
Albania	22	33	-1	0	0	0
Turkey	19	34	4	5	0	0
North Macedonia	12	35	2	1	0	0

The table shows the 35 European countries included in the index ranked according to their 2019 score as well as the change in scores and rank of

The comparisons between the 2019 and 2017 results show the following results. The greatest decrease in scores is among the EU member states in CEE. Slovakia with minus 7 points, Poland with minus 6 and the Czech Republic with minus 5 are the countries with steepest decline in scores when 2019 and the 2017 results are compared. Croatia (-3), Romania (-3) Slovenia (-2), Latvia (-2), Lithuania (-2), Hungary (-1) also register decrease in scores between 2019 and 2017, though on a smaller scale. Except these EU11 countries of Central and Easter Europe, the only other countries that deteriorate their performance between 2019 and 2017 are their neighbors of Austria (-2), Serbia (-2) as well as Malta (-3).

In terms of ranking, when 2019 and 2017 are compared, Slovenia (-5 spots down), the Czech Republic (-4 spots down), Austria (-3 spots down) and Poland (-3 spots down) suffer most of the downgrade in results. When all changes between 2019, 2018 and 2017 are considered, three of the Visegrad 4 countries – the Czech Republic, Slovakia and Poland – mark the biggest regress, with the other EU members in CEE deteriorating either – Latvia, Lithuania, Croatia, Hungary and Romania. Bulgaria is the only country in the group that does not deteriorate, but it

is also the last of the EU11 in the ranking. Among the rest of the countries, Austria, Malta and Serbia deteriorate too compared to 2017 and 2018.

With regard to improvement in the period 2019, 2018 and 2017, France makes the biggest progress climbing 4 positions and 4 points up when 2019 and 2017 are compared with a smaller improvement between 2018 and 2019. Iceland, Luxembourg and Portugal make consistent progress over the years either as well as Sweden to a lesser extent. Turkey makes progress in terms of scores when 2019 is compared to both 2017 and 2018, but it does not advance in the ranking and remains second to last among all 35 countries.

Media Literacy on the Map: the Index Clusters

The cluster analysis of the index results for 2019 divides the 35 countries into five groups with similar characteristics. The first cluster consists of the eight countries with the best scores in the index from Finland on #1 to Germany at #8. The second cluster consists of 11countries – from Iceland (#9) to the Czech Republic (321), which also have good performance in the index. The third cluster consists of countries with lackluster results, i.e. lower than average but not among the worst – from Slovakia (#22) to Hungary (#26) and Greece (#27). The fourth cluster consists of a small number of countries – from Romania (#28) to Montenegro (#31), which are second to the last in the index. The fifth and the last cluster consists of countries with the poorest results – from BiH (#32) to North Macedonia (#35).

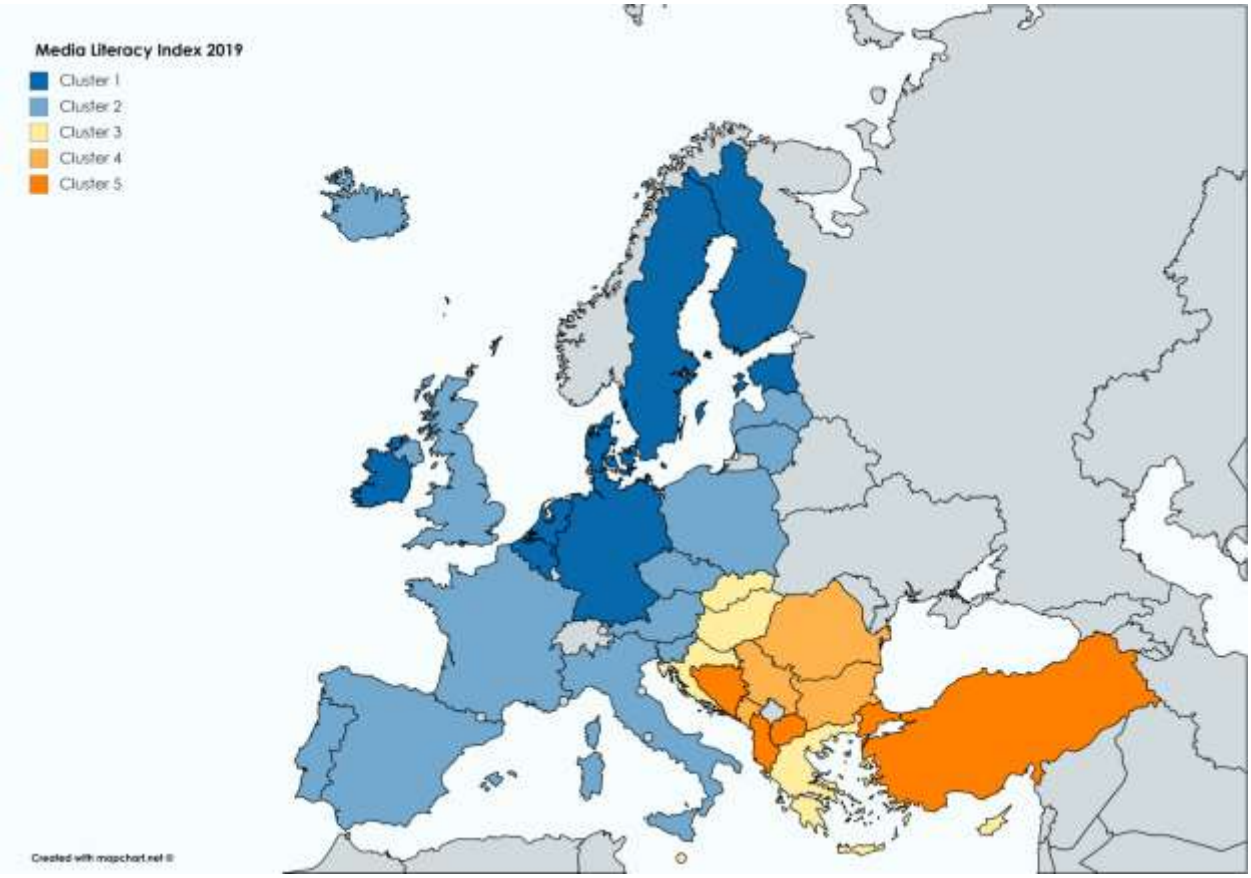
Clusters in Media Literacy Index 2019

Country	Score 2019 (100-0)	Rank 2019 (1-35)	Cluster
Finland	78	1	1
Denmark	72	2	
Netherlands	71	3	
Sweden	71	4	
Estonia	70	5	
Ireland	69	6	
Belgium	66	7	
Germany	64	8	
Iceland	62	9	2
Luxembourg	62	10	
Portugal	62	11	
United Kingdom	60	12	
Austria	59	13	
Slovenia	59	14	
France	59	15	
Spain	57	16	
Latvia	54	17	
Poland	53	18	
Lithuania	52	19	
Italy	51	20	
Czech Republic	51	21	
Slovakia	44	22	3
Malta	44	23	
Cyprus	43	24	
Croatia	43	25	
Hungary	41	26	
Greece	40	27	
Romania	36	28	4
Bulgaria	32	29	
Serbia	31	30	
Montenegro	29	31	
Bosnia and Herzegovina	24	32	5
Albania	22	33	
Turkey	19	34	
North Macedonia	12	35	

The table visualizes as follows: (a) The five clusters, based on the 2019 index scores of the countries. (b) The 35 countries in the index, ranked according to their index score. The standardized scores are from 100 to 0, highest to

lowest. The ranking positions are from 1 to 35, highest to lowest.

When the results of the cluster analysis are put on the map, there are clear patterns. The Northwestern and Western countries with the highest scores are the best performers with the Southern and some CEE countries following closely. The countries with the worst scores are in Southeastern Europe, divided into the last and second to last cluster. Between these two large groups is the third and transition cluster consisting of countries, which are either close neighbors or part of Southeastern Europe. The countries in the last clusters are potentially most vulnerable to the effects of fake news.



The map shows the results of a cluster analysis, based on the scores of the 35 European countries in the Media Literacy Index 2019. The cluster analysis sorts the countries into groups, where each country is more similar with those in its cluster than those in other clusters.

Suspicious Minds: Trust and Corruption in the Fake News Era

In this edition of the index, the possible links of the Media Literacy Index results to other social phenomena are examined. These include the lack of trust – in scientists and journalists - as the fake news phenomena coincided with the erosion of trust, as well as corruption perceptions.

The 'post-truth' era has been accompanied with decreasing levels of trust with dire societal and political implications. As a rule, disinformation campaigns and fake news either aim specifically at undermining trust or have this effect. The Media Literacy Index itself includes an indicator for interpersonal trust (trust in other people), though with little weight compared to other indicators (10% of the overall score). The current scores of the Media Literacy index are compared to survey results, which asked about levels of trust on several issues to explore if there is a link between them, despite the causes and effects cannot be identified in such cases.

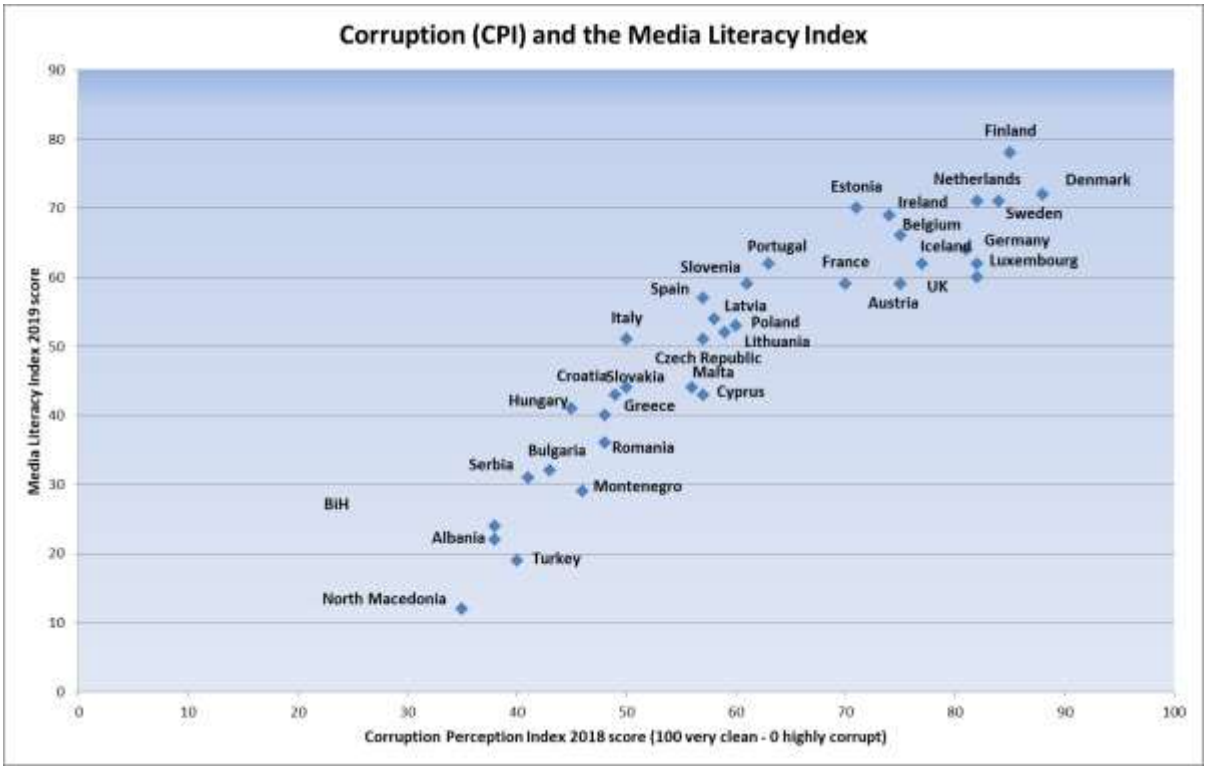
Corruption means 'falsification' too: CPI scores and media literacy

When the Media Literacy results were compared to other factors, there seemed to be a close relationship between the Media Literacy Index and Corruption Perception Index (CPI)[8] scores as countries with high Media Literacy score are perceived to be less corrupt and vice versa. The countries with the highest scores in media literacy have the lowest level of corruption – Denmark, Finland, Sweden and the Netherlands. Respectively, the countries with lower media literacy scores have also lower CPI scores (i.e. higher corruption perception) – North Macedonia, Turkey, Albania and BiH.

Although colloquially "corruption" is understood as simple bribery, the definition of Transparency International is "the abuse of entrusted power for private gain", e.g. corruption perceptions can be construed as a verdict on institutional weakness and deficits of public legitimacy.

Quite tellingly, another meaning of corruption is "the process by which a word or expression is changed from its original state to one regarded as erroneous or debased" with synonyms "falsification, doctoring, manipulation, manipulating, fudging, adulteration, debasement, degradation, abuse, subversion, misrepresentation"[9] This adds another frame of reference in the relationship between fake news and corruption with misinformation defined as "intentional corruption of the information ecosystem on which modern civilization depends."[10]

[8] The index of Transparency International, which ranks 180 countries and territories by their perceived levels of public sector corruption according to experts and businesspeople, uses a scale of 0 to 100, where 0 is highly corrupt and 100 is very clean. https://www.transparency.org/cpi2018
[9] See Oxford Dictionaries https://www.lexico.com/en/definition/corruption
[10] https://thebulletin.org/doomsday-clock/current-time/



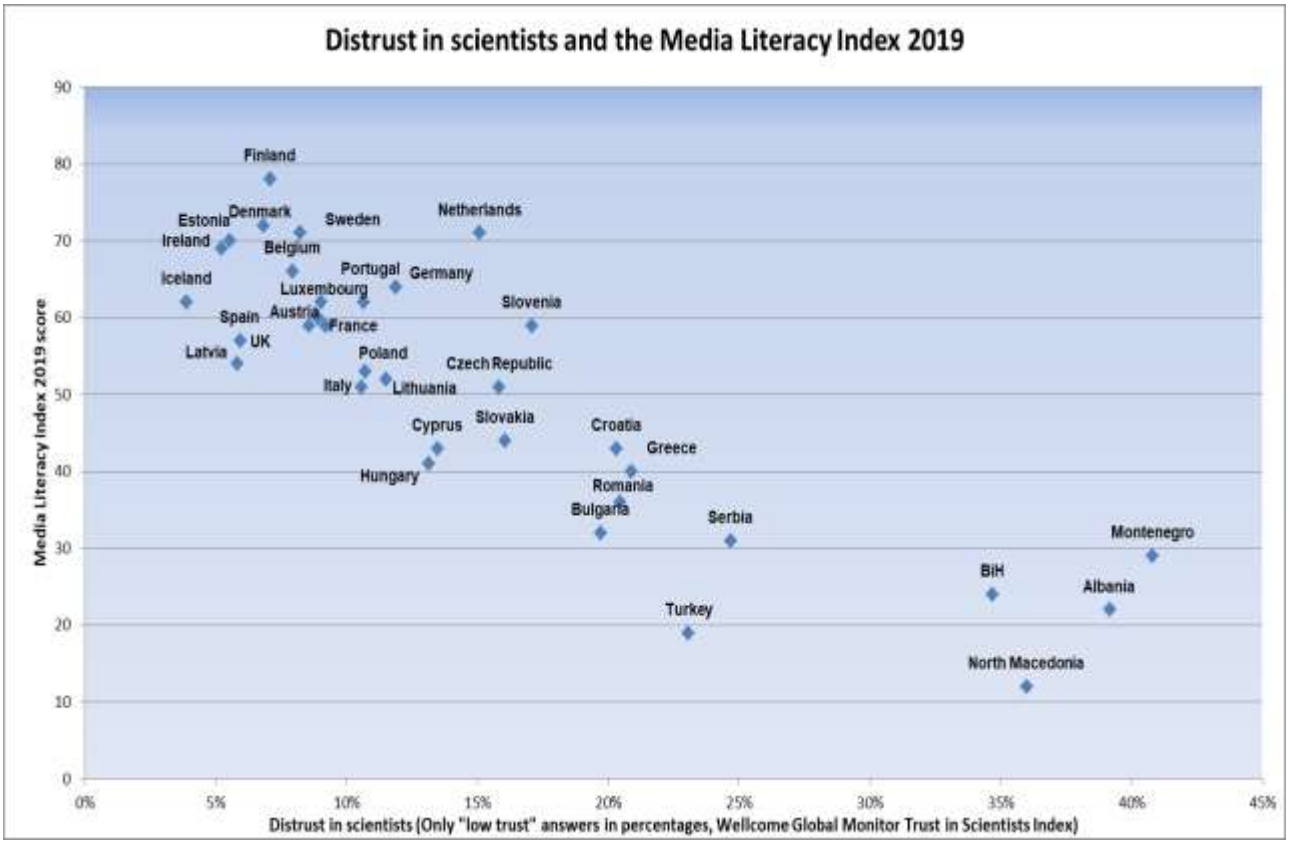
The scatter plot presents the Media Literacy Scores 2019 on the vertical axis (0 lowest to 100 highest) and the Corruption Perception Index (CPI) 2018 scores on the horizontal axis (0 highly corrupt and 100 very clean from corruption). CPI is produced by Transparency International.

Distrust in scientists

Distrust in scientists is another issue worth exploring as rising distrust in authorities and experts may be linked to the rise of fake news and the 'post-truth' phenomenon. In order to examine this suggestion, the data from the recent Gallup poll on the issue[11] has been compared to the Media Literacy scores. Countries with higher distrust in scientists have lower levels of media literacy, according to the results. Montenegro, Albania, North Macedonia and BiH, which have the highest level of distrust in scientists with over 35%, have among the lowest media scores. There seems to be a certain geographical pattern in these results. The other Southeast European countries of Serbia, Turkey, Greece, Romania, Croatia and Bulgaria have high levels of distrust in scientists with close to 20%-25% and at the same time low scores in media literacy. The Central European Slovenia, the Czech Republic, Slovakia and Hungary – follow closely their Balkan neighbors with high levels of distrust and respectively low to middle levels of

[11] Gallup (2019) Wellcome Global Monitor – First Wave Finding, https://wellcome.ac.uk/sites/default/files/wellcome-global-monitor-2018.pdf

media literacy. The Northwestern countries have the highest levels of media literacy and the lowest level of distrust in their scientists. Finland, which is at the top of the ranking in the Media Literacy Index, has also the lowest distrust in scientists. Denmark, Sweden, Estonia and the Netherlands follow closely Finland's results.



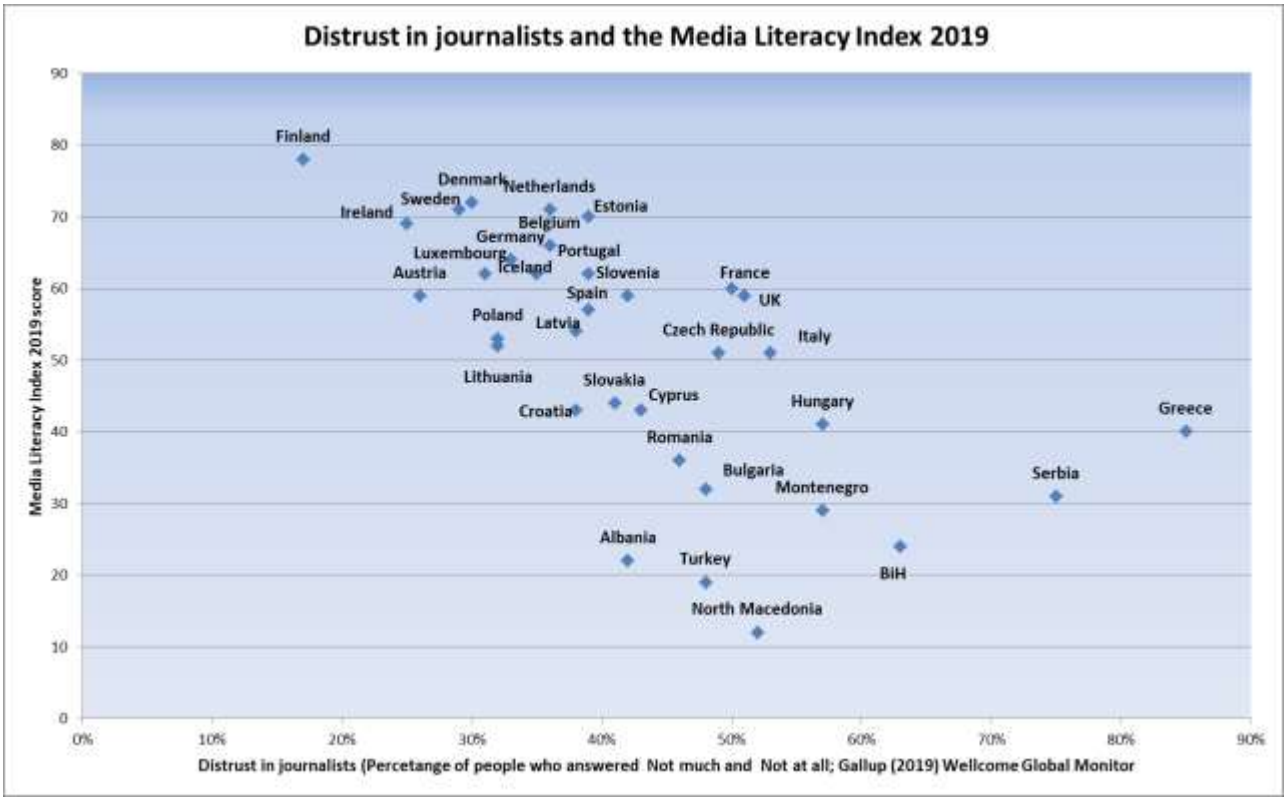
The scatter plot presents the Media Literacy Scores 2019 on the vertical axis (0 lowest to 100 highest) and the Distrust in scientists in percentages on the horizontal axis (0% lowest and 100% highest). The Distrust in scientists includes only the percentage of "low trust" answers of the Wellcome Global Monitor Trust in Scientists Index in the Gallup (2019) Wellcome Global Monitor – First Wave Findings.

Distrust in journalists

Distrust in media has accompanied the rise in misinformation. The crisis in traditional media, related to the erosion of their business model and the rise of social media, has hampered their ability to serve as gatekeepers of information and educate the public. In turn, the lowering media standards have brought

about severing the relationship with their audiences. In a number of countries, there is another set of problems related to deliberate attempts to stifle media freedom with attacks on media or imposing direct control over the media.

The scatterplot shows the levels of distrust towards journalists and the media literacy index. The results show a certain pattern as countries with high level of distrust in journalists have generally low scores in media literacy and vice versa. Finland is in a league of its own with very low distrust in journalists – just 17% - and the highest Media Literacy Index 2019 score with 78 points. Irelands, Sweden, Denmark and the Netherlands, among others, follow closely. Greece has the highest level of distrust towards journalists – 85% of people saying they have not much or not at all trust in them. Serbia, BiH, Montenegro, Hungary and a number of other Southeast European countries also have low media literacy scores and very high distrust in journalists.



The scatter plot presents the Media Literacy Scores 2019 on the vertical axis (0 lowest to 100 highest) and the Distrust in journalists in percentages on the horizontal axis (0% lowest and 100% highest). The Distrust in government is based on the combined percentages of Not much and Not at all answers to the question "How much do you trust each of the following? How about journalists in this country? Do you trust them a lot, some, not much, or not at all?" by Gallup (2019) Wellcome Global Monitor – First Wave Findings.

France and the UK are somewhat exceptions with relatively high distrust in journalists – in the company of North Macedonia, Turkey and Bulgaria, but higher media literacy scores close to those of Spain and Austria. As the Media Literacy Index includes indicators for media freedom (40% of the overall score), it

may be suggested that lower media freedom are accompanied by low public trust in journalists as people simply believe much less in controlled media.

Vaccination to fake news: considering problems and approaches

Taking stock of the misinformation ramifications

The urgency to address misinformation is succinctly spelled out by the Bulletin of the Atomic Scientists, who created the so-called Doomsday Clock, saying in a recent statement that "by manipulating the natural cognitive predispositions of human beings, information warriors can exacerbate prejudices, biases, and ideological differences. They can invoke "alternative facts" to advance political positions based on outright falsehoods. Rather than a cyber Armageddon that causes financial meltdown or nationwide electrical blackouts, this is the more insidious use of cyber tools to target and exploit human insecurities and vulnerabilities, eroding the trust and cohesion on which civilized societies rely."[12]

In this context, the vaccines hesitancy case offers a cautionary tale with regard to some of the possible ramifications of misinformation. On global level, Europe has among the lowest confidence in vaccine safety – with France as particular case - and Eastern Europe it is even lower confidence than the rest.[13] The effects can be registered for example by measles cases in Europe, which has reportedly tripled in the last year[14]. Vaccine hesitancy makes for an indicative case study as it combines most of the elements, related to disinformation with a deliberately misleading source, misreporting by media[15], global conspiracy theories and public scare with dire public health consequences. Experts claim that "the single best predictor of belief in one conspiracy theory is belief in a different conspiracy theory"[16], suggesting believing one conspiracy perpetuates other conspiracy theories.[17] The vaccine hesitancy is

[12] A new abnormal: It is still 2 minutes to midnight" 2019 Doomsday Clock Statement https://thebulletin.org/doomsday-clock/current-time/

[13] It is important to note that the vaccine survey (Gallup (2019) Wellcome Global Monitor – First Wave Findings) includes three questions – the trust of the public in vaccines safety, effectiveness and if they have to be applied. In Europe, while trust in safety was low, there was higher trust in their effectiveness and even higher share thought vaccines should be used.

[14] "Measles cases in Europe tripled last year, WHO says", BBC, 7 February 2019, https://www.bbc.com/news/health-47157020

[15] https://www.theatlantic.com/magazine/archive/2019/08/measles-as-metaphor/592756/

[16] Jan-Willem van Prooijen and Karen M. Douglas, "Belief in conspiracy theories: Basic principles of an emerging research domain", European Journal of Social Psychology, 2018 Dec; 48(7): 897–908, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6282974/

[17] It started with a 1998 reportedly falsified article in the Lancet, later retracted, "Vaccine-Autism Scare: Researcher Who Started It All Falsified Data?", the Atlantic, 6 January 2011, https://www.theatlantic.com/entertainment/archive/2011/01/vaccine-autism-scare-researcher-who-started-it-all-falsified-data/342750/

also a case of populist politicians taking advantage of the situation for political ends with direct correlation between voting for left or right populist parties and anti-vaccine positions[18][19].

The current report also outlines the possible relationship between media literacy and trust and corruption. Trust or the thereof the lack of it seems to play an important role. The erosion of trust in societies has accompanied the rise in fake news and disinformation as one of its most damaging effects. There seems to be a paradox – the more distrustful is a society – in each other, experts and so on – the more people seem to trust in fake news. But this is not exactly the case. But misinformation is not meant just to make someone trust "an alternative fact". More often than not disinformation is meant to sow confusion and make citizens suspicious of everything, question everything, ultimately increasing distrust in society, far beyond the healthy levels of curiosity necessary for innovation. According to the results, outlined in the report, high levels of distrust in scientists and journalists as a rule correspond to low media literacy scores. Respectively, countries with good media literacy performance generally have low shares distrust in their experts and journalists.

Another societal problem – corruption – as measured by the Corruption Perception Index - seems to correspond very closely to the Media Literacy Index scores. There may be a direct relationship and countries, considered highly corrupt, have low media literacy scores and those with high media literacy scores are considered very clean from corruption. A possible explanation may be that corruption flourishes in institutionally weak countries and corruption is in the long list of citizens' grievances along with lack of trust that authorities can deal with it. But besides corruption as used by TI's CPI, it is telling that the word corruption also may mean "falsification, manipulation" referencing more directly to the fake news problem. These are important aspects with regard to looking for causes and seeking solutions as societies with weaker institutions and low public trust have fewer defense mechanisms against the effects of misinformation.

Education and free media remain imperative

The still short record of dealing with misinformation has at least shown that it cannot be dealt with by "blunt" instruments as blanket regulations that cover all cases or all instances. There are two particular challenges. The first one concerns free speech and free media as "anti-fake news" regulations can be used to stifle freedom of expression, e.g. there is the case of Malaysia which introduced and then

[18] "Measles cases at highest for 20 years in Europe, as anti-vaccine movement grows", the Guardian, 21 December 2019, https://www.theguardian.com/world/2018/dec/21/measles-cases-at-highest-for-20-years-in-europe-as-anti-vaccine-movement-grows

[19] "Vaccine scepticism grows in line with rise of populism – study", the Guardian, 25 February 2019, https://www.theguardian.com/world/2019/feb/25/vaccine-scepticism-rises-in-line-with-votes-for-populists-study-finds

decided to repeal such law.[20] Such regulations are necessary, especially in private data protection, but the overall context of rule of law and active civil society must be present to guarantee against misuse of such regulations. The other challenge is the fine line between curiosity, which drives innovation, and questioning basic facts in an often preposterous way, presenting them as "alternative facts".

In June 2019 a CNN Special Report, partly employing the Media Literacy Index findings[21], detailed the education approach that drives Finland's success in tackling fake news. The main assumption of the Media Literacy Index is that the quality of education and the media environment to a larger extent are predictors of media literacy. Furthermore, in societies with higher scores, which mean better education levels and freer media, have better capacity to withstand the negative effects of misinformation. In the previous editions of the Media Literacy Index the main recommendation was to use education as the best approach to address fake news and post-truth. Education – both functional education and specialized media literacy education - offered a sort of inoculation to fake news to either prevent them or make them easier to survive. Education remains imperative for addressing the issue of disinformation. A Gallup/Knight study in the US found that education remains a key predictor in identifying fake news as people with higher education estimated far less misinformation in media than the other groups.[22] Research has shown that people with higher education are less likely to fall for conspiracy beliefs[23]. A recent article argued compellingly that "Beneath the spread of all "fake news," misinformation, disinformation, digital falsehoods and foreign influence lies society's failure to teach its citizenry information literacy: how to think critically about the deluge of information that confronts them in our modern digital age."[24]

As far as media's role is concerned, despite the advent of social media and its main role in spreading misinformation, traditional media remain important and sought after source of information. In a 2018

[20] "Government can handle fake news even without Anti-Fake News law – Mahathir", April 9, 2019https://www.pmo.gov.my/2019/04/government-can-handle-fake-news-even-without-anti-fake-news-law-mahathir/

[21] Finland is winning the war on fake news. What it's learned may be crucial to Western democracy, CNN Special Report, May 2019, https://edition.cnn.com/interactive/2019/05/europe/finland-fake-news-intl/

[22] "Americans' Views of Misinformation in the News and How to Counteract It", A Gallup/Knight Foundation Survey 2018, https://knightfoundation.org/reports/american-views-trust-media-and-democracy?utm_source=link_newsv9&utm_campaign=item_235796&utm_medium=copy

[23] Jan-Willem van Prooijen and Karen M. Douglas, "Belief in conspiracy theories: Basic principles of an emerging research domain", European Journal of Social Psychology, 2018 Dec; 48(7): 897–908,

[24] A Reminder That 'Fake News' Is An Information Literacy Problem - Not A Technology Problem by Kalev Leetaru, Forbes, 7 July 2019, https://www.forbes.com/sites/kalevleetaru/2019/07/07/a-reminder-that-fake-news-is-an-information-literacy-problem-not-a-technology-problem/?fbclid=IwAR3GT6jFylFwcx3KOXaMGq_9Gzut5YESPxJkLfohd2lgNY-XphJe28O_q6E#f4598256a6f2

Eurobarometer poll[25], the respondents say they trust traditional media more - 63% trust print media and 26% social media and messaging apps. A survey on disinformation in the US respondents saw more misinformation on social media (65%) than on traditional news media (39%). The vast majority of the attention and measures against fake news are focused on social media. But the focus on social media overlooks the problems with the media environment and media freedom in a number of countries. Controlled media are by definition purveyors of disinformation on behalf of those who control them. Even the other elements of tackling misinformation are present, a problematic media environment will continue to perpetuate the problem. Upholding media freedom is a basic prerequisite for addressing misinformation.

Coming back to the possible solutions to fake news and misinformation, there are several promising approaches such as making social networks more accountable, especially with regard to private data, using and promoting fact-checking organizations, flagging overtly untrue information, applying codes of ethics and other forms of self-regulation, making sure toxic online and related offline behavior will not be tolerated.

It is clear that there will be no quick fixes, rushing to react may become part of the problem or as one article put it "Twitter Needs a Pause Button"[26] at the time of instantaneous reactions. There is need to just think about it. Eventually, the findings in this report call for a "back to basics" approach in dealing with misinformation and its ramifications – this includes addressing the erosion of public trust and corruption in the broader sense of the term, guaranteeing media freedom and vigorously employing education approaches to inoculate against fake news.

[25] Fake news and disinformation online, Flash Eurobarometer 464, April 2018, http://ec.europa.eu/commfrontoffice/publicopinion/index.cfm/survey/getsurveydetail/instruments/flash/surveyky/2183

[26] "Twitter Needs a Pause Button" by Jonathan Rauch, the Atlantic, August 2019, https://www.theatlantic.com/magazine/archive/2019/08/twitter-pause-button/592762/

Media Literacy Index 2019: sources and data

Index ranking and scores		Used sources and data	Freedom of the Press (Freedom House)	Press Freedom Index (Reporters without Borders)	PISA score in reading literacy (OECD)	PISA score in scientific literacy (OECD)	PISA score mathematical literacy (OECD)	Share of population (%) with university degree (Eurostat)	Trust in others (Eurostat, EQSL)	E-participation Index (UN)
Ranking (1-35)	Score (100-0)	Country/Scale	On a scale from 0 to 100 (best to worst)	On a sclae from 0 to 100 (best to worst)	The higher score the better; 500 is very good and below 300 is a very poor result	The higher the better; 500 is very good and below 300 is a very poor result	The higher the better, 500 is very good and below 300 is a very poor result	In percentages from 100% to 0% (higher is better)	On a scale from 10 to 0 (highest to lowest)	On a scale from 1 to 0 (highest to lowest)
1	78	Finland	12	7.9	526	511	531	36.4	7.4	1
2	72	Denmark	12	9.87	500	511	502	32.4	7.3	1
3	71	Netherlands	11	8.63	503	512	509	32.1	6.2	0.9888
4	71	Sweden	11	8.31	500	494	493	36.0	6.6	0.9382
5	70	Estonia	16	12.27	519	520	534	34.7	5	0.9101
6	69	Ireland	18	15	521	504	503	39.6	6	0.9326
7	66	Belgium	12	12.07	499	507	502	35.6	5.3	0.7584
8	64	Germany	20	14.6	509	506	509	24.8	5.1	0.9213
9	62	Iceland	15	14.71	482	488	473	35.3	7.0	0.6854
10	62	Luxembourg	14	15.66	481	486	483	34.1	5.9	0.9382
11	62	Portugal	17	12.63	498	492	501	21.7	4.7	0.8989
12	60	United Kingdom	25	22.23	498	492	509	38.8	5.4	0.9831
13	59	Austria	22	15.33	485	497	495	29.7	5.3	0.8258
14	59	Slovenia	23	22.31	505	510	513	28.7	4.8	0.8146
15	59	France	26	22.21	499	493	495	31.4	5.4	0.9663
16	57	Spain	28	21.99	496	486	493	33.2	5.2	0.9831
17	54	Latvia	26	19.53	488	482	490	30.0	4.5	0.6854
18	53	Poland	34	28.89	506	504	501	26.3	4.7	0.8933
19	52	Lithuania	21	22.06	472	478	475	34.8	4.6	0.8034
20	51	Italy	31	24.98	485	490	481	16.5	5.2	0.9551
21	51	Czech Republic	21	24.89	487	492	493	21.4	4.3	0.618
22	44	Slovakia	26	23.58	453	475	461	20.7	4	0.809
23	44	Malta	23	29.74	447	479	465	22.1	5	0.8483
24	43	Cyprus	23	21.74	443	437	433	38.1	3	0.8202
25	43	Croatia	41	29.03	487	464	475	20.6	3.8	0.7697
26	41	Hungary	44	30.44	470	477	477	20.9	4.9	0.7079
27	40	Greece	44	29.08	467	454	455	27.2	4.1	0.8764
28	36	Romania	38	25.67	434	444	435	15.3	4.8	0.7079
29	32	Bulgaria	42	35.11	432	441	446	24.5	4	0.8708
30	31	Serbia	49	31.18	432	441	446	19.8	4.4	0.8146
31	29	Montenegro	44	32.74	427	418	411	20.6	4.5	0.7416
32	24	Bosnia and Herzegovina	51	29.02	427	418	411	18.0	3	0.4326
33	22	Albania	51	29.84	405	413	427	18.0	2.4	0.7584
34	19	Turkey	76	52.81	428	420	425	16.6	5.3	0.8596
35	12	North Macedonia	64	31.66	352	371	384	18.0	3	0.7022

Table 4. The data was converted into standartized z-scores and missing data was imputed following the methodology described in the Catch-Up Index reports, available in the documents and links section of the website www.thecatchupindex.eu and https://osis.bg/?p=3146&lang=en. The latest available data was used as of 10 January 2019.

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