

UNIVERSITY OF ECONOMICS IN BRATISLAVA
FACULTY OF NATIONAL ECONOMY

Evidenčné číslo: 101008/I/2024/S421000354602K

THE EFFECT OF NEGATIVE NEWS ON
COOPERATION DECISIONS

Master's thesis

2024

Bc. Stanislav Baluch

UNIVERSITY OF ECONOMICS IN BRATISLAVA
FACULTY OF NATIONAL ECONOMY

**THE EFFECT OF NEGATIVE NEWS ON
COOPERATION DECISIONS**

Master's thesis

Study programme: Aplikovaná ekonómia

Field of study: Ekonómia a manažment

Training centre: Katedra poisťovníctva, NHF

Supervisor of the final thesis: Ing. Matej Lorko, PhD.

Bratislava 2024

Bc. Stanislav Baluch

ACKNOWLEDGEMENTS

Special thanks belong to my supervisor Ing. Matej Lorko, PhD. for his professional guidance, inspiring insights, and patience.

ABSTRAKT

BALUCH, Stanislav: *The effect of negative news on cooperation decisions*. – Ekonomická univerzita v Bratislave. Národohospodárska fakulta; katedra poisťovníctva. –
Vedúci/vedúca záverečnej práce: Ing. Matej Lorko, PhD.. – Bratislava: NHF EU, 2024,
počet strán 84.

Témou záverečnej práce je vplyv negatívnych správ na rozhodovanie o kooperácii. Cieľom práce bolo zistiť vplyv pozitívnych a negatívnych správ na vybrané formy prosociálneho správania. Hoci na základe našich údajov získaných dotazníkovým experimentom nie je možné jednoznačne určiť efekt pozitívnych správ, výsledky naznačujú, že negatívne správy v krátkom období znižujú mieru interpersonálnej dôvery. Deje sa tak prostredníctvom iných ako emočných procesov.

Kľúčové slová: správy, media bias, negatívne skreslenie, spolupráca, altruizmus, dôvera

.....

ABSTRACT

The topic of this final thesis is the effect of negative news on decision-making about cooperation. The aim of the work was to determine the effect of positive and negative news on selected forms of prosocial behavior. Although it is not possible to clearly determine the effect of positive news based on our data obtained through a questionnaire experiment, the results indicate that negative news reduce the level of interpersonal trust in the short term. This happens through processes other than emotional ones.

Keywords: news, media bias, negativity bias, cooperation, altruism, trust

Contents

<u>List of illustrations and tables</u>	9
<u>Vocabulary</u>	9
<u>Introduction</u>	10
<u>1 Current state of the research at home and abroad</u>	11
<u>1.1 News</u>	11
<u>1.1.1 Negativity bias</u>	12
<u>1.1.2 Positive news</u>	12
<u>1.2 Media framing and slant</u>	13
<u>1.3 Priming</u>	14
<u>1.4 Emotivation</u>	15
<u>1.5 Social norms</u>	16
<u>1.6 Effects of distressing news</u>	17
<u>2 Aim of the work, methodology and methods of research</u>	19
<u>2.1 Treatment groups</u>	20
<u>2.1.1 Positive and negative affect scale (PANAS)</u>	20
<u>2.2 Dependent variables</u>	20
<u>2.2.1 General Trust Scale (GTS)</u>	21
<u>2.2.2 Helping Attitudes Scale (HAS)</u>	21
<u>2.2.3 Tolerance of dishonest behaviour (ANTI)</u>	21
<u>2.2.4 Overlap of Self, Ingroup, and Outgroup Scale (OSIO)</u>	21
<u>2.3 Control variables</u>	22
<u>2.3.1 Age</u>	22
<u>2.3.2. Gender</u>	22
<u>2.3.3. Education Attainment</u>	22
<u>2.3.4. Time spent by consuming news</u>	22
<u>2.3.5. Religion</u>	23
<u>2.4 Quantitative methods</u>	24
<u>2.4.1 Analysis of variance and t-test</u>	24
<u>2.4.2 Kruskal-Wallis test and Mann-Whitney-Wilcoxon U test</u>	25
<u>2.4.3 Linear regression (OLS)</u>	26
<u>2.4.4 Mediation analysis</u>	27
<u>2.4.5 Boxplots</u>	29
<u>3 Results</u>	30

<u>3.1 Descriptive statistics</u>	30
<u>3.2 News and emotional response (manipulation check)</u>	31
<u>3.2.1 Results</u>	31
<u>3.3 General Trust Scale</u>	32
<u>3.3.1 Results</u>	33
<u>3.4 Tolerance of dishonest behaviour</u>	33
<u>3.4.1 Results</u>	33
<u>3.5 Helping Attitudes Scale</u>	34
<u>3.5.1 Results</u>	34
<u>3.6 Overlap of Self, Ingroup, and Outgroup scales</u>	35
<u>3.6.1 Results</u>	35
<u>3.7 Linear regressions (OLS)</u>	36
<u>3.6.1 News and general trust</u>	36
<u>3.6.2 News and helping attitudes</u>	37
<u>3.8 Mediation analysis</u>	38
<u>3.9 Additional findings</u>	38
<u>3.9.1 Religion and helping attitudes</u>	39
<u>3.9.2 Gender differences and prosocial behaviour</u>	39
<u>3.9.3 News media outlets</u>	40
<u>4 Discussion</u>	42
<u>4.1 Limitations</u>	43
<u>4.2 Laboratory experiment designs</u>	45
<u>Trust game</u>	45
<u>Public goods game</u>	45
<u>Conclusion</u>	47
<u>Resumé</u>	48
<u>List of literature</u>	52
<u>Annexes</u>	63

List of illustrations and tables

<u>Graph 1 – Box Plots: PANAS results (manipulation check)</u>	31
<u>Graph 2 - Box Plots: General Trust Scale (GTS) by Treatment group</u>	32
<u>Graph 3- Box Plots: Tolerance of dishonest behaviour (ANTI) by Treatment group</u>	33
<u>Graph 4 - Box Plots: Helping Attitudes Scale (HAS) by Treatment Group</u>	34
<u>Graph 5 - Box Plots: Overlap of Self, Ingroup and Outgroup (OSIO) by Treatment group</u>	35
<u>Graph 6 - Mediation analysis of the effect of negative news (NT) on general trust scale (GTS) score via negative emotions affect (NA)</u>	38
<u>Diagram 1 - Scheme of analysis of the effects of news (N) on behaviour (B)</u>	27
<u>Diagram 2 - Scheme of the analysis of the effects of news (N) on behaviour (B) mediated by emotions (E)</u>	28
<u>Diagram 3 - Scheme of Baron and Kenny's mediation analysis, Source: Mehmetoglu (2018)</u>	29
<u>Table 1 - Description of used and collected variables</u>	23
<u>Table 2 - Results of linear regression (OLS)</u>	36
<u>Table 3- Ratio of male and female respondents by treatment group</u>	40
<u>Table 4 - Correlations between news media consumption and behaviour scales</u>	40
<u>Table 5 - Correlations between news consumption by media outlet</u>	40

Vocabulary

Prosocial behaviour – any kind of behaviour that is beneficial for other people

Negativity bias – tendency to prefer and pay more attention to negative stimuli

Priming – the response to following stimuli caused by previous stimuli

Framing – contextualisation of information

Injunctive norms – written or unwritten rules about how one should behave

Descriptive norms – written or unwritten rules about how other people really behave

Introduction

With the constant presence of communication technologies and the 24-news-cycle, news became a part of our everyday lives. Even if one tries to take a break from it (the news avoidance rises globally), the hottest news is always one conversation away. What's more, it is not even cheerful. Does negative news depicting a rather grim picture of reality make us more avoidant or less trusting towards people? Does it make us more self-centred? And what about positive news? The goal of our diploma thesis was to measure the effect of news on emotional affects (as for one of the possible channels of the news effect), general trust, helping attitudes, tolerance of dishonest behaviour and self/group identification as proxies for cooperation. This was based on wide literature review analysing psychological and behavioural economical concepts such as framing, priming, social norms and emotions. Our survey divided respondents into three groups – one control group reading neutral news, and two treatment groups (with positive and negative news). Using statistical methods ANOVA, Kruskal Wallis for the filtration based on statistical differences among groups, t-tests, and Mann-Whitney U tests to compare the treatment groups to our control group, Linear regression (OLS) to estimate relative effects of news and other variables that may influence the results, and mediation analysis to find out through which psychological channels the news changes behaviour. Our results: negative news tends to lower the general trust in the short term. It does not do so via emotional affects, but via other means (descriptive norms, framing and priming). Although positive news had some marginal effects, no statistically significant effect was found. Our thesis adds to the knowledge of behavioural economics, from the perspective of the short-term decision making about cooperation after the exposure to news about negative events.

1 Current state of the research at home and abroad

The aim of our literature review is to introduce our reader to the intricate network of news effects and to current state of research about this topic. To provide a detailed picture, we took the interdisciplinary approach by collecting the knowledge of media studies, behavioural economics, and psychology. The keywords for our subtopics are framing, priming, negativity bias, social norms, emotivation. Does the news affect behaviour via emotion or information provided? What are the effects of distressing news? And how is this topic related to economic theory? This and much more is answered below.

1.1 News

To begin our research about the effects of news, we had to ask a simple question: What is news? Cambridge Dictionary defines news as “information or reports about recent events”. However, there is a lot happening in the world and not all news is “newsworthy”. Harcup and O’Neill (2017) analysed British newspapers and social media to find out that “potential news stories must generally satisfy one and preferably more of the following requirements to be selected: exclusivity, bad news, conflict, surprise, audio-visuals, shareability, entertainment, drama, follow-up, relevance, magnitude, celebrity, good news, news organisation’s agenda“ (p. 13), while: ”bad news is the big winner; but good news are still significant” (p.7). Negativity of news seems to play a crucial role in their “publishability”. Another significant factor is entertainment, which by the depiction of conflict, drama, or surprise uses both negative and positive emotions. (p.10) Although “arresting audio-visuals” (p.12) do increase the shareability of news on social media, we did not examine their effects.

The preference for negative news by producers and consumers was also researched by Soroka (2012, 2015), Soroka et al. (2018), Trussler and Soroka (2014), Robertson et al.(2023), Tsugawa and Ohsaki (2015) and many others. While the demand of negative news is driven by psychological mechanisms of consumers (Rozin and Royzman, 2001), the supply is formed in accordance with their expectations. (Gentzkow and Shapiro, 2006) However, the demand is satisfied not only by the content of media, but also by slant.

1.1.1 Negativity bias

Negativity bias describes a human tendency to seek and be attracted to information that leads to negative emotions. Information causing neutral or positive emotions is, on the other hand, given much less attention. (Vaish et al., 2008). The research of Carretié et al (2001) finds this phenomenon on a deeper level – negatively valenced stimuli increase the arousal and attention. Negativity bias is present in humans all around the world (Soroka et al., 2019, p.18890). This explains spreading of negatively sounding headlines, short news, and memes across both traditional and social media globally. As explained in Kahneman and Tversky (1981), losses generate a stronger emotional response than gains. In the context of news – by highlighting the possible losses and dangers, the frame of negative news changes our perceived reality and our beliefs about it. Reality itself doesn't have to be dark, disturbing, or shocking, but its description in such way combined with a sheer amount of content consumers are exposed to may have an impact on human behaviour in long term. This has been seen by Mastorocco and Minale (2018), who found a link between media news and crime perception, leading to a change of voting behaviour, and Tesei et.al (2018) studying the effect of Italian politicians' television programme on civic mindedness.

The effect of negative news on behaviour is also visible in short-term. Experiments of Hornstein et al. (1975) and Han et al. (2018) show that the exposure to negative news and disturbing content weakens social trust and decreases helping behaviour.

1.1.2 Positive news

The effect of positive news is not widely researched. However, as shown before by Harcup and O'Neill (2017), positive news also plays a significant role in total media outlet. Stories about heroic deeds, inspiring individuals or persistence and resilience against hardships, together other entertaining find their place in our daily feeds. Although long-term exposure to positive news was not studied, there are some findings about short-term effects. Hornstein et al. (1975) shows that positive news invokes higher trust among subjects, Yao and Yu (2016) notice an increase in cooperative behaviour. People exposed to positive news are also more prone to tax compliance (Fišar et al., 2021). This is for our thesis particularly important, because it shows results of an experiment in a geographical area of our close neighbour and concludes, that in the case of tax compliance, the effect of negative news is much less significant than an effect of positive news. (p. 1174) Positive news may also have other prosocial effects.

1.2 Media framing and slant

Media framing is a deeply researched topic in media studies, psychology, and economics. D'Angelo (2017) defines media framing as “a written, spoken, graphical, or visual message modality that a communicator uses to contextualize a topic, such as a person, event, episode, or issue, within a text transmitted to receivers by means of mediation.” (p.1) In other words, frame is a context in which an information, person or in our case news can be described by the senders of information. Why is it important? The context can change the perception of the information. In our case, the frame can change whether is news considered positive or negative. A classic example was made by Kahneman and Tversky (1981):

“Problem 1 [N = 152]: Imagine that the U.S. is preparing for the outbreak of an unusual Asian disease, which is expected to kill 600 people. Two alternative programs to combat the disease have been proposed. Assume that the exact scientific estimate of the consequences of the programs are as follows:

If Program A is adopted, 200 people will be saved. [72 percent]

If Program B is adopted, there is 1/3 probability that 600 people will be saved, and 2/3 probability that no people will be saved. [28 percent]

Which of the two programs would you favor?

[...]

Problem 2 [N = 155]:

If Program C is adopted 400 people will die. [22 percent]

If Program D is adopted there is 1/3 probability that nobody will die, and 2/3 probability that 600 people will die. [78 percent]

Which of the two programs would you favor? “ (p.453)

Although the same information was displayed in both cases, the context (saving and dying) made a significant difference in subjects' choices. Recontextualization of information or a topic by subtle changes in descriptions or names is also known as slant. Gentzkow and Shapiro (2010) focused on this aspect of framing. In political debates about taxation of real estate, Republicans strategically used the term “death tax”, and Democrats “estate tax”. (p. 35) Media took these terms over in accordance with the political beliefs of local populations: “consumer demand responds strongly to the fit between a newspaper's slant and the ideology

of potential readers, implying an economic incentive for newspapers to tailor their slant to the ideological predispositions of consumers.” (p. 64) These findings suggest that consumer demand and news content influence each other.

1.3 Priming

The topic of priming is deeply researched and may also be fruitful for a proper understanding of news effects. Priming is a memory and behavioural response to new stimuli when the brain processes previous stimuli. Zeigler-Hill and Shackelford (2020, p.335) This phenomenon operates on unconscious level and plays a role in association recollection. (p.335)

The usage of priming can lead to certain behaviours without the subjects noticing, thus it is common in TV programme and advertisements. (Harris et al., 2009, p. 405)

In the experiments of Baumgartner and Wirth (2012), subjects read six different news articles with either negative or positive valence. Initial reading of positive news led to better recall of positive information, while initial reading of negative news of negative.

Berkowitz (1984) finds a link between media events and antisocial behaviours. The wide media coverage of aggression may increase the likelihood of its recollection and lead to antisocial behaviour. Similar (but not the same) effect has been described as a broken windows theory, according to which a longer exposure to neglected surroundings may lead to higher criminality rate. (Harcourt and Ludwig, 2006)

Hertel and Fiedler (1994) report an effect of affective priming on the results of social dilemma game: “The mere priming of semantic categories in a rather unobtrusive verbal learning task is sufficient for a significant increase in cooperation.” (p.141) However, the variability of cooperation of positively primed subjects was higher than negatively primed subjects.

Subjects of Zemack-Rugar et al. (2007) primed to guilt did not notice the emotion but showed an increase of helpful behaviour in comparison to their unprimed colleagues.

Works of Baumgartner and Wirth, and Zemack-Rugar imply that affective priming via news is possible, other mentioned studies suggest, that news consumption may influence various prosocial behaviours.

1.4 Emotivation

Although there are no final and conclusive results of the effects of emotions on decision making, some meaningful insights have been achieved by the research. Considering the nature of negativity bias, and various aspects of the effects of moods on behaviour (in detail in Hertel et al. (2000)), we suppose that the main effect of news may be visible via emotions in the short run, described in a small diagram as:

News → Emotions → Behaviour

Polman and Kim (2013) used a term emotivation “to describe goals that people want to attain when a specific emotion has been activated.” (p.1684) in their study about the influence of anger, disgust, and sadness in public good dilemmas. In three experiments, they show that angry subjects donated less resources to the common pool, whereas disgusted and sad subjects donated more. In a game of taking resources, angry and sad subjects took more, while disgusted took less resources.

Drouvelis and Grosskopf (2016) discovered that angry participants were less likely to contribute during voluntary contributions game and were more likely to punish deviate behaviours than subjects feeling happiness. According to the results of behavioural chicken game experiment of Hertel et al. (2000), “sad and insecure participants exhibited more systematic and rational behaviour, tending to defect when others' cooperation was high, but to increase their investment for the common when others' cooperation was low.” (p.441) The decision latency of sad and insecure participants was also longer in comparison to happy ones. As explained further: “mood per se has no simple or direct effect on cooperation but rather affects how persons decide whether they will cooperate or not.” (p. 459)

According to the research of Cierchia et al. (2021), fear increases cooperation of selfish individuals, whereas anger decreases cooperation. Similarly, while joy does not promote cooperation, pride does significantly. (Dorfman et al. 2014) Experiments of De Hooge et al. (2014), and Griessmair and Hippmann (2022) show an increase of cooperation in subjects feeling guilt, while shame had no significant effect in social dilemma games.

Multiple studies suggest that emotion can also influence interpersonal or institutional trust. Albertson and Gadarian (2015) focused on the role of anxiety in institutional trust. Anxiety may increase trust in politicians or other individuals when they use certainty and control claims about the uncertain situation.

Dunn and Schweitzer (2005) offer a slightly distinct perspective. They distinct between the “emotions with appraisals of other-person control” (p.745) – anger and gratitude, and the emotions with appraisals of personal control – pride and guilt. Following the results of five conducted studies they suggest that happiness increases trust, sadness has a very slight or no effect on trust, and anger decreases trust. Also, the trust differs in accordance with the perceived personal control. “[P]articipants in the gratitude condition were more trusting than were participants in the pride condition, and participants in the anger condition were less trusting than were participants in the guilt condition” (p.745)

In a very instructive analysis, Myers and Tingley (2016) analysed the effect of anxiety on dyadic trust. Their results – anxiety slightly increases interpersonal trust. However, after their application of causal mediation analysis, there was a slight decrease.

According to the findings above, we can hypothesize that news that makes subjects angry may lead to less cooperation, while negative news that makes subjects sad, disgusted, afraid, or guilty may increase it. The feeling of shame doesn’t seem to have any significant effect. Positive emotions except for pride do not seem to increase cooperation. The results may differ in the case of trust. News that elicits negative emotion (anxiety, anger, or sadness) may decrease the levels of trust, while positive news (inducing happiness and gratefulness) may increase it. On the other hand, news often contains information that the readers do not have any control about. This by itself might increase trust, especially after reading positive news.

1.5 Social norms

Cialdini et al. (1990) define injunctive norm as “what most others approve or disapprove”, and descriptive norm as “what most others do“ (p.1015). Borg (2022) found out that the news exposure was positively related to the perception of injunctive norms and negatively related to the perception descriptive norms. Descriptive norms were formed significantly by documentaries, but not by news.

Arias (2019) examined the influence of radio programme about the violence against women in Mexico. Study shows that it increased the rejection of violence against women (injunctive norm), but it also „increased pessimism about whether violence would decline in the future“ (descriptive norm).

In the case of children, Wilson (2008) shows expressions of fear and violence after watching a TV programme containing violence strengthening the position of violence as a social norm. On the other hand, educational content and situational comedies for younger audiences may increase cooperation, altruism, and prosocial behaviour of children.

According to Kepplinger et al.(2012) the news coverage does not seem to have a conclusive effect on recipients' perceptions on events. Furthermore, it seems to be the other way around – the recipients add their own information and interpretations to support their own frameworks.

Corbit (2023) and Fischbacher et al. (2001) show that both children and adults tend to cooperate, when they are confident that other people do so, thus following the descriptive norm.

In the large pool of media research, studies about intricacies of normative effects of news in the short-term are rather scarce. Although the influence of news on the perception of descriptive norms is rather unclear, we expect to see the effect on the perception of injunctive norms.

1.6 Effects of distressing news

The Covid-19 pandemic has brought multiple studies about negative effects of news consumption on mental and physical health. Negative news increase stress. (Huff, 2022) Findings of Hwang (2021) „show that seeking information about COVID-19 was significantly related to emotional distress. Moreover, even after accounting for COVID-19 information seeking, consuming news via television and social media was tied to increased distress, whereas consuming newspapers was not significantly related to greater distress.“

Negative news also amplifies collective traumas. (Holman et al., 2014) Media coverage about Boston Marathon shootings, 9/11 and school shootings affected not only survivors, but also consumers in other countries with acute stress symptoms. Prolonged exposure to media had strong and long-lasting effect on the audience.

TV news with negatively valenced programmes also significantly lower mood and increase personal worries and catastrophising. „Personal concerns that are not specifically relevant to the content of the programme” also increased. (Johnston 2011)

Cooperative patterns of behaviour during distressing events have been researched in the context of the difference in reactions to stress by different females: “fight-or-flight” in men and “tend-and-befriend” in women (Nickels et al., 2017, Zhang et al. 2021) where women turned out to be more cooperative.

Since the literature results are rather inconclusive (considering several aspects of news and behaviour that are described above), we decided to make a survey experiment with multiple treatment groups (for positive, negative, and neutral news) and dependent variables for selected prosocial behaviours (see below).

2 Aim of the work, methodology and methods of research

Following the literature review, the aim of this work was to find a significant effect of negative and positive news on selected prosocial behaviours.

Our main research questions are as follows:

- Does negative news increase prosocial behaviour in comparison to neutral news?
- Does negative news decrease prosocial behaviour in comparison to neutral news?
- Does positive news increase prosocial behaviour in comparison to neutral news?

For our research, we chose only some of prosocial behaviours – trust (Yamagishi and Yamagishi, 1994), helping behaviour/altruism (Nickell, 1998), tolerance for dishonest behaviour (chosen questions from VWS; Inglehart et. al, 2022) and self-categorisation (Schubert and Otten, 2002) serving as a proxy for cooperation. Results of scales measuring these phenomena were used as dependent variables. Further description below.

Our partial research questions focused on several subtasks to answer our main questions.

In the first part – the manipulation check, we assessed whether there is a statistical difference between the intensity of positive and negative affect caused by the different treatments. And if it is so, what are the directions of the differences (e.g. are the negative affects higher in the treatment group with negative news? Does the same apply for positive emotions and positive news?).

The next step of our research consisted of comparable questions and was related to the results of prosocial behaviours scales – our dependent variables. By answering a question: “Is there a difference among prosocial behaviours by treatments?” we selected dependent variables that showed at least some difference. The pairwise tests were used to compare one-sided differences were used in the next step. This procedure allowed us to partially answer our main research questions. However, for a more precise answer, we further focused on relative effects of news by analysing their effect on selected dependent variables using linear regression. Our final partial research question was “Is the effect of news mediated by emotions?” This question follows from our literature review and allows an alternative explanation of the effect of news.

2.1 Treatment groups

The experiment divides (194) subjects into three treatment groups. Each subject is given either negative (71), neutral (61), or positive (62) treatment consisting of 7 short minute-by-minute news for each treatment group. Positive news was meant to elicit pride, hope, joy, gratitude, and satisfaction; for negative news it was emotions of fear, anger, and sadness. Neutral news was a mix of unpersonal, dry or mildly interesting texts. (annex) Both positive and negative treatment have been compared to neutral treatment and serve as independent variables (PT and NT for mediation tests and pairwise test). For linear regression we used variables Positive and Negative, where the positive news group is assigned a value of 1 and negative and neutral news group is assigned value 0. Analogically for variable Negative and negative news group. More in Table 1.

2.1.1 Positive and negative affect scale (PANAS)

As a manipulation check we used a 20-item scale called PANAS. PA means positive affect and NA negative affect. As Watson et al. (1988) show in their study, emotional affects are connected to many mutually exclusive and independent human behaviours. News often serves to report various pleasant or unpleasant events, which is why PANAS was a natural choice. The scale allows subjects to be asked about their feelings in the past, in a current day or at the moments, which exactly fits our purposes – to find the affective effect of news. For each question describing an emotional state, the subjects can pick one of five answers about the intensity of an emotional state from “very slightly or not at all” to “extremely.” Questions about PA and NA are summed up separately, each of them is then averaged by the number of questions. The range of our variables is then from 1 to 5.

2.2 Dependent variables

After the treatment and manipulation checks followed 4 sets of questions (GTS, HAS, OSIO and ANTI) each for one of investigated prosocial behaviours. These served as our dependent variables in regressions. For a closer look:

2.2.1 General Trust Scale (GTS)

This scale was originally used by Yamagishi and Yamagishi (1994) to compare levels of general trust and commitment of citizens of the USA and Japan. The 6-items questionnaire consists of questions and is aimed at trust toward others. The values of our variable GTS are calculated as an average of the sum of the scores of each question. Answers from “strongly agree” to “strongly disagree” were based on five-item Likert scale.

2.2.2 Helping Attitudes Scale (HAS)

A choice of this scale was determined by the nature of other altruism scales - referring mostly to the past. Helping Attitudes Scale (Nickell, 1998), on the other hand, calculates a score based on beliefs, and observations about one’s behaviour mostly formulated in the present or future tense. The wording of questions allows more sensitive reactions to treatments. HAS is a 20-item scale with 5 possible answers of Likert scale – from “strongly agree” to “strongly disagree”. Usually, an overall score is calculated by addition of each answer (1 to 5) with a maximum of 100, and a neutral score of 60. For our purposes, we used averaged scale with a maximum of 5, and neutral score of 3.

2.2.3 Tolerance of dishonest behaviour (ANTI)

This scale is made of five questions from WVS (World Value Survey) 1981-2022. The respondents can choose from ten answers ranging from “always perfectly forgivable” (1) to “unforgivable” (10). The topics of questions mainly include dishonest economical behaviour e.g. tax evasion, bribery, and free riding. Sum of the answers is averaged by the number of questions, with maximal score of 10 and minimum of 1.

2.2.4 Overlap of Self, Ingroup, and Outgroup Scale (OSIO)

A graphical measure (Schubert and Otten, 2002) usually serving for individual self-identification by expressing a perceived distance between ingroup (“us”) and outgroup (“them”) (IOval) of a respondent, distance between “self” and ingroup (SIval) and between “self” and outgroup (SOval) in 3 pictorial questions. (annex) Minimal value for each answer is 1 meaning a “maximal distance”, maximal 7 meaning “full overlap” or “unity”. Closer distances (higher values) may indicate a stronger tendency to cooperate.

2.3 Control variables

The final part of the questionnaire consisted of questions about variables which could interfere with the effects of treatments (namely Age, Female, Educ, SumNews and Religion).

2.3.1 Age

Higher age tends to increase prosocial behaviour. As Rosi et al. (2019) and Mayr and Freund (2020) show in their studies, older adults tend to behave on average in a more prosocial way than younger adults both in charitable donations and volunteering.

2.3.2. Gender

Gender differences may also have an effect. Female respondents tend to be more susceptible than male respondents to social framing. (Espinosa and Kovařík, 2015). The in-depth analysis of Eagly (2009) shows that the types of prosocial behaviours differ in accordance with norms about genders – while women tend to express more helping behaviour to their closer ones, men tend to be more helpful to strangers.

2.3.3. Education Attainment

Education attainment is also a factor that influences prosocial behaviours. As shown in Bekkers (2004) and Westlake et al. (2019), unconditional helping behaviour is more common among highly educated people. On the other hand, effects of education on generalised social trust seem to be also positive, but small not statistically significant. (Österman, 2021)

2.3.4. Time spent by consuming news

Concluding from works of Holman et al. (2014) and Johnston (1997), high amount of exposure to news may increase personal worries and emotional distress. This is a reason we also included a variable about daily news consumption across mostly used media. Increased news exposure in long term may amplify the behaviour connected to the negative news treatment.

2.3.5. Religion

Religion, our last used control variable, seems to be strongly connected to helping others. Although the helping attitudes couldn't be displayed in our experiment in any other way than by a self-report using Likert scale, study of Einolf (2011) suggests a link between practice of religion and helping attitudes: "People who explicitly connected their religious beliefs with helping others were more likely to help others." (p.446). Thus, we consider controlling the samples for religious beliefs as reasonable.

Variable	Values	Description
Treatment	0 – neutral, 1- negative, 2- positive	Variable describing a type of message given to subjects. These were selected in dependence on the time the subject responded.
Negative	0 -neutral and positive, 1-negative	Variable describing a type of messages given to subjects.
Positive	0 -neutral and negative, 1-positive	Variable describing a type of messages given to the subject.
PA	1 to 5	Average values of positive emotion intensities on the positive and negative affect scale (PANAS).
NA	1 to 5	Average values of negative emotion intensities on the positive and negative affect scale (PANAS).
GTS	1 to 5	Average values of responses on the General Trust Scale.
ANTI	1 to 10	Average values of responses to questions about tolerance of antisocial behavior (from WVS Database).
HAS	20 to 100 as a sum, averaging 1 to 5	Average of total sum of responses in the Helping Attitudes Scale (HAS). Neutral score for sum is 60, for average is 3.
IOval	1 to 7	Expression of social "closeness" to the "ingroup" and "outgroup" (OSIO).
SIval	1 to 7	Expression of social "closeness" of the individual to the "ingroup"(OSIO).
SOval	1 to 7	Expression of social "closeness" of the individual to the "outgroup"(OSIO).
Age	1 to 99	Age.
Female	0 - male, 1 - female	Variable describing gender of the respondent.
Educ	0 - none to 6 – PhD. and higher	Highest education level achieved. 4,5,6 for academic education, 2 and 3 for accomplished high school
SumNews	optional (0 to 24)	Total time spent watching and listening to news across media (television – (TVNews), radio (RadioNews), social platforms (SocPlat), other internet sites (OnliNews) and podcasts(PcastNews) per day.
Religion	0 - no, 1 - yes	Variable describing expression of individual's religious faith.

Table 1 - Description of used and collected variables

2.4 Quantitative methods

To answer our research questions, we used following statistical methods:

2.4.1 Analysis of variance and t-test

Analysis of variance (ANOVA) is a statistical method that compares the means of more than two groups. Its null hypothesis assumes that the means of groups are on chosen level of confidence equal, while the alternative hypothesis assumes at least one statistically different mean. Its prerequisites are normal distribution of the values, homogenous variances, and independence of observations. These were tested by graphical analysis; homogeneity of variances was tested by Bartlett's test. (annex) ANOVA uses F-test with Fischer-Snedecor distribution and test statistic calculated as:

$$F = \frac{\text{between - group variability}}{\text{within - group variability}}$$

Or in a more technical way:

$$F = \frac{\sum_{i=1}^k n_i (\bar{Y}_i - \bar{Y})^2 / (K - 1)}{\sum_{i=1}^K \sum_{j=1}^{n_i} (Y_{ij} - \bar{Y}_j)^2 / (N - K)}$$

where K is a number of groups, \bar{Y} stands for overall average of the data, N is the total number of data, n_i denotes the number of observations for i^{th} group and Y_{ij} stands for the j^{th} value of i^{th} group. $(K-1)$ and $(N-K)$ denote the degrees of freedom for Fischer-Snedecor distribution. (Kenton, 2024)

Although the method detects the inequality between means, it does not show what groups are the case. Since our aim was to find out the effects of negative or positive news, we compared treatment groups to group reading neutral news and did not compare them between each-other. T-tests served for this purpose.

T-tests are similar to ANOVA, but for two or one group(s) only. Their prerequisites are the same as ANOVA-s: normal distribution of data, homogeneity of variance and independence of observations and appropriate sample size. Its null hypothesis assumes the equality of means. Since our research questions are about the increase or decrease of expressed prosocial behaviours and our sample sizes are not equal, we use one-tailed versions of the pairwise t-test for unequal sample sizes with alternative hypotheses about higher or lower means. T-tests use Student distribution and test statistic calculated as:

$$t = \frac{\text{difference in means}}{\text{standard error}}$$

Or in a more technical way:

$$t = \frac{\mu_1 - \mu_2}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}}$$

where μ_i stand for the expected value (or mean) of i^{th} variable, n is the number of observations and σ_i^2 stands for variance of i^{th} sample set. The degrees of freedom for Student distribution were calculated as $df=n_1+n_2-2$. (Hayes, 2023)

The weaknesses of ANOVA and t-test are (among others) sensitivity to outliers and the normal distribution assumption. Because this assumption was not met in some cases (annex), we used non-parametric tests instead.

2.4.2 Kruskal-Wallis test and Mann-Whitney-Wilcoxon U test

Kruskal-Wallis (KW) test and Mann-Whitney (MW) U test are non-parametric alternatives to ANOVA and t-test. Although they release the restriction of normal distribution of data and are due to the rank-sum method resilient to outliers, they are not free of prerequisites and disadvantages.

The assumptions of KW and MW tests are – ordinal or continuous response variable, similar distribution of sample sets, and independence of observations. (Bobbit, 2019) Due to the nature of our questions in the survey and due to the results of graphical test (annex), we assumed that these methods may be more suitable for some of our variables.

Both tests assign a rank (from the lowest to the highest) for each value in all sample sets. The ranks are then summed-up for each sample set. The mean rank sums of the sets are then compared to expected value of the rank sums with the help of test statistic H , which allows us to infer probability of null hypothesis by comparing the H -value to χ^2 distribution. The null hypothesis of the tests: rank sums do not differ between groups, the alternative hypothesis: there is at least one different:

$$H = \frac{12}{N(N+1)} \sum_{i=1}^k \frac{R_i^2}{n_i} - 3(n+1)$$

where n is the number of all observations, i denotes a group, n_i denotes a number of observations within the i^{th} group, k is the number of groups and R_i stands for the rank sum of i^{th} group. Degrees of freedom for χ^2 distribution are calculated as $k-1$.

On our case, Kruskal Wallis test compares three groups, but does not say, what group is different. For this reason, we use Mann-Whitney test. The pairwise MW test allowed us to compare two groups – negative news and positive news group to neutral news group. The principles of MW test are similar to KW test, with the analogous hypotheses for two groups. A main downside of this test, in comparison to the t-test is the absence of analogy to the one-tailed test hypotheses. On the other hand, graphical clues such as boxplots and graphs of distributions of the sample sets gave us clear clues about the differences.

2.4.3 Linear regression (OLS)

We used linear regression to find out whether the differences between treatment groups and control group are caused by our news or by other attributes of the samples. This method also allowed us to calculate relative effects of news. It is described by formula:

$$Y_i = \beta_0 + \beta_1 * x_1 + \beta_2 + \dots + \beta_n * x_n + \varepsilon$$

where Y_i stands for dependent variables and n for the number of independent variables. Betas are regression coefficients for independent variables and are estimated by the ordinary least squares method (OLS). The sign ε stands for error term or residual and is “defined as the difference between the observed values of Y_i and fitted values generated by” (Angrist and Pischke, 2014, p.63) our regression model. Substituting for our variables:

prosocial behaviour

$$= \beta_0 + \beta_1 * \text{Negative} + \beta_2 * \text{Positive} + \beta_3 * \text{Age} + \beta_4 * \text{Female} + \beta_5 * \text{Educ} + \beta_6 * \text{SumNews} + \beta_7 * \text{Religion} + \varepsilon$$

where β_1 and β_2 are regression coefficients for our treatment variables Negative and Positive, β_0 is the intercept (value of the dependent variable when all other explaining variables are equal zero), and other betas show the marginal effects of our control variables on the values of dependent variable.

The simplest version of linear regression $Y_i = \beta_0 + \beta_1 * x_i + \varepsilon$, can be formulated as a minimalization problem (see Emerick, 2011):

$\min S(\hat{\beta}_0, \hat{\beta}_1)$, while:

$$S(\hat{\beta}_0, \hat{\beta}_1) = \sum_{i=1}^n (Y_i - \hat{Y}_i)^2 = \sum_{i=1}^n (Y_i - \hat{\beta}_0 - \hat{\beta}_1 * x_i)^2$$

Where the OLS calculates the fitted regression coefficients ($\hat{\beta}_0$ and $\hat{\beta}_1$) by minimizing the sum of the squares (S) between the values generated by independent variable (\hat{Y}_i) and observed values of dependent variable (Y_i).

The formula for the calculation of the of the regression coefficient for the independent variable of our minimalization would be:

$$\hat{\beta}_1 = \frac{\sum_{i=1}^n (x_i - \bar{x})(Y_i - \bar{Y})}{\sum_{i=1}^n (x_i - \bar{x})^2}$$

where \bar{x} is the mean of values of the independent variable and \bar{Y} is the mean of values of the dependent variable.

2.4.4 Mediation analysis

Mediation analysis is a part of larger statistical field called structural equation modelling (SEM). SEM is commonly used in social sciences and “enable(s) researchers to simultaneously model and estimate complex relationships among multiple dependent and independent variables.” (Hair et al., 2022)

The linear regression was used to estimate the effect of emotionally charged news (N) on selected prosocial behaviours (B) (Diagram 1).



Diagram 1 - Scheme of analysis of the effects of news (N) on behaviour (B)

With mediation analysis, we analyse whether (and to what extent) is the effect of news mediated by emotion affects (E). (Diagram 2)



Diagram 2 - Scheme of the analysis of the effects of news (N) on behaviour (B) mediated by emotions (E)

For a concise introduction to the intricacies of the mediation test, we use the slightly altered interpretation of the Baron and Kenny's approach (1986) by Mehmetmoglu (2018, p. 64). The approach to mediation analysis consists of four steps and of Sobel's (1987) z-test described below.

“Step 1: Regress Y on X to estimate path c , which must be statistically significant implying that there is an effect to be mediated (Diagram 3(a))

$$Y = \beta_0 + cX + \varepsilon. \quad (1)$$

Step 2: Regress M on X to estimate path a , which must be statistically significant providing evidence of a relationship between the independent and mediator variable. (Diagram 3 (b))

$$M = \beta_0 + aX + \varepsilon. \quad (2)$$

Step 3: Regress Y on M (by controlling for X) to estimate path b , which must be statistically significant. X is controlled for as Y and M may be correlated because X causes both (Diagram 3(c)). This estimation provides us with path c' as well.

$$Y = \beta_0 + bM + c'X + \varepsilon. \quad (3)$$

Step 4: Path c' must be zero, as a situation indicating that the magnitude of path c' is reduced to zero after controlling for mediator.

If all the four steps above are met, then one can claim that M *completely* mediates the relationship between X and Y . However, if the first three steps are met but the step 4 is not met, one can assert that M *partially* mediates the relationship.”

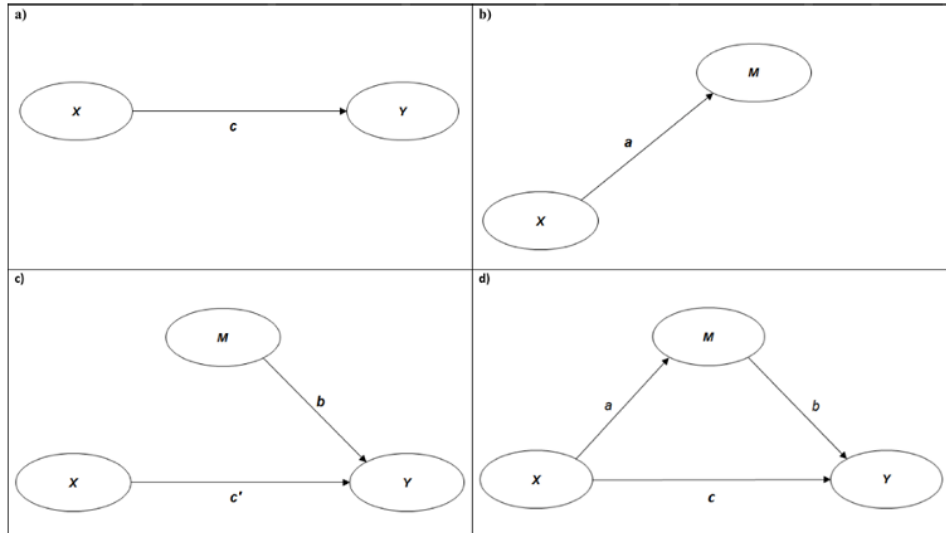


Diagram 3 - Scheme of Baron and Kenny's mediation analysis, Source: Mehmetoglu (2018)

The statistical significance of mediation is calculated by Sobel's z-test with the test statistic:

$$Z = \frac{a*b}{\sqrt{b^2s_a^2+a^2s_b^2}}$$

where a and b are paths, and s_a^2 and s_b^2 are standard errors of those paths. The test statistic is compared to the values of normal distribution, usually on the 5 % level of confidence.

2.4.5 Boxplots

For description of our data, we used boxplots. Vertical lines of boxplot show (from the bottom-up) the lowest value, the 1st quartile (lowest 25 % values), the 2nd quartile also called median or the middle value (50 %), the 3rd quartile (75 %) and the 4th quartile (100 %), and outliers.

The “box” describes interquartile range (from the 1st to the 3rd quartile) that encapsulates the values of the middle 50% of data, while whiskers (the vertical thin lines) show the values of lower and higher quartile. The upper boundary for outliers is calculated as $Q_3 + (Q_3 - Q_1) * 1,5$, the lower one $Q_1 - (Q_3 - Q_1) * 1,5$.

3 Results

With a set of 194 observations – 61 for neutral (control) group and 71 for negative and 62 for positive treatment group – collected via social networks and analysed with multiple methods, we achieved following results. Detailed information about quartiles of boxplots, graphical tests or information about scale scores by gender or by treatment groups are available in annex.

3.1 Descriptive statistics

In this part, we focus on demographic information and media usage habits, other descriptive statistics are available in annex.

Who were our respondents and how much attention do they spend to news across various platforms? Women (116) made 60 % of our dataset, men (78) 40 %. Median age was 26 years for men and 24 years for women. Annex for more statistics about gender differences.

132 (68 %) respondents achieved bachelor's degree or higher, 62 (32%) successfully accomplished high-school education. More than one third (69) of all respondents practiced some kind of religion.

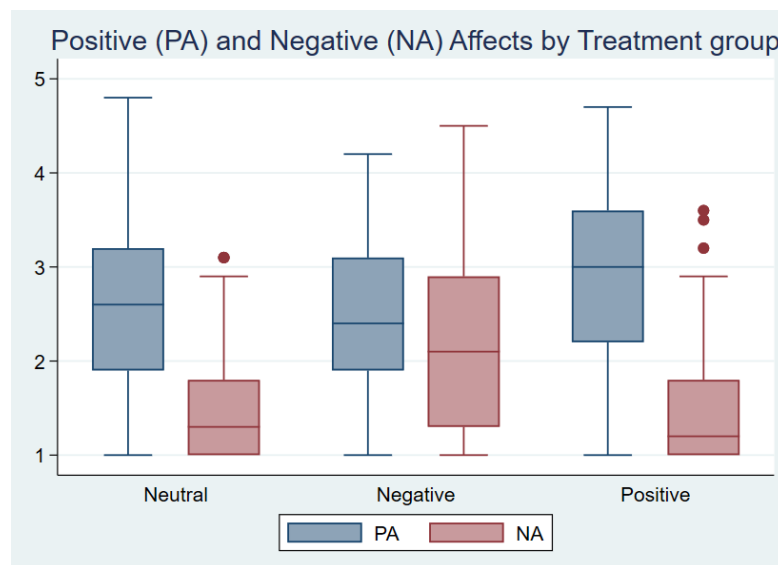
The most followed stream of news comes from social networks. Average woman spends exposed to news on social media almost 1 hour and 27 minutes hours, while average man slightly more than 1 hour and 20 minutes. For other on-line news: 58 minutes for men and 37 minutes for women. Highest achieved education seems to change the amount of time spent by consuming news on social platforms (1 hour and 28 minutes for the highly educated and 1 hour and 20 minutes for high school accomplishers) as well as time spent with other on-line news: (49 minutes for highly educated and 32 minutes for high school accomplishers).

Podcast news seems to be popular as well – the average daily intake of podcast news was 34 minutes for men and 33 minutes for women, 30 minutes for highly educated and 41 minutes for high school accomplishers. Median answer about time spent following news on both social platforms and other on-line news was 1 hour. Independent of gender or highest achieved education, our respondents did not spend more than 20 minutes watching television news or listening to radio news on average. Median time spent by watching TV news or listening to radio news was for both sexes and all achieved education levels.

3.2 News and emotional response (manipulation check)

Starting with descriptive statistics, the average value of positive affect intensity was 2,62 (standard deviation (SD)=0,85) for neutral treatment group, 2,53 (SD=0,79) for negative news and 2,86 (SD=0,9) for positive news. The highest value for each was 4,8 for neutral, 4,2 for negative and 4,7 for positive. The lowest average value for each treatment was 1. Medians of positive affect by treatment (the horizontal line in the box) was 2,6 for neutral treatment, 2,4 for negative and 3 for positive treatment group. Both median and mean values are the highest in positive treatment group.

The mean intensity of negative affect was 1,5 (SD=0,56) for our control group, 2,24 (SD=0,96) for negative news treatment group and 1,54 (SD=0,68) for our positive news treatment group. The highest value for each were (from neutral to positive treatment) 3,1; 4,5; and 3,6. Medians 1,3; 2,1 and 1,2. The negative news group as the highest average and median values of negative affect, while the positive news group has only a slightly lower values of those statistics than neutral group.



Graph 1 – Box Plots: PANAS results (manipulation check).

3.2.1 Results

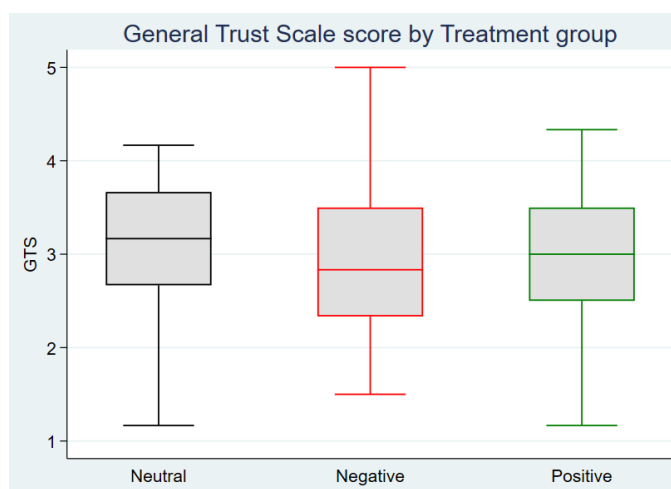
As shown higher, the emotional states of our respondents vary by news treatment groups. The difference was insignificant in ANOVA test for positive affect ($p=0,07$), but significant in Kruskal Wallis test for negative affect ($p=0,0001$). These tests were chosen according to distributions of data (annex).

To answer the question whether the manipulation checks worked as intended, we used pairwise tests. The mood (NA) of readers of negative news was significantly worse than those with neutral news ($p=0,0001$). Although our MW test showed only statistical significance of difference in samples, the difference is visible on Graph 1. Negative affect of readers of positive news did not significantly differ from the control group ($p=0,817$). On the other hand, the positive affect (PA) elicited by positive news in comparison to neutral was statistically almost significant ($p=0,0596$), while the intensity positive affect of negative news was not ($p=0,279$ for higher positive affect and $p=0,721$ for lower positive affect).

Our results show that news may elicit emotions and that our selection of short news partially fulfilled its intended role as manipulation check. As shown in the literature review, news carries not only emotional charge, but also information that can potentially influence the behaviour (In the following parts, the effects on prosocial behaviours are presented.

3.3 General Trust Scale

The average of general trust score for neutral (control) treatment group was 3,13 (SD=0,64), for negative treatment group 2,9 (SD=0,73) and for positive 2,94 (SD=0,72). Median values were, correspondingly to the order of treatments on the graph 3,17; 2,83 and 3,00. From the interpretation standpoint, people on average neither explicitly trust nor distrust others. The maximal values for each treatment group 4,17; 5 and 4,33 and minimal 1,17; 1,5 and 1,17. According to our statistics, the positive group has a slightly lower tendency to trust people than the control group.



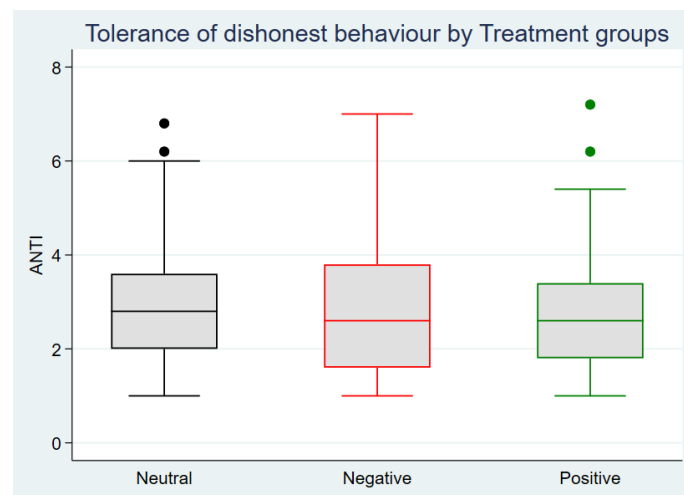
Graph 2 - Box Plots: General Trust Scale (GTS) by Treatment group

3.3.1 Results

The results of ANOVA for comparisons of the means show, that the difference among each of them is statistically insignificant ($p=0,14$). For the pairwise comparisons, the positive treatment group does not show higher tendency to general trust in comparison to the control group (0,94). Similarly for negative news treatment group (0,93). However, the group with negative news seems to trust significantly ($p=0,0297$) less than the control group.

3.4 Tolerance of dishonest behaviour

From the first sight (Graph 3), the tolerance of dishonest behaviour seems to be unaffected by the treatments. The mean values of the ANTI variable expressed by neutral group were 2,94 (SD=1,41), in negative news group 2,95 (SD=1,51) and in positive 2,68 (SD=1,31). The highest tolerance score was achieved by a respondent in positive group (7,2), slightly lower was in negative (7) and in neutral (6,8). Median values of this variable were from neutral to positive: 2,8; 2,6; 2,6, which could be interpreted that the middle person of the sample sets tends to consider the mentioned dishonest behaviours as closer to unforgivable.



Graph 3- Box Plots: Tolerance of dishonest behaviour (ANTI) by Treatment group

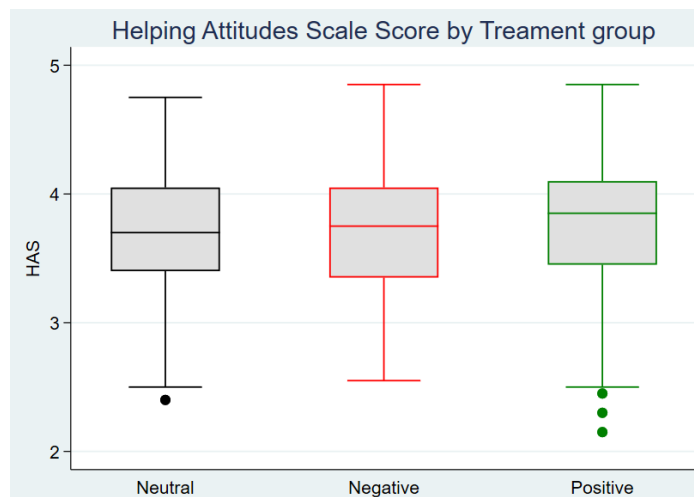
3.4.1 Results

Neither Kruskal Wallis test ($p=0,522$), nor pairwise MW tests ($p=0,287$ for positive to neutral news and $p=0,93$ for negative to neutral) show any statistical significance of difference between samples.

3.5 Helping Attitudes Scale

Similarly to the Tolerance of dishonest behaviour scale, the boxplot of HAS (Graph 4) does not show any remarkable difference between treatment groups. The average value for helping attitudes was 3,66 (SD=0,52) in neutral news group., 3,7 (SD=0,48) in negative news group and 3,75 (SD=0,58) in positive news group. Maximal values for each group were 4,75 for neutral, and 4,85 for both negative and positive. Median values – 3,7; 3,75; and 3,85 for the treatments from right to left (Graph 4).

Interestingly, while authors of the scale report that the standard average scale score is 3 points per question (60 of 100 points as a sum), our respondents seem to report higher helping attitudes in all groups. Additionally, while the minima were close to 1 (or exactly 1) on all other scales, on this scale they are 2,4 for control group; 2,55 for negative and 2,15 for positive treatment groups.



Graph 4 - Box Plots: Helping Attitudes Scale (HAS) by Treatment Group

3.5.1 Results

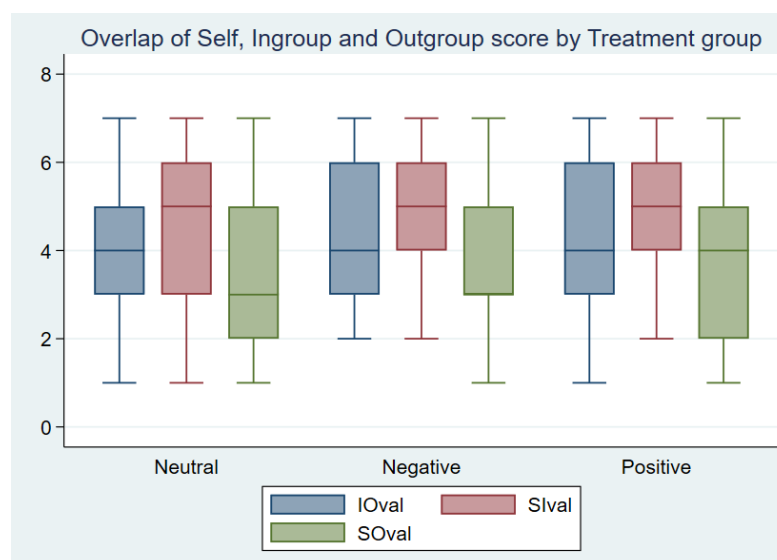
The results of ANOVA do not show any significant difference between means of each group ($p=0,63$). For one-tailed pairwise t-test – helping attitudes were not significantly higher than the positive news group than the attitudes neutral news group ($p=0,18$). Similarly, the group reading negative news did not express any significantly higher ($p=0,32$) or lower ($p=0,68$) helping attitudes.

3.6 Overlap of Self, Ingroup, and Outgroup scales

The descriptive statistics of our only pictorial measures (annex) are as follows: the average value of perceived Ingroup-Outgroup overlap was 4,13 (SD=1,81) for neutral news, which means “minor overlap”. Similarly, the average values for negative news and positive news were: 4,31 (SD=1,63) and 4,26 (SD=1,8). The median value of this scale part was 4 for all treatment groups. The maximum value was 7 meaning “full overlap” or “unity” for all treatment groups, the minimum value was 1 (maximal distance) for neutral and positive group, and 2 for a group with negative treatment.

The means of perceived Self-Ingroup overlap were by news emotional valence 4,59 (SD=1,57) for neutral, 4,73 (SD=1,4) for negative and 4,85(SD=1,57) for positive. All of these could be rounded upwards and called “moderate overlap”. Indeed, the median value of this variable for all treatment groups was 5. Maximal value for all groups was 7, while minimal was 1 for the control group and 2 (“moderate distance”) for other treatment groups.

For the Self-Outgroup overlap, the average value by treatment group correspondingly to Graph 5 were 3,52 (SD=1,69), 3,76 (SD=1,53) and 3,74 (SD=1,76). The median value for neutral and negative news was 3 “marginal distance” for neutral and positive news and 4 for positive news. Maximal value for all treatments was 7, minimal 1.



Graph 5 - Box Plots: Overlap of Self, Ingroup and Outgroup (OSIO) by Treatment group

3.6.1 Results

Although there are differences in medians visible mainly by the overlaps of Self and Outgroup, they are not statistically significant by Kruskal Wallis test ($p=0,638$). Similarly,

no significant difference between the treatment groups in the overlaps of Ingroup and Outgroup (p=0,8915) and in the overlaps of Self and Ingroup (p=0,649).

3.7 Linear regressions (OLS)

In this part, we analyse which of our variables had an influence on the general trust scale and helping attitudes scale score.

3.6.1 News and general trust

VARIABLES	(1) GTS	(2) HAS
Positive	-0.187 (0.121)	0.128 (0.0914)
Negative	-0.198* (0.118)	0.0646 (0.0886)
Age	-0.00344 (0.00630)	0.0104** (0.00474)
Educ	0.181*** (0.0539)	0.0610 (0.0406)
Female	-0.225** (0.0994)	0.186** (0.0749)
SumNews	-0.0372** (0.0188)	-0.0304** (0.0142)
Religion	0.147 (0.101)	0.0591 (0.0760)
Constant	2.689*** (0.262)	3.072*** (0.197)
Observations	194	194
R-squared	0.132	0.107

Table 2 - Results of linear regression (OLS)

The regression on general trust scale score with news treatments ($R^2 =$; $F(7, 186)=4,05$; $p=0,004$) was described by formula:

$$\widehat{GTS} = \hat{\beta}_0 + \hat{\beta}_1 * Negative + \hat{\beta}_2 * Positive + \hat{\beta}_3 * Age + \hat{\beta}_4 * Female + \hat{\beta}_5 * Educ + \hat{\beta}_6 * SumNews + \hat{\beta}_7 * Religion$$

Positive news decreases the score of general trust scale, on average, by 0,187 points (p=0,124). Negative decreases the score, on average, by -0198 (significantly, on the 10 % level of confidence – p=0,095). Each additional year of age decreases the score on average by -0,0034 points (p=0,585). Each additional level of education increases the general trust scale score in average by 0,181. This effect is significant on the 1 % level of confidence (p=0,001). Additionally, gender has a significant (p=0,025) effect as well. Being a woman decreases the average score by 0,225 points on average.

Each additional hour spent by consuming news decreases the GTS score on average by 0,037 points (p=0,049). Religion practice increases this score on average by 0,147 points (p=0,146).

3.6.2 News and helping attitudes

The linear regression on helping attitude scales was (adjusted $R^2 = 0,1068$; $F(7, 186) = 3,18$; $p=0,0034$) was described by formula:

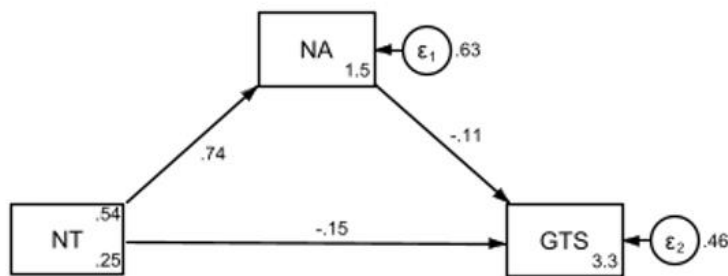
$$\widehat{HAS} = \hat{\beta}_0 + \hat{\beta}_1 * Negative + \hat{\beta}_2 * Postive + \hat{\beta}_3 * Age + \hat{\beta}_4 * Female + \hat{\beta}_5 * Educ + \hat{\beta}_6 * SumNews + \hat{\beta}_7 * Religion$$

Positive and negative treatments are both statistically insignificant. Positive news increases the score by 0,128 points, negative by 0,646 points on average. The variable Age is significant on the 5 % level of confidence ($p=0,03$). Each additional year of age increases the HAS score by 0,0103 points on average. For the variable Educ ($p=0,135$) – each additional level of education achieved increases the average HAS score by 0,061 points. Women are on average more prone to help (0,186 points) than men ($p=0,014$). Each additional hour of news consumed decreases the helping attitudes on average by 0,03 points ($p=0,003$). The practice of religion increases the expressed helping attitudes by 0,059 points ($p=0,438$).

Due to the significant effect of negative news on prosocial behaviour (expressed general trust), we continue further with the mediation analysis of this effect.

3.8 Mediation analysis

The path coefficients for our mediation analysis are as follows: $a=0,74$; $b=-0,11$ and $c'=-0,15$. Numbers in the corners are values of the constants from regressions. ϵ_1 (0,63) and ϵ_2 (0,46) are error terms. NT stands for “negative treatment and its values are 1 for negative news and 0 for neutral news”.



Graph 6 - Mediation analysis of the effect of negative news (NT) on general trust scale (GTS) score via negative emotions affect (NA)

Our analysis did not show any mediation effect. Although is the effect of negative news on the average GTS score significant ($p=0,087$, from linear regression) and the direct effect of neutral news on negative affect as well ($p=0,000$), there is no significant effect of negative emotion ($p=0,135$) on the average GTS score. Since one of the paths a or b (or both) is not significant, the Sobel test is not needed. Concluding, there is no mediation caused by negative emotions between our sample of negative news and the average general trust score. Thus, the effect of negative news seems to be mediated by perceived descriptive norms (information about the misuse of trust may decrease human trust in general).

3.9 Additional findings

This subchapter stands outside of our research questions and serves to share and comment our notions about selected interactions between our control variables and dependent variables across all treatment groups.

3.9.1 Religion and helping attitudes

The findings about our control variables from our linear regression and descriptive statistics seem to interact with some of the findings of experts. 1. Religion practice does not seem to play a significant role in the linear regression of neither general trust scale nor helping attitudes scale. This is interpretable by Einolf (2011) and his observations, that religion practice may not necessarily be connected to helping attitudes, but to other aspects of behaviour and convictions such as religious morality or identity. (p. 441) On the other hand, as shown in annex, our sample of respondents expressed higher average helping attitudes than non-religious respondents. Interesting comparison of average values is also in the tolerance of dishonest behaviours scale, where religion practitioner labelled various economic antisocial behaviours as less excusable than the non-religious respondents. Both differences are not statistically significant. ($p=0,21$ for HAS and $p=0,47$ for ANTI)

3.9.2 Gender differences and prosocial behaviour

A striking contrast across all values of dependent variables is visible for variable Female. Not only by being significant in the explanation of our variables HAS and GTS, but also by the notions in accordance with the findings of The Eagly (2009). For the general trust scale, women tend to score significantly ($p=0,012$) lower than their male counterparts. analogically, there is a significantly ($p=0,0175$) higher score in the helping attitudes score. Although no significant difference in the tolerance of dishonest behaviour was found, the averages of women were slightly higher (annex). Interestingly, a statistically significant difference of perceived distance between self and ingroup ($p=0,0009$) was found, where women of our dataset selected larger distances than men. (annex) Noteworthy is also a difference in selected distances between self and outgroup ($p=0,09$) with similar contrast in averages. According to Eagly, women tend to express more prosocial behaviour to their closer ones. This seems to be the case due to higher average HAS score, lower average GTS score and longer reported distances in our dataset. On the other hand, men are more prone to help strangers. Of course, one could object, that there was an uneven distribution of men and women between treatment groups. As Table 3 shows, rightfully so – the positive news group has the most balances women-to-men ratio. However, there were only slight differences in the scores between the averages of neutral and positive news group. (annex)

Treatment	Female	Male	% Female	% Male
Neutral news	38	23	62,30	37,70
Negative news	45	26	63,38	36,62
Positive news	35	27	56,45	43,55

Table 3- Ratio of male and female respondents by treatment group

3.9.3 News media outlets

Because of the statistical significance of the average daily time spent by consumption of news, we made a correlation and regression analysis about different types of media and the prosocial behaviour scales values.

Correlations - news consumption by type and scale results								
	PA	NA	ANTI	GTS	HAS	IOval	SOval	Sival
SocPlat	0,0713	0,1118	0,0488	-0,1241	-0,1007	0,078	0,0632	0,0146
OnliNews	0,0309	-0,0545	-0,0131	-0,0038	-0,124	-0,0098	-0,0102	-0,0191
TVNews	0,0146	-0,0278	-0,0502	-0,1489*	-0,1167	-0,1141	-0,021	0,0101
RadioNews	-0,0277	-0,0245	-0,0935	-0,0647	-0,132	-0,107	-0,0992	-0,0228
PcastNews	0,1846*	0,1821*	0,012	-0,0999	-0,0138	-0,0241	0,0516	-0,0182

Table 4 - Correlations between news media consumption and behaviour scales

As shown in Table 4, only one correlation is statistically significant – the weak negative correlation between the general trust scale score and hours spent by watching television news. All other correlations for both GTS and HAS appear to be also negative. Do less trusting or less helpful people consume more news or vice versa? Although both may be true, our findings in Table 2 indicate the opposite direction of causality. To prove that we try another linear regression with chosen news media variable. But first we should answer a question if there is a news outlet that could explain the effect without interfering with the others.

Correlations - news consumption by type of media					
	SocPlat	OnliNews	TVNews	RadioN~s	PcastN~s
SocPlat	1	0,3597*	0,2460*	0,1542*	0,1328
OnliNews	0,3597*	1	0,2560*	0,2915*	0,1841*
TVNews	0,2460*	0,2560*	1	0,3056*	0,0531
RadioNews	0,1542*	0,2915*	0,3056*	1	0,0324
PcastNews	0,1328	0,1841*	0,0531	0,0324	1

Table 5 - Correlations between news consumption by media outlet

The significant weak correlation between all types of news media outlets (except podcasts) suggests that consumers of news from one type of outlet will also consume news from

another one. Similarly, the news avoiders may somewhat likely avoid all types of media. The strongest correlation is explainable very naturally – those who read news on social platforms may get caught by an eye-catching image or sentence and read more on the news sites. The reverse path also makes an intuitive sense – readers of news on other than social platform sites, may want to share the news and stay there for more. The second strongest correlation between radio news and television news may be explained by the always-turned-on radio in work and television news consumption in the free time.

Since news podcasts are the least correlated with all of the other media and TV news the most, we chose these two variables for our regression analysis. And indeed, each hour of TV news consumed decreased the helping attitude scale score on average by 0,116 ($p=0,06$). Podcast news caused only marginal differences (annex). Analogically, for radio news, each additional hour decreased HAS on average by 0,13 points ($p=0,046$). For a complete picture, 45 respondents of our sample consumed television news and 54 listened to radio news, while only 20 respondents consumed news from both media outlets. No significant effects were found for any single media outlet on GTS.

4 Discussion

Starting with our main result – the significant effect of negative news on generalized trust seems to correspond with the findings of Hornstein et al. (1975) and Han et al. (2018). The depiction of negative aspects of life, especially the violence of trust, seems to decrease trust in readers. This seems to apply for television news, video content and short news. The expressed values in questionnaire may differ from the action in a laboratory setting (which may differ from the real-world setting). That was a reason why we propose a laboratory experiment (further described below). From the perspective of emotivation – the mediation analysis did not show (in comparison to Myers and Tingley (2016) or Dunn and Schweitzer (2005)) the effect of emotions on trust (in our case measured by survey)

Concerning positive news effects and prosocial behaviour, opposingly to the assumptions of Fišar et al., (2021), the recipients distinguished very clearly between the negative and neutral news. Although, in reality, the news outlet combines news of various emotional charges, and that positive and neutral news may elicit weaker emotional affects than the negative news (due to the negativity bias). Naturally, a topic and frame of news play a vital role as well. A tragic event can be described as a heroic story about cooperation and resilience of humankind against adversity, or as a sharp depiction of rough reality. This leads to a question about proper framing and emotional charge of communication for humanitarian campaigns and charities.

Should the stories for charity collections emphasize the adversities or the overcoming of them? And what about television news? Does the willingness to contribute to a noble cause differ when the challenge to contribute comes after negative or positive news? Although using short minute-by-minute text news, our results do not indicate any meaningful difference. At least not by the statistical significance of our helping attitudes scale score - median and average values for positive news were the highest among all treatments. This finding about short-time effects of positive news collides with the findings of Hornstein et al. (1975), Yao and Yu (2016) and do not seem to expand the results of Fišar et al. (2021) in any way. A more critical interpretation of our results may be, that people do not consider themselves more altruistic after reading positive news. Also, a large part of the literature about cooperation and trust may not apply on altruism. If that were the case, we could have said that our news did not elicit pride and focus on the news that should have done so.

The inclusion of the collection of questions about the tolerance of dishonest behaviours was motivated by the research of priming, deductive norms, and inspired by the broken windows

theory. Did the recipients of negative news approve the antisocial behaviour more than those reading neutral and positive news? On average, they do (by one hundredth of a point), but the median values show that the middle reader of neutral news was more benevolent against economic transgressions. Positive news recipients were on average the least tolerant. The difference also was not statistically significant. These results are in a slight tension with Berkowitz's (1984) insight about the increase of antisocial behaviour caused by the wide media coverage of aggression. Of course, the objection would be that benevolence of small offences does not have to necessarily mean the tendency to do them. Further research about the long-term effects of negative news consumption may be enriching.

The inspiration behind the addition of the Overlap of Self, Ingroup and Outgroup diagram questions into our questionnaire was twofold: the normative aspect where the negative news may signal social distance and positive news social closeness, and the narrative that "people are getting more distant these days." An important notion is that the standard method of evaluation of results are the multivariate ANOVA, which we did not apply. The choice of Kruskal Wallis test was made in accordance with the results of the graphical test (annex). Although a deeper interplay between the overlaps may be also highly informative, we focused on the differences between the reported distance by treatments per variable. Although no statistically significant differences between the treatment groups have been found, the neutral news group reported on average the shortest distances between groups in all three graphs. (annex)

4.1 Limitations

There is not much what can we say about the effects of news on prosocial behaviour with certainty. The topic is way too complex (as shown in literature review) and our method of data collection did not allow us to capture the issue in its full depth. The expressed attitudes or claims about self may not precisely depict the behaviour of the respondents. Even if the priming and framing attributes of news were present in the answers of our respondents, we did not use any method to measure or detect them (except for the mediation analysis in the case of the general trust scale).

Our manipulation check was limited by the settings our respondents occurred in while answering the survey (considering the battle of attention of the users by multiple media at the same time). Also, due to a human error causing that some of the respondents read all

three types of news samples except for one randomly selected, and a its late detection, a new collection of data was performed and used. The informative value of our small sample (194 respondents) for 3 treatments (71 for negative, 62 for neutral and 61 for positive) is, considering the requirements of statistical methods used, very limited. Possible bias in results might be also caused by uneven amounts of data in treatment samples. Additionally, one also has to take in account the limitations of graphical tests to infer normality of our data. As a certain restriction could the absence of the cooperation scale for surveys be also considered.

Another limitation worth noting was the underestimation of the length of our survey. The 20-questions-long questionnaires like PANAS, GTS or HAS might take a toll in the form of diminished concentration, frustration or even boredom of the respondents, which possibly biased the results. The explanation power of OSIO may also be limited, due to the vaguely set questions.

The last limitation worth mentioning is the overestimation of time spent by consuming news by our respondents due to multiple questions asking about consumption of news on various media. This notion is important due to the possible bias of the statistics about the long-term effects of news. The issue was analysed in the subchapter Additional findings.

4.2 Laboratory experiment designs

Considering our findings, we propose two economic laboratory experiments using behavioural games – experiment about negative news and social trust (based on our survey findings), and experiment about positive and negative news and cooperation (based on the findings in literature review).

Trust game

In the first one, similarly to Cocharad et al. (2007), Johnson and Mislin (2011), and Myers and Tingley (2016) multiple rounds of the trust game are played. After a brief introduction to experiment, the attendees are divided into groups of 4 or 5 and play 2 rounds of the game to get used to the mechanics and interface. Then, the attendees are exposed to either short minute-by-minute negatively valenced news (depicting scary, enraging, or sad events) or to neutral news. After the reading task, they answer a few questions about information in the short texts and fill the PANAS form. A few more rounds of the trust game follow.

At the beginning of each round, the attendees are given an endowment. In the game of trust (also known as investment game), players (trustors) may send chosen number of resources of their endowment to one other player (trustee) in group. This player can either keep the entrusted resource for themselves or distribute a multiplied number of resources equally among all trustors and self.

The depictions of the breach of trust and other negative events could lower the trust of trustors, changing the mental picture about unknown trustee in comparison to the depiction of neutral events. From the game theoretical point of view, the most rational strategy is to not entrust any resources. The increase of entrusted resource does not seem highly likely. Decisions of the trustee may have an impact in the later rounds, but their behaviour would likely not be motivated by news. A research hypothesis would be that trustors entrust a smaller number of endowments to the trustee, if they read negative news before. After the experimental part, a shorter and more focused version of our questionnaire would be given to the participants.

Public goods game

In the second proposed experiment, inspired mostly by literature review, Corrazini et al. (2015), Fischbacher et al.(2001), and Keser and Van Winden (2000), a multiple-round public goods game is played. After a brief

introduction to the experiment, the attendees are divided into groups of 4 or 5 and play 2 rounds of the game to get used to the mechanics and interface. Then, the attendees are exposed to either short minute-by-minute negatively-valenced news (depicting scary, enraging, or sad events), positively-valenced news (depicting events that induce joy, pride, and gratefulness), or to neutral news. After the reading task, they answer a few questions about information in the short texts and fill the PANAS form. A few more rounds of the public goods game follow.

At the beginning of each round of the public goods game, the players get a certain number of resources as endowment. They can either spend it all, spend partially or not at all. If the sum of collected resources exceeds a certain threshold, the whole sum is multiplied and distributed evenly among players. From the game theoretical point of view, the most rational strategy is to not spend any resources. On the other hand, the encouraging or discouraging news stories could have normative or priming qualities and lead to changed appraisal about other players. A research hypothesis would be that players spend a smaller part of endowment if they read negative news before. Based on our findings, due to the low trust, negative news may decrease or even stop the cooperation attempts before they even begin. Another hypothesis would assume a larger part of shared resource after the exposure to positive news in comparison to neutral news. After the experimental part, a shorter and more focused version of our questionnaire would be given to the participants.

The proposed experimental designs focus more on the economic aspects of news effects. The trust game and the public goods game simulate situations, when a group of players decides between individual and common goal. Trust itself is in the trust game oriented towards the trustee, while trust in the public goods game is oriented towards all other players.

Conclusion

Our thesis answered all main and partial questions we set with following answers: Negative and positive news elicited intended emotions. Group reading negative news reported higher negative emotional affect, while positive group reported higher positive emotional affect. These were at least slightly statistically significant. Although the information from literature review seemed to allow this possibility, our sample of negative news did not improve or increase any type of expressed prosocial behaviour on a statistically significant level. Any other improvements were only marginal. On the other hand, our sample of negative news significantly decreased the average interpersonal trust score of our respondents in the short term. This effect was not mediated by emotions, but it could be mediated by its content. Further research is recommended. Positive news did not improve prosocial behaviour on a statistically significant level. Some increase in comparison to neutral news was visible on the helping attitudes scale. Group reading positive news also tended to judge antisocial behaviour on average more strictly.

Our findings may be useful for situations when decisions about cooperation are needed and where trust plays a vital role. As examples might serve collective projects, investment funds and voluntary and charity collections, where the trust that the gifts are going to the right hands may be crucial.

With a small exaggeration, but fully in the context of our results, it is possible to say that despite the popularity by consumers, the endless flow of negative news may have a negative effect on their interpersonal trust. At least in the short term. The emotional effect of negative news is visible in the global increase of news avoidance. On the other hand, a possibility that positive news can at least indirectly improve human feeling of community and tendency to cooperate is still open.

Resumé

Inšpiráciou pre vznik tejto diplomovej práce bolo vysoké množstvo negatívnych správ, ktorému je človek chtiac-nechtiac vystavovaný na dennej báze a ktoré prispieva k zvyšujúcej sa miere vyhýbania sa správam (news avoidance) po celom svete. Cieľom práce bolo pomocou širokej interdisciplinárnej rešerše a dotazníkového experimentu o aspektoch prosociálneho správania – interpersonálnej dôvere (general trust), sklonom k pomocnému správaniu (helping attitudes), tolerancii nečestného správania (vybrané otázky z World Value Survey) a ukazovateľa seba-identifikácie so skupinami (overlap of self, ingroup and outgroup) nájsť interakciu medzi správami a prosociálnym správaním. Škály boli vybrané s účelom priblíženia sa konceptu kooperácie.

Kľúčové koncepty sprostredkujúce možné vplyvy správ na prosociálne správanie boli nasledujúce:

Rámcovanie (framing). Kontext, v ktorom sú nám správy podávané, môže meniť naše uvažovanie o nich. Tento pojem preslávili priekopníci behaviorálnej teórie Kahneman a Tversky. Špecifická forma rámčovania, na ktorú sa zamerali teoretici Shapiro a Gentzkow (2010) a našli ju prítomnú v spravodajstve sa anglicky nazýva „slant“ (voľne preložené štylistika, ohýbanie). Ide o výber označení pojmov tak, aby evokovali istý emočný náboj. Príkladom boli označenia „death tax“ (úmrtná daň) a „estate tax“ (daň z nehnuteľností), na ktoré sa výskumníci zamerali počas parlamentných diskusií v USA a ktoré sa dostávali k čitateľom podľa regiónov.

Negatívne skreslenie súvisí nielen úzko s rámčovaním, ale dokáže vysvetliť preferenciu negatívnych správ u spotrebiteľov aj producentov na biologickej úrovni. Viaceré výskumy preukázali, že na negatívne podnety reagujeme intenzívnejšie, venujeme im viac pozornosti a dokonca ich vyhľadávame. Skreslenie tiež vysvetľuje obľúbenosť pandemického, vojenského, či katastrofického spravodajstva. Či už v prípade negatívneho skreslenia alebo rámčovania sa ukazuje, že môžu mať dlhodobý vplyv na správanie (a myslenie) spotrebiteľov. Zaujímavosťou je, že hoci sa pojem pozitívne skreslenie používa v iných kontextoch, optimistické a inšpiratívne príbehy patria k tiež vyhľadávaným a veľmi často šíreným. Prím však hrajú negatívne.

Priming. Psychologický pojem označujúci reakciu na podnet spôsobenú predchádzajúcim podnetom. Asociovanie v kontexte predom vyvolaných podnetov sa deje na nevedomej úrovni a jeho využitie nachádzame napríklad v reklame. Berkowitz (1984) uvádza tento

pojmem v kontexte sledovania mediálneho obsahu zobrazujúceho násilie a zvýšenia protispoločenských myšlienok.

Sociálne normy – pojem známy pre viacero odborov vrátane inštitucionálnej ekonómie. Z našej rešerše vyplýva, že je možné pozorovať výraznejší vplyv správ pri injunktívnych normách, teda pri tých, ktoré hovoria, ako by sa človek mal správať. Na druhej strane, vplyv správ na popisné (deskriptívne) normy označujúce to, ako sa ľudia naozaj správajú, je z perspektívy literatúry nejasný.

Emócie – keďže sú efekty emócií na prosociálne správanie dlhodobo analyzované, tvoria ústrednú súčasť nášho skúmania. V našom jednoduchom modeli zohrávajú úlohu mediátora (Diagram 2). Z výsledkov viacerých behaviorálnych výskumov o vplyve negatívnych emócií na kooperáciu vyplýva výsadná pozícia hnevu, ktorý sklony k spolupráci znižuje, pričom obavy, pocity zhnusenía, smútku alebo viny vedú ľudí skôr k zvýšenej spolupráci. Možno neintuitívne, z pozitívnych emócií sa javí „kooperatívnou“ iba hrdosť. Analýza vplyvov emócií na inštitucionálnu a interpersonálnu dôveru naznačuje pokles dôvery pri pocitoch úzkosti. Podľa záverov Dunn-ovej a Schweitzer-a (2005) ľudia dôverujú iným menej, ak pociťujú nad situáciou vyššiu mieru kontroly (pocity hrdosti a viny). Naopak v prípade, že pociťujú absenciu kontroly (hnev a vďačnosť). Zároveň ich výsledky naznačujú, že pozitívne emócie zvyšujú interpersonálnu dôveru.

Na základe týchto zistení sme si položili tri výskumné otázky –

*Posilňujú negatívne správy prosociálne správanie?

*Zoslabujú negatívne správy prosociálne správanie?

*Posilňujú pozitívne správy prosociálne správanie?

Respondenti boli v anonymnom dotazníkovom on-line experimente rozdelení do troch skupín na základe úvodnej otázky (annex) – na skupinu čítajúcu neutrálne – nudné a neosobné - správy, pozitívne správy evokujúce pocity radosti, vďačnosti a hrdosti a negatívne správy evokujúce pocity obáv, smútku alebo pohoršenia. Správy pozostávali z krátkych titulok na štýl minúty po minúte. Vo výsledku si prečítalo neutrálne správy 61 ľudí, negatívne 71 a pozitívne 62, celkový počet respondentov bol 194. Po prečítaní správ bol respondentom daný na vyplnenie dotazník PANAS s účelom zmerania emočných afektov. Ďalšie otázky položené po zodpovedaní otázok v behaviorálnych dotazníkoch (uvedených vyššie) sa týkali kontrolných premenných typu vek, najvyššie dosiahnuté

vzdelanie a praktizovanie náboženstva. Po zodpovedaní týchto nasledovalo päť otázok ohľadom priemerného času stráveného denne sledovaním správ, so zameraním na typ médií (sociálne siete, internet mimo sociálnych sietí, televízia, rádio, podcast). Dôvodom zberu týchto údajov bola snaha o odhadnutie vplyvu dlhodobých efektov správ na prosociálne správanie. Tieto sme neskôr odhadli v podkapitole dodatočné zistenia (Additional findings).

Na vyhodnotenie dotazníka sme využili štatistické metódy ANOVA a Kuskal Wallis test na zhodnotenie štatistickej rozdielnosti medzi všetkými tromi skupinami; t-testy a Mann-Whitney testy na porovnanie rozdielov zvlášť medzi skupinami s negatívnymi a neutrálnymi správami a zvlášť pozitívnymi a neutrálnymi správami. Pomocou týchto metód sme si zároveň štatisticky overili, či ľudia cítia emócie, ktoré sme správami chceli navodiť.

Pre detailnejšie zhodnotenie efektov správ na vybrané ukazovatele prosociálneho správania (dôveru a sklon k nápomocnosti) sme použili lineárnu regresiu (metódou najmenších štvorcov). Táto metóda bola aplikovaná na odhad relatívnych efektov správ na hodnoty škály interpersonálnej dôvery a sklonom k pomocnému správaniu.

Následne sme na základe výsledkov štatistickej významnosti aplikovali mediačnú analýzu, aby sme zistili, do akej miery je pôsobenie negatívnych správ na hodnoty škály interpersonálnej dôvery sprostredkované emóciami. Výsledkom bolo, že hoci podľa našich údajov negatívne správy znižujú interpersonálnu dôveru, nezdá sa, že by sa tak dialo prostredníctvom emočného afektu v krátkom období. Na základe tohto zistenia sa prikláňame k názoru, že negatívne správy znižujú dôveru prostredníctvom poskytnutých informácií. Rolu pri poklese hodnôt dôvery po prečítaní správ teda mohli zohrať normy, priming, rámcovanie alebo kombinácia týchto javov. Tento výsledok sa zaraďuje k pozorovaniam Horstein-a kol. (1975) a Han-a a kol. (2018). V prípade týchto výskumov boli účastníci pomocou krátkych videí alebo televíznych záznamov konfrontovaní s pozitívnymi alebo negatívnymi obsahmi a, podobne ako našom prípade, po vystavení sa negatívnemu obsahu prejavovali menšiu mieru dôvery.

Odpovedajúc na naše ďalšie výskumné otázky – pozitívny vplyv negatívnych správ sa nepotvrdil pri žiadnom z prosociálnych správaní. V prípade pozitívnych správ nachádzame nárast hodnôt pri sklone k pomocnému správaniu v porovnaní so skupinou s neutrálnymi správami, na štatistickej úrovni však tento rozdiel nemôžeme potvrdiť. Podobný výsledok pozorujeme aj pri otázkach o tolerancii nečestného správania, kde boli ľudia čítajúci pozitívne správy priemere voči priestupkom v priemere prísnejší. Podobné obmedzenie

o štatistickej významnosti platí aj tu. Tieto výsledky prichádzajú do konfliktu s pozorovaniami Yao a Yu (2016) a Horstein-a (1975), ktorí pozorovali krátkodobé zvýšenie prosociálneho správania v podobe ochoty pomáhať po vystavení participantov pozitívne pôsobiacemu obsahu. Využitie našich zistení možno nájsť v situáciách, keď v rámci zaobchádzania so zdrojmi prichádza k rozhodovaniu na základe dôvery. Príkladmi môžu byť komunálne projekty, spoločné investovanie alebo aj pomoc dobrovoľníckym a charitatívnym organizáciám, kde hrá dôvera vitálnu rolu v podobe presvedčenia darujúceho, že vynaložené zdroje naozaj idú na správnu vec.

List of literature

ALBERTSON, Bethany; GADARIAN, Shana Kushner. *Anxious politics: Democratic citizenship in a threatening world*. Cambridge University Press, 2015.
<https://doi.org/10.1017/CBO9781139963107>

ANGRIST, Joshua D.; PISCHKE, Jörn-Steffen. *Mastering'metrics: The path from cause to effect*. Princeton university press, 2014.
<https://EconPapers.repec.org/RePEc:pup:pbooks:10363>

ARIAS, Eric. How does media influence social norms? Experimental evidence on the role of common knowledge. *Political Science Research and Methods*, 2019, 7.3: 561-578.
<https://doi.org/10.1017/psrm.2018.1>

BAUMGARTNER, Susanne E.; WIRTH, Werner. Affective priming during the processing of news articles. *Media Psychology*, 2012, 15.1: 1-18.
<https://doi.org/10.1080/15213269.2011.648535>

BEKKERS, René Henricus Franciscus Petrus. Giving and volunteering in the Netherlands: Sociological and psychological perspectives. 2004.
<https://pure.rug.nl/ws/portalfiles/portal/2973374/bekkersrhfp-uu-diss.pdf>

BERKOWITZ, Leonard. Some effects of thoughts on anti-and prosocial influences of media events: a cognitive-neoassociation analysis. *Psychological bulletin*, 1984, 95.3: 410.
<https://psycnet.apa.org/doi/10.1037/0033-2909.95.3.410>

BOBBIT, Zach. *Kruskal-Wallis Test: Definition, Formula, and Example*. Online. 2019. Dostupné z: <https://www.statology.org/kruskal-wallis-test/>. [cit. 2024-04-24].

BORG, Kim. Media and social norms: Exploring the relationship between media and plastic avoidance social norms. *Environmental Communication*, 2022, 16.3: 371-387. - <https://doi.org/10.1080/17524032.2021.2010783>

CAMBRIDGE UNIVERSITY PRESS & ASSESSMENT. NEWS. Online. 2024. Dostupné z: <https://dictionary.cambridge.org/dictionary/english/news>. [cit. 2024-03-24].

CARRETIÉ, Luis, et al. Emotion, attention, and the ‘negativity bias’, studied through event-related potentials. *International journal of psychophysiology*, 2001, 41.1: 75-85 <https://www.sciencedirect.com/science/article/abs/pii/S0167876000001951>

CIALDINI, Robert B.; RENO, Raymond R.; KALLGREN, Carl A. A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of personality and social psychology*, 1990, 58.6: 1015. <https://doi.org/10.1037/0022-3514.58.6.1015>

CIERCHIA, Gabriele, et al. Cooperation across multiple game theoretical paradigms is increased by fear more than anger in selfish individuals. *Scientific Reports*, 2021, 11.1: 9351. <https://doi.org/10.1038/s41598-021-88663-0>

COCHARD, Francois; VAN, Phu Nguyen; WILLINGER, Marc. Trusting behavior in a repeated investment game. *Journal of Economic Behavior & Organization*, 2004, 55.1: 31-44. <https://doi.org/10.1016/j.jebo.2003.07.004>

CORAZZINI, Luca; COTTON, Christopher; VALBONESI, Paola. Donor coordination in project funding: Evidence from a threshold public goods experiment. *Journal of Public Economics*, 2015, 128: 16-29. <https://doi.org/10.1016/j.jpubeco.2015.05.005>

CORBIT, John, et al. Intuitive cooperators: Time pressure increases children's cooperative decisions in a modified public goods game. *Developmental Science*, 2023, 26.4: e13344. <https://doi.org/10.1111/desc.13344>

D'ANGELO, Paul. Framing: media frames. *The international encyclopedia of media effects*, 2017, 1-10. https://www.researchgate.net/profile/Paul-Dangelo/publication/314394898_D'Angelo_P_2017_Framing_Media_Frames_In_P_Roessler_C_A_Hoffner_L_van_Zoonen_Eds_The_International_Encyclopedia_of_Media_Effects_pp_1-10_New_York_Wiley/links/5a0f015da6fdccd95db729d5/DAngelo-P-2017-Framing-Media-Frames-In-P-Roessler-C-A-Hoffner-L-van-Zoonen-Eds-The-International-Encyclopedia-of-Media-Effects-pp-1-10-New-York-Wiley.pdf

DE HOOGE, Ilona E.; ZEELENBERG, Marcel; BREUGELMANS, Seger M. Moral sentiments and cooperation: Differential influences of shame and guilt. *Cognition and emotion*, 2007, 21.5: 1025-1042. - <https://doi.org/10.1080/02699930600980874>

DORFMAN, Anna; EYAL, Tal; BEREBY-MEYER, Yoella. Proud to cooperate: The consideration of pride promotes cooperation in a social dilemma. *Journal of Experimental Social Psychology*, 2014, 55: 105-109. <https://doi.org/10.1016/j.jesp.2014.06.003>

DROUVELIS, Michalis; GROSSKOPF, Brit. The effects of induced emotions on pro-social behaviour. *Journal of Public Economics*, 2016, 134: 1-8. <https://doi.org/10.1016/j.jpubeco.2015.12.012>

DUNN, Jennifer R.; SCHWEITZER, Maurice E. Feeling and believing: the influence of emotion on trust. *Journal of personality and social psychology*, 2005, 88.5: 736. <https://doi.org/10.1037/0022-3514.88.5.736>

EAGLY, Alice H. The his and hers of prosocial behavior: an examination of the social psychology of gender. *American psychologist*, 2009, 64.8: 644. [10.1037/0003-066X.64.8.644](https://doi.org/10.1037/0003-066X.64.8.644)

EINOLF, Christopher J. The link between religion and helping others: The role of values, ideas, and language. *Sociology of religion*, 2011, 72.4: 435-455. <https://doi.org/10.1093/socrel/srr017>

EMERICK, Kyle. *Derivation of OLS Estimator*. Online. 2011. Dostupné z: https://are.berkeley.edu/courses/EEP118/current/derive_ols.pdf. [cit. 2024-04-25].

ESPINOSA, María Paz; KOVÁŘÍK, Jaromír. Prosocial behavior and gender. *Frontiers in behavioral neuroscience*, 2015, 9: 88. <http://dx.doi.org/10.3389/fnbeh.2015.00088>

FISCHBACHER, Urs; GÄCHTER, Simon; FEHR, Ernst. Are people conditionally cooperative? Evidence from a public goods experiment. *Economics letters*, 2001, 71.3: 397-404. [https://doi.org/10.1016/S0165-1765\(01\)00394-9](https://doi.org/10.1016/S0165-1765(01)00394-9)

FIŠAR, Miloš, et al. Media negativity bias and tax compliance: experimental evidence. *International Tax and Public Finance*, 2021, 1-53. <https://link.springer.com/article/10.1007/s10797-021-09706-w>

GENTZKOW, Matthew; SHAPIRO, Jesse M. Media bias and reputation. *Journal of political Economy*, 2006, 114.2: 280-316. <https://doi:10.1086/499414>

GENTZKOW, Matthew; SHAPIRO, Jesse M. What drives media slant? Evidence from US daily newspapers. *Econometrica*, 2010, 78.1: 35-71. <https://doi.org/10.3982/ECTA7195>

GRIESSMAIR, Michele; HIPPMANN, Patrick. Anger, guilt, and repeated cooperation in social dilemmas. *Emotion*, 2022, 22.3: 444. <https://doi.org/10.1037/emo0000897>

HAN, Lei, et al. The effect of negative energy news on social trust and helping behavior. *Computers in Human Behavior*, 2019, 92: 128-138.
<https://www.sciencedirect.com/science/article/pii/S0747563218305466>

HARCOURT, Bernard E.; LUDWIG, Jens. Broken windows: New evidence from New York City and a five-city social experiment. *U. Chi. L. Rev.*, 2006, 73: 271.
https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID755124_code249436.pdf?abstractid=743284&mirid=1

HARCUP, Tony; O'NEILL, Deirdre. What is news? News values revisited (again). *Journalism studies*, 2017, 18.12: 1470-1488.
<https://doi.org/10.1080/1461670X.2016.1150193>

HARRIS, Jennifer L.; BARGH, John A.; BROWNELL, Kelly D. Priming effects of television food advertising on eating behavior. *Health psychology*, 2009, 28.4: 404.
<https://psycnet.apa.org/doi/10.1037/a0014399>

HAYES, Adam. *T-Test: What It Is With Multiple Formulas and When To Use Them*. Online. 2023. Dostupné z: <https://www.investopedia.com/terms/t/t-test.asp>. [cit. 2024-04-23].

HERTEL, Guido; FIEDLER, Klaus. Affective and cognitive influences in social dilemma game. *European Journal of Social Psychology*, 1994, 24.1: 131-145.

HERTEL, Guido, et al. Mood effects on cooperation in small groups: Does positive mood simply lead to more cooperation?. *Cognition & emotion*, 2000, 14.4: 441-472.
<https://doi.org/10.1080/026999300402754>

HOLMAN, E. Alison; GARFIN, Dana Rose; SILVER, Roxane Cohen. Media's role in broadcasting acute stress following the Boston Marathon bombings. *Proceedings of the*

National Academy of Sciences, 2014, 111.1: 93-98.
<https://doi.org/10.1073/pnas.1316265110>

HORNSTEIN, H. A., LaKind, E., Frankel, G., & Manne, S. (1975). Effects of knowledge about remote social events on prosocial behavior, social conception, and mood. *Journal of Personality and Social Psychology*, 32_(6), 1038–1046. <https://doi.org/10.1037/0022-3514.32.6.1038>

HUFF, Charlotte. Media overload is hurting our mental health. Here are ways to manage headline stress. *Monit Psychol*, 2022, 58.8: 20.
<https://www.apa.org/monitor/2022/11/strain-media-overload>

HWANG, Juwon, et al. The relationship among COVID-19 information seeking, news media use, and emotional distress at the onset of the pandemic. *International Journal of Environmental Research and Public Health*, 2021, 18.24: 13198. <https://doi.org/10.3390/ijerph182413198>

INGLEHART, R., C. Haerpfer, A. Moreno, C. Welzel, K. Kizilova, J. Diez-Medrano, M. Lagos, P. Norris, E. Ponarin & B. Puranen (eds.). 2022. World Values Survey: All Rounds - Country-Pooled Datafile. Madrid, Spain & Vienna, Austria: JD Systems Institute & WWSA Secretariat. Dataset Version 3.0.0. [doi:10.14281/18241.17](https://doi.org/10.14281/18241.17)

JOHNSON, Noel D.; MISLIN, Alexandra A. Trust games: A meta-analysis. *Journal of economic psychology*, 2011, 32.5: 865-889. <https://doi.org/10.1016/j.joep.2011.05.007>

JOHNSTON, Wendy M.; DAVEY, Graham CL. The psychological impact of negative TV news bulletins: The catastrophizing of personal worries. *British Journal of Psychology*, 1997, 88.1: 85-91. <https://doi.org/10.1111/j.2044-8295.1997.tb02622.x>

KENTON, Will. *What Is Analysis of Variance (ANOVA)?* Online. 2024. Dostupné z: <https://www.investopedia.com/terms/a/anova.asp#:~:text=Analysis%20of%20variance%20%28ANOVA%29%20is%20a%20statistical%20test,factors.%20A%20one-way%20ANOVA%20uses%20one%20independent%20variable..> [cit. 2024-04-24].

KEPPLINGER, Hans Mathias; GEISS, Stefan; SIEBERT, Sandra. Framing scandals: Cognitive and emotional media effects. *Journal of Communication*, 2012, 62.4: 659-681. <https://doi.org/10.1111/j.1460-2466.2012.01653.x>

KESER, Claudia; VAN WINDEN, Frans. Conditional cooperation and voluntary contributions to public goods. *scandinavian Journal of Economics*, 2000, 102.1: 23-39. <https://doi.org/10.1111/1467-9442.00182>

MASTROROCCO, Nicola; MINALE, Luigi. News media and crime perceptions: Evidence from a natural experiment. *Journal of Public Economics*, 2018, 165: 230-255. <https://doi.org/10.1016/j.jpubeco.2018.07.002>

MAYR, Ulrich; FREUND, Alexandra M. Do we become more prosocial as we age, and if so, why?. *Current Directions in Psychological Science*, 2020, 29.3: 248-254. <https://doi.org/10.1177/0963721420910811>

MEHMETOGLU, Mehmet. Medsem: A Stata package for statistical mediation analysis. *International Journal of Computational Economics and Econometrics*, 2018, 8.1: 63-78. <https://doi.org/10.1504/IJCEE.2018.088321>

MYERS, C. Daniel; TINGLEY, Dustin. The influence of emotion on trust. *Political Analysis*, 2016, 24.4: 492-500. <https://doi.org/10.1093/pan/mpw026>

NICKELL, G.(1998). The Helping Attitudes Scale. Paper presented at 106th Annual Convention of the American Psychological Association at San Francisco, August, 1998. https://fetzer.org/sites/default/files/images/stories/pdf/selfmeasures/HELPING_OTHERS-HelpingAttitudesScale.pdf

NICKELS, Nora; KUBICKI, Konrad; MAESTRIPIERI, Dario. Female differences in the effects of psychosocial stress on cooperative and prosocial behavior: evidence for ‘flight or fight’ in males and ‘tend and befriend’ in females. *Adaptive Human Behavior and Physiology*, 2017, 3: 171-183. <https://doi.org/10.1007/s40750-017-0062-3>

ÖSTERMAN, Marcus. Can we trust education for fostering trust? Quasi-experimental evidence on the effect of education and tracking on social trust. *Social Indicators Research*, 2021, 154.1: 211-233. <https://doi.org/10.1007/s11205-020-02529-y>

POLMAN, Evan; KIM, Sharon H. Effects of anger, disgust, and sadness on sharing with others. *Personality and Social Psychology Bulletin*, 2013, 39.12: 1683-1692. <https://doi.org/10.1177/014616721350099>

ROBERTSON, Claire E., et al. Negativity drives online news consumption. *Nature human behaviour*, 2023, 7.5: 812-822. <https://doi.org/10.1038/s41597-021-00934-7>

ROSI, Alessia, et al. Prosocial behavior in aging: which factors can explain age-related differences in social-economic decision making?. *International psychogeriatrics*, 2019, 31.12: 1747-1757. <https://doi.org/10.1017/s1041610219000061>

ROZIN, Paul; ROYZMAN, Edward B. Negativity bias, negativity dominance, and contagion. *Personality and social psychology review*, 2001, 5.4: 296-320. https://doi.org/10.1207/S15327957PSPR0504_2

SCHUBERT, T., & Otten, S. (2002). Overlap of self, ingroup, and outgroup: Pictorial measures of self-categorization. *Self & Identity*, 1(4), 535-576. [10.1080/152988602760328012](https://doi.org/10.1080/152988602760328012)

SOROKA, Stuart, et al. Negativity and positivity biases in economic news coverage: Traditional versus social media. *Communication Research*, 2018, 45.7: 1078-1098. <https://doi.org/10.1177/0093650217725870>

SOROKA, S. (2012). The gatekeeping function: Distributions of information in media and the real world. *Journal of Politics*, 74(2), 514–528. <https://www.jstor.org/stable/10.1017/s002238161100171x>

SOROKA, S., Fournier, P., & Nir, L. (2019). Cross-national evidence of a negativity bias in psychophysiological reactions to news. *Proceedings of the National Academy of Sciences*, 116(38), 18888– 18892. <https://doi.org/10.1073/pnas.1908369116>

SOROKA, Stuart; MCADAMS, Stephen. News, politics, and negativity. *Political communication*, 2015, 32.1: 1-22. <https://doi.org/10.1080/10584609.2014.881942>

TESEI, A.; DURANTE, R.; PINOTTI, P. The Political Legacy of Entertainment TV. *American Economic Review*, 2018. <https://doi.org/10.1257/aer.20150958>

TRUSSLER, M., & Soroka, S. (2014). Consumer Demand for Cynical and Negative News Frames. *The International Journal of Press/Politics*, 19(3), 360-379. <https://doi.org/10.1177/1940161214524832>

TSUGAWA, Sho; OHSAKI, Hiroyuki. Negative messages spread rapidly and widely on social media. In: *Proceedings of the 2015 ACM on conference on online social networks*. 2015. p. 151-160. <https://doi.org/10.1145/2817946.2817962>

TVERSKY, Amos; KAHNEMAN, Daniel. The framing of decisions and the psychology of choice. *science*, 1981, 211.4481: 453-458. <https://psych.hanover.edu/classes/Cognition/Papers/tversky81.pdf>

VAISH, Amrisha; GROSSMANN, Tobias; WOODWARD, Amanda. Not all emotions are created equal: the negativity bias in social-emotional development. *Psychological bulletin*, 2008, 134.3: 383. <https://psycnet.apa.org/doi/10.1037/0033-2909.134.3.383>

WATSON, David; CLARK, Lee Anna; TELLEGEN, Auke. Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of personality and social psychology*, 1988, 54.6: 1063. <https://doi.org/10.1037/0022-3514.54.6.1063>

WESTLAKE, Grace; COALL, David; GRUETER, Cyril C. Educational attainment is associated with unconditional helping behaviour. *Evolutionary human sciences*, 2019, 1: e15. <https://doi.org/10.1017/ehs.2019.16>

WILSON, Barbara J. Media and children's aggression, fear, and altruism. *The future of children*, 2008, 87-118. <https://www.jstor.org/stable/20053121>

YAO, Ziqing; YU, Rongjun. The spreading of social energy: How exposure to positive and negative social news affects behavior. *PloS One*, 2016, 11.6: e0156062. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0156062>

YAMAGISHI, Toshio; YAMAGISHI, Midori. Trust and commitment in the United States and Japan. *Motivation and emotion*, 1994, 18.2: 129-166. <https://link.springer.com/article/10.1007/BF02249397>

ZEIGLER-HILL, Virgil; SHACKELFORD, Todd K. (ed.). Encyclopedia of personality and individual differences. Cham: Springer International Publishing, 2020. https://doi.org/10.1007/978-3-319-24612-3_479

ZEMACK-RUGAR, Yael; BETTMAN, James R.; FITZSIMONS, Gavan J. The effects of nonconsciously priming emotion concepts on behavior. *Journal of personality and social psychology*, 2007, 93.6: 927. <https://doi.org/10.1037/0022-3514.93.6.927>

ZHANG, Ruqian, et al. Effects of acute psychosocial stress on interpersonal cooperation and competition in young women. *Brain and cognition*, 2021, 151: 105738. <https://doi.org/10.1016/j.bandc.2021.105738>

Annexes

Descriptive statistics by variable

	Count	Mean	SD	Min	Max
Treatment	194	1.1	0.80	0.00	2.00
PA	194	2.66	0.85	1.00	4.80
NA	194	1.78	0.84	1.00	4.50
ANTI	194	2.86	1.42	1.00	7.20
GTS	194	2.99	0.71	1.17	5.00
HAS	194	3.71	0.52	2.15	4.85
IOval	194	4.24	1.74	1.00	7.00
SIval	194	4.73	1.51	1.00	7.00
SOval	194	3.68	1.65	1.00	7.00
Age	194	27.76	8.34	18.00	58.00
Educ	194	4.3	0.97	1.00	6.00
Female	194	0.61	0.49	0.00	1.00
SumNews	194	3.20	2.59	0.00	18.00
Religion	194	0.36	0.48	0.00	1.00

Descriptive statistics by treatment group (SD for standard deviation)

Treatment	Descriptive	PA	NA	GTS	ANTI	HAS	IOval	SIval	SOval
Negative News	Average	2,53	2,24	2,90	2,95	3,70	4,31	4,73	3,76
Neutral News	Average	2,62	1,50	3,13	2,94	3,66	4,13	4,59	3,52
Positive News	Average	2,86	1,54	2,94	2,68	3,75	4,26	4,85	3,74

Variables	Descriptive	PA	NA	GTS	ANTI	HAS	IOval	SIval	SOval
Negative News	Median	2,4	2,1	2,83333	2,6	3,75	4	5	3
Neutral News	Median	2,6	1,3	3,16667	2,8	3,7	4	5	3
Positive News	Median	3	1,2	3	2,6	3,85	4	5	4

Variables	Descriptive	PA	NA	GTS	ANTI	HAS	IOval	SIval	SOval
Negative News	SD	0,79	0,96	0,73	1,51	0,48	1,63	1,40	1,53
Neutral News	SD	0,85	0,56	0,64	1,41	0,52	1,81	1,57	1,69
Positive News	SD	0,90	0,68	0,72	1,31	0,58	1,80	1,57	1,76

Descriptive statistics by gender

Variables	Descriptive	PA	NA	GTS	ANTI	HAS	IOval	SIval	SOval
Men	Average	2,63	1,70	3,13	2,83	3,61	4,41	5,14	3,97
Men	Median	2,6	1,4	3,16667	2,6	3,65	4	5	4
Men	SD	0,86	0,78	0,68	1,50	0,54	1,67	1,58	1,80
Women	Average	2,69	1,84	2,89	2,88	3,77	4,13	4,46	3,49
Women	Median	2,6	1,4	2,91667	2,8	3,8	4	4	3
Women	SD	0,85	0,87	0,71	1,36	0,51	1,77	1,40	1,53

Descriptive statistics by religion

Variables	Descriptive	PA	NA	GTS	ANTI	HAS	IOval	Sival	SOval
Religion	Average	2,53	1,89	3,09	2,75	3,75	4,28	4,91	3,72
Non-religion	Average	2,74	1,72	2,93	2,92	3,68	4,22	4,62	3,66

Variables	Descriptive	PA	NA	GTS	ANTI	HAS	IOval	Sival	SOval
Religion	Median	2,5	1,7	3	2,6	3,8	4	5	4
Non-religion	Median	2,7	1,3	3	2,6	3,8	4	4	3

Variables	Descriptive	PA	NA	GTS	ANTI	HAS	IOval	Sival	SOval
Religion	SD	0,89	0,82	0,66	1,41	0,51	1,86	1,49	1,69
Non-religion	SD	0,82	0,84	0,72	1,41	0,53	1,65	1,50	1,62

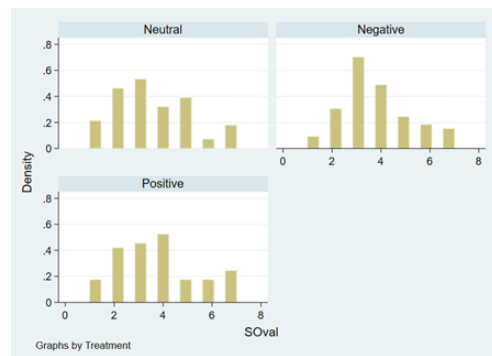
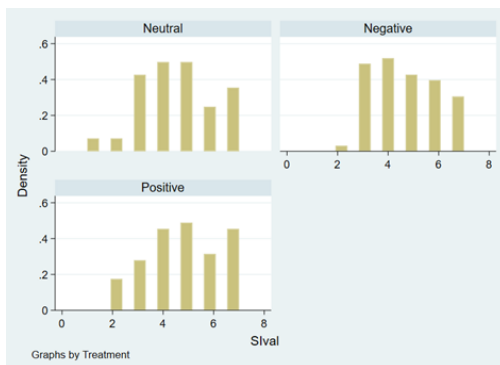
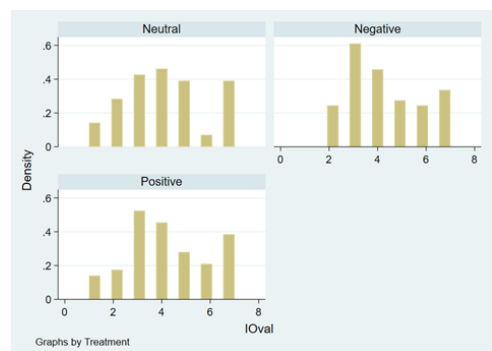
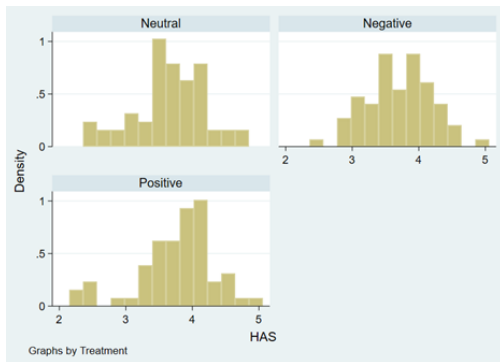
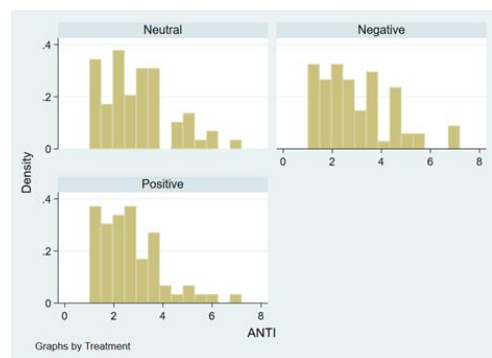
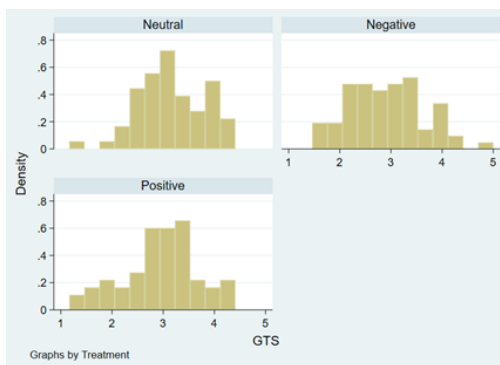
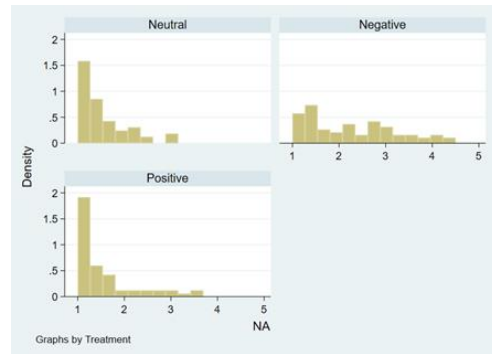
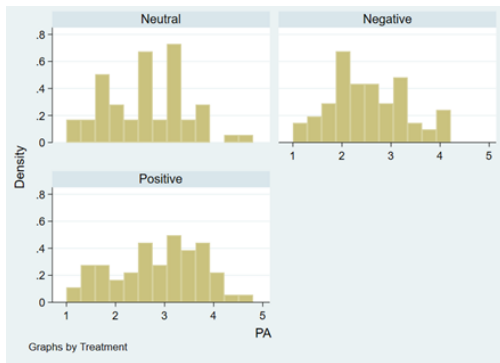
Linear regression TV news and Radio news on HAS

VARIABLES	(3) HAS	(4) HAS
TVNews	-0.116* (0.0614)	
PcastNews	0.0110 (0.0427)	0.0100 (0.0426)
Age	0.0111** (0.00482)	0.0117** (0.00487)
Educ	0.0545 (0.0410)	0.0509 (0.0411)
Female	0.197*** (0.0750)	0.181** (0.0750)
Religion	0.0546 (0.0763)	0.0589 (0.0761)
Radio News		-0.130** (0.0651)
Constant	3.063*** (0.188)	3.072*** (0.188)
Observations	194	194
R-squared	0.094	0.096

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Histograms of dependent variables by treatment



ANOVA – Bartlett’s test results ($p > 0,05$ – normal distribution of samples)

ANOVA	F	Prob>F	Bartletts chi2	p-Bartlett
PA	2,69	0,07	1,12	0,57
GTS	0,46	0,14	1,3	0,522
HAS	1,44	0,63	2,53	0,63

Quartile values for graphs 1-5

PA			
Percentile	Neutral	Negative	Positive
100th	4,8	4,2	4,7
75th	3,2	3,1	3,575
50th	2,6	2,4	3
25th	1,9	1,9	2,225
0th	1	1	1

NA			
Percentile	Neutral	Negative	Positive
100th	3,1	4,5	3,6
75th	1,8	2,9	1,775
50th	1,3	2,1	1,2
25th	1	1,3	1
0th	1	1	1

GTS			
Percentile	Neutral	Negative	Positive
100th	4,17	5,00	4,33
75th	3,67	3,50	3,46
50th	3,17	2,83	3,00
25th	2,67	2,42	2,50
0th	1,17	1,50	1,17

ANTI			
Percentile	Neutral	Negative	Positive
100th	6,8	7	7,2
75th	3,6	3,8	3,35
50th	2,8	2,6	2,6
25th	2	1,6	1,8
0th	1	1	1

HAS			
Percentile	Neutral	Negative	Positive
100th	4,75	4,85	4,85
75th	4,05	4,05	4,1
50th	3,7	3,75	3,85
25th	3,4	3,375	3,475
0th	2,4	2,55	2,15

IOval			
Percentile	Neutral	Negative	Positive
100th	7	7	7
75th	5	6	6
50th	4	4	4
25th	3	3	3
0th	1	2	1

Sival			
Percentile	Neutral	Negative	Positive
100th	7	7	7
75th	6	6	6
50th	5	5	5
25th	3	4	4
0th	1	2	2

SOval			
Percentile	Neutral	Negative	Positive
100th	7	7	7
75th	5	5	5
50th	3	3	4
25th	2	3	2
0th	1	1	1

Survey experiment (SK):

Experiment o správach a správani

Dobrý deň. Ďakujem, že ste si našli čas na tento anonymizovaný dotazník. Jeho vyplnením pomôžete k vzniku diplomovej práce na Ekonomickej univerzite v Bratislave. Časovo by nemal zaberať viac ako 15 minút. Pokračujte, prosím, kliknutím na "ďalej".

* Označuje povinnú otázku

Úvodná otázka

1.

Koľko je hodín? (Prosím o odpoveď v celých hodinách.)

*

Označte iba jednu elipsu.

0,3,6,9,12,15,18,21

Preskočiť na 3. sekciu (Správy)

1,4,7,10,13,16,19,22

Preskočiť na 4. sekciu (Správy)

2,5,8,11,14,17,20,23

Preskočiť na 5. sekciu (Správy)

Správy

Pred ďalším vyplňaním prosím o pozorné prečítanie nasledujúceho textu:

Lunárny modul Odysseus, ktorý pristál na Mesiaci, v stredu fungoval, čoskoro ho však uvedú do spánkového režimu, uviedla NASA.

Na Novom Zélande zrušili zákaz fajčenia. Zákaz fajčenia, ktorý aktuálne zrušil novozélandský parlament, zaviedla expremiérka Jacinda Ardernová.

Vo Francúzsku zakázali používať výrazy ako steak či rezeň na označenie vegetariánskych výrobkov. Vláda novým nariadením reaguje na dlhodobé sťažnosti mäso priemyslu. Výrobcovia majú rok na rozpredanie zásob.

Lamy, hory, pláže aj Machu Picchu. Prečo nemôže Peru chýbať na vašom travel liste? Krajina starovekých Inkov, vrcholov Ánd či roztomilých lám je atraktívnym miestom pre návštevníkov.

V talianskych Pompejach objavili veľmi dobre zachovanú fresku s gréckym mytologickým motívom – postavy súrodencov Frixosa a Hellé, ktorí utiekli pred obetou bohom.

Britský jazdec Lando Norris sa dohodol s tímom McLaren na predĺžení spolupráce. Dvadsaťštyriročný pilot F1 podpísal nový dlhodobý kontrakt a ukončil tak špekulácie o svojej budúcnosti.

Radšej nakupujem akcie, ale pár percent do kryptomien sa oplatí dať, vraví v rozhovore finančný analytik. Vraví aj, že IT akcie sú momentálne drahé, ale na trhu je kopec iných príležitostí.

Preskočiť na 2. otázku

Správy

Pred ďalším vyplňaním prosím o pozorné prečítanie nasledujúceho textu:

Gangy v Pásme Gazy zrejme kradnú z konvojov humanitárnu pomoc, tvrdí OSN.
Materiál končí na čiernom trhu.

Vo viedenskom nevestinci našli tri zabitú ženy, o život zrejme prišli pri útoku nožom.
Polícia neskôr zadržala 27-ročného podozrivého, ktorý je žiadateľom o azyl z Afganistanu; aj on mal na sebe rezné rany.

Podvodník sa telefonicky vydával za policajta, seniorku okradol o tisícky eur. Falošný policajt kontaktoval seniorku telefonicky a informoval ju o vyšetrovaní zlodejov, ktorí majú na svedomí vykrádanie bytov.

Najmenej 15 civilistov prišlo o život a dvaja ďalší utrpeli zranenia na severe Burkiny Faso pri útoku na katolícky kostol.

Nemecký Bosch prepustí z prešovskej výroby pohonov na elektrobicykle všetkých 200 zamestnancov. Zámer, ktorý mal pôvodne vytvoriť až 4-tisíc pracovných miest, ruší. Na Slovensku má ďalšie firmy, ktoré dohromady zamestnávajú vyše tisíc ľudí.

Lavína zasiahla vo Vysokých Tatrách poľských skialpinistov. Horskú záchrannú službu si privolali skialpinisti sami. Utrpeli zranenia.

Čoraz viac ľudí má problémy so zaspávaním. Ťažkosti vznikajú najmä vtedy, keď sme vystresovaní alebo rozrušení, a to nielen z toho, čo sa stalo, ale aj z nadchádzajúceho dňa.
Preskočiť na 2. otázku

Správy

Pred ďalším vyplňaním prosím o pozorné prečítanie nasledujúceho textu:

Koniec nudným farbám zadných strán telefónov: Táto technológia spraví z každého kúska originál. Kryty či puzdrá síce môžu čo-to zachrániť aj po dizajnovej stránke, no aktuálne riešenie ide na vec odlišne. Pomáha si E-Ink displejom.

Mladí Žilinčania sa proti Kodani prezentovali skvelým futbalom. Vypadol lepší tím, vravel tréner Ivan Belák.

V Afganistane spustili očkovaciu kampaň proti detskej obrne, ktorej cieľom je ochrániť približne 7,6 milióna detí vo veku do päť rokov. Taliban požiadal duchovných a miestnych vodcov, aby spolupracovali.

Desiatky ukrajinských dobrovoľníkov sa dnes v Košiciach zapojili do čistenia mesta. Ich cieľom je odvdáčiť sa Slovensku prostredníctvom dobrovoľníckej práce za prijatie a pomoc v čase núdze.

Petra Vlhová sa prihovorila fanúšikom, má pre nich dobré správy. Slovenská lyžiarka Petra Vlhová sa zotavuje po operácii kolena. Rehabilitácia podľa jej slov prebieha dobre.

Nová svetová iniciatíva plánuje zatočiť so zneužívaním spyvéru. Zapojil sa do nej aj Eset či Česko. Naopak jeho najväčší výrobca lobuje za jeho využívanie – na zlepšenie medzinárodnej bezpečnosti.

Inflácia v eurozóne rastie pomalšie. Dôvodom bol najmä pokles cien energií a miernejší rast cien potravín.

Preskočiť na 2. otázku

Ako výrazne cítite nasledujúce pocity v tomto momente?

1 - veľmi slabý pocit, 2 - slabý pocit, 3 - stredný pocit, 4 - silný pocit, 5 - veľmi silný pocit

2.

Zvedavosť

*Označte iba jednu elipsu.

veľmi slabý pocit

1

2

3

4

5

veľmi silný pocit

3.

Zúfalosť

*

Označte iba jednu elipsu.

veľmi slabý pocit

1

2

3

4

5

veľmi silný pocit

4.

Nabudenosť

*

Označte iba jednu elipsu.

veľmi slabý pocit

1

2

3

4

5

veľmi silný pocit

5.

Rozrušenosť

*

Označte iba jednu elipsu.

veľmi slabý pocit

1

2

3

4

5

veľmi silný pocit

6.

Odolnosť

*

Označte iba jednu elipsu.

veľmi slabý pocit

1

2

3

4

5

veľmi silný pocit

7.

Previnilosť

*

Označte iba jednu elipsu.

veľmi slabý pocit

1

2

3

4

5

veľmi silný pocit

8.

Strach

*

Označte iba jednu elipsu.

veľmi slabý pocit

1

2

3

4

5

veľmi silný pocit

9.

Nepriateľskosť

*

Označte iba jednu elipsu.

veľmi slabý pocit

1

2

3

4

5

veľmi silný pocit

10.

Nadšenie

*

Označte iba jednu elipsu.

veľmi slabý pocit

1

2

3

4

5

veľmi silný pocit

11.

Hrdosť

*

Označte iba jednu elipsu.

veľmi slabý pocit

1

2

3

4

5

veľmi silný pocit

12.

Podráždenie

*

Označte iba jednu elipsu.

veľmi slabý pocit

1

2

3

4

5

veľmi silný pocit

13.

Bdelosť

*

Označte iba jednu elipsu.

veľmi slabý pocit

1
2
3
4
5

veľmi silný pocit

14.

Hanba

*

Označte iba jednu elipsu.

veľmi slabý pocit

1
2
3
4
5

veľmi silný pocit

15.

Inšpirácia

*

Označte iba jednu elipsu.

veľmi slabý pocit

1
2
3
4
5

veľmi silný pocit

16.

Nervozita

*

Označte iba jednu elipsu.

veľmi slabý pocit

1
2
3
4
5

veľmi silný pocit

17.

Odhodlanie

*

Označte iba jednu elipsu.

veľmi slabý pocit

1
2

3

4

5

veľmi silný pocit

18.

Pozornosť

*

Označte iba jednu elipsu.

veľmi slabý pocit

1

2

3

4

5

veľmi silný pocit

19.

Panika

*

Označte iba jednu elipsu.

veľmi slabý pocit

1

2

3

4

5

veľmi silný pocit

20.

Aktivita

*

Označte iba jednu elipsu.

veľmi slabý pocit

1

2

3

4

5

veľmi silný pocit

21.

Obavy

*

Označte iba jednu elipsu.

veľmi slabý pocit

1

2

3

4

5

veľmi silný pocit

Aký máte postoj k nasledujúcim tvrdeniam?

1 - silne nesúhlasím, 2 - nesúhlasím, 3 - neutrálny, 4 - súhlasím, 5 - silne súhlasím

22.

Väčšina ľudí je v podstate čestná.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

23.

Väčšina ľudí je dôveryhodná.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

24.

Väčšina ľudí je v podstate dobrá a milá.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

25.

Väčšina ľudí dôveruje ostatným.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

26.

Dôverujem ľuďom.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

27.

Väčšina ľudí reaguje v dobrom, keď im ostatní dôverujú.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

Ako vnímate nasledujúce správanie?

0 - nikdy neospravedlniteľné až 10 - vždy dokonale ospravedlniteľné

28.

Uchádzanie sa o štátne dávky, na ktoré človek nemá nárok.

*

Označte iba jednu elipsu.

nikdy neospravedlniteľné

1

2

3

4

5

6

7

8

9

10

vždy dokonale ospravedlniteľné

29.

Vyhýbanie sa poplatkom za verejnú dopravu

*

Označte iba jednu elipsu.
nikdy neospravedlniteľné

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

vždy dokonale ospravedlniteľné

30.

Kradnutie majetku

*

Označte iba jednu elipsu.
nikdy neospravedlniteľné

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

vždy dokonale ospravedlniteľné

31.

Daňové podvody

*

Označte iba jednu elipsu.
nikdy neospravedlniteľné

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

vždy dokonale ospravedlniteľné

32.

Prijatie úplatku a konanie tomu zodpovedajúce

*

Označte iba jednu elipsu.
nikdy neospravedlniteľné

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

vždy dokonale ospravedlniteľné

Vyjadrite postoj k nasledujúcim tvrdeniam:

1 - silne nesúhlasím, 2 - nesúhlasím, 3 - neutrálny, 4 - súhlasím, 5 - silne súhlasím

33.

Pomáhať druhým je zvyčajne strata času.

*

Označte iba jednu elipsu.

silne nesúhlasím

- 1
- 2
- 3
- 4
- 5

silne súhlasím

34.

Keď mám príležitosť, rád/rada pomáham iným, ktorí to potrebujú.

*

Označte iba jednu elipsu.

silne nesúhlasím

- 1
- 2
- 3
- 4
- 5

silne súhlasím

35.

Ak je to možné, vrátil/a by som stratené peniaze ich právoplatnému majiteľovi.

*

Označte iba jednu elipsu.

silne nesúhlasím

- 1
- 2

3

4

5

silne súhlasím

36.

Pomáhať priateľom a rodine je jednou z najväčších radostí v živote.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

37.

Ak by som mohol/mohla, vyhol/vyšla by som sa pomoci niekomu v núdzovej situácii.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

38.

Pomáhať druhým v núdzi je úžasný pocit.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

39.

Dobrovoľnícka pomoc niekomu je veľmi obohacujúca.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

40.

Nerád/nerada dávam pokyny cudzím ľuďom, ktorí sa stratili.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

41.

Vykonávanie dobrovoľníckej práce mi prináša pocit šťastia.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

42.

Každý mesiac venujem čas alebo darujem peniaze na charitatívne účely.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

43.

Pomoc starším ľuďom nie je mojou povinnosťou, pokiaľ nie sú súčasťou mojej rodiny.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

44.

Deti by sa mali učiť o dôležitosti pomoci druhým.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

45.

Keď zomriem, plánujem darovať svoje orgány s nádejou, že pomôžu žiť niekomu inému.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

46.

Snažím sa ponúknuť svoju pomoc pri všetkých aktivitách, ktoré organizuje moja komunita alebo vykonávajú školské skupiny.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

47.

Keď pomôžem iným, cítim sa spokojný/á sám/sama so sebou.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

48.

Ak by osobe predou mnou v rade pri pokladni v obchode chýbalo pár centov, doplatil/a by som rozdiel.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

49.

Cítim sa hrdo, keď viem, že moja štedrosť priniesla prospech človeku v núdzi.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

50.

Pomoc ľuďom viac škodí ako pomáha, pretože sa začnú spoliehať na iných a nie na seba

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

51.

Málokedy prispejem peniazmi na ušľachtilú vec.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

4

5

silne súhlasím

52.

Poskytovanie pomoci chudobným je správna vec.

*

Označte iba jednu elipsu.

silne nesúhlasím

1

2

3

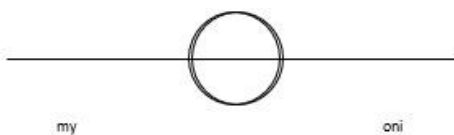
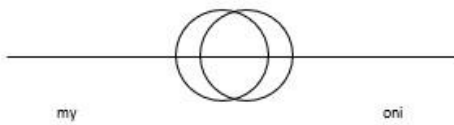
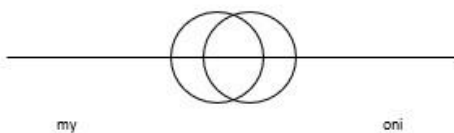
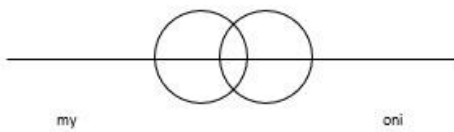
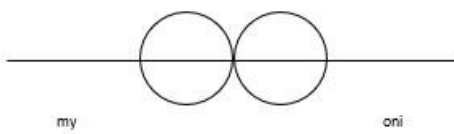
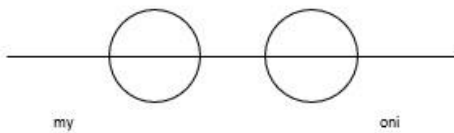
4

5

silne súhlasím

Označte obrázok, ktorý najlepšie popisuje blízkosť skupín:

Zhora: 1 - prvý obrázok, 2 - druhý obrázok, 3 - tretí obrázok...



53.

Ktorý obrázok, ktorý najlepšie popisuje blízkosť skupín my a oni? *

Označte iba jednu elipsu.

1

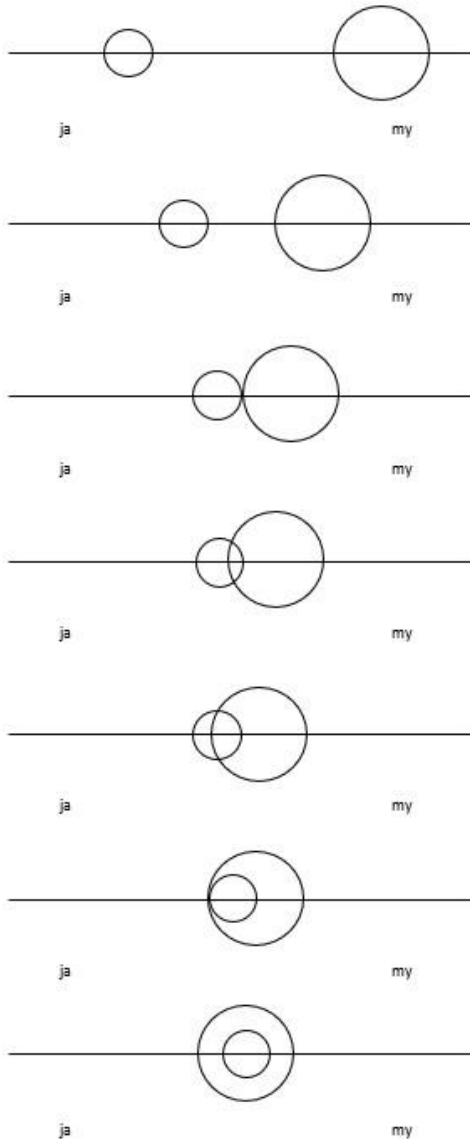
2

3

4

5
6
7

Označte obrázok, ktorý najlepšie popisuje Vašu blízkosť k skupine:
Zhora: 1 - prvý obrázok, 2 - druhý obrázok, 3 - tretí obrázok...



54.

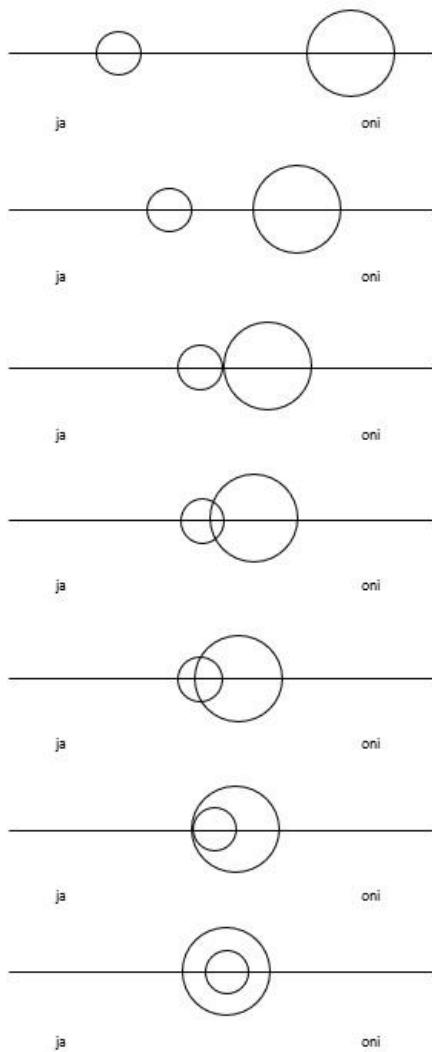
Ktorý obrázok najlepšie popisuje blízkosť skupín ja a my?

*

Označte iba jednu elipsu.

1
2
3
4
5
6
7

Označte obrázok, ktorý najlepšie popisuje Vašu blízkosť skupine:
Zhora: 1 - prvý obrázok, 2 - druhý obrázok, 3 - tretí obrázok...



55.

Ktorý obrázok najlepšie popisuje blízkosť skupín ja a oni?

*

Označte iba jednu elipsu.

- 1
- 2
- 3
- 4
- 5
- 6
- 7

Ďalšie otázky

56.

Vek (číslo)

*

57.

Pohlavie

*

Označte iba jednu elipsu.

Mužské
Ženské

58.

Najvyššie dosiahnuté vzdelanie

*

Označte iba jednu elipsu.

Žiadne

Základoškolské

Stredoškolské bez maturity

Stredoškolské s maturitou

Vysokoškolské prvého stupňa

Vysokoškolské druhého stupňa

Vysokoškolské tretieho stupňa

59.

Koľko času stráveného na sociálnych sieťach denne venujete správam a aktualitám?
(číslo, v hodinách)

*

60.

Koľko času denne venujete sledovaniu správ z iných online zdrojov okrem sociálnych
sietí? (číslo, v hodinách)

*

61.

Koľko času denne venujete sledovaniu televíznych správ? (číslo, v hodinách)

*

62.

Koľko času denne venujete spravodajským reláciám v rádiu? (číslo, v hodinách)

*

63.

Koľko času denne venujete spravodajským podcastom alebo podcastom o kriminálnych
prípadoch? (číslo, v hodinách)

*

64.

Praktizujete nejaké náboženstvo?

*

Označte iba jednu elipsu.

Áno

Nie