
RESEARCH ARTICLES
ДОСЛІДНИЦЬКІ СТАТТІ

Making up Real Media Reports' Sample on COVID-19 for Use in Experimental Studies

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ABSTRACT

The article reveals the procedure of selecting real media reports (RMR) on the COVID-19 pandemic in experimental studies. We assumed that RMR during the pandemic and several lockdowns had a real impact on people from different social groups. To monitor messages about COVID-19, we used the online service "Software product LOOQME". The algorithm to form the RMR sample was as follows: (a) search for all media messages available on the platform, (b) analysis of selected RMR by online service, (c) forming of an experimental content sample and its embedding in the experiment. The method of selecting RMR considered in this article includes a theoretical rationale for RMR; broad thematic selection of RMR using media monitoring systems; forming an experimental content sample with the use of parameters and selection criteria; additional procedure for rating the selected RMR according to a particular criterion with the participation of experts.

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АНОТАЦІЯ

У статті розглядається процедура відбору реальних медіаповідомлень про пандемію COVID-19 для використання їх в експериментальних дослідженнях, що проводилися в рамках наукового проєкту «Стресогенні елементи латентного впливу реальних медійних повідомлень про пандемію COVID-19 на соціальні групи», фінансованого Національним фондом досліджень України. Ми виходили з того, що РМП (реальні медіаповідомлення) під час пандемії та карантинів чинять реальний вплив на людей із різних соціальних груп. Як важливо фокусувати увагу дослідників на формуванні вибірки піддослідних, так і важливо точно розуміти та обґрунтовувати у своїх працях, чому саме певні новинні історії відбираються для застосування в експериментальних дослідженнях.

Для моніторингу повідомлень на тему COVID-19 ми використали онлайн-сервіс «Програмний продукт LOOQME (Сервіс моніторингу та аналізу згадувань у засобах масової інформації та соціальних медіа LOOQME)».

Алгоритм роботи для формування вибірки РМП був такий: (а) організація пошуку усіх, присутніх на платформі у стрічці новин медіаповідомлень, і відбір за визначеними параметрами тих, які відповідають критеріям РМП, (б) аналіз відібраних РМП засобами онлайн-сервісу, (в) формування експериментальної вибірки і включення її в експеримент.

Запропоновані процедури відбору медіаповідомлень на тему COVID-19 для проведення експерименту з вивчення латентного стресогенного впливу РМП на аудиторію, що належить до різних соціальних груп, варто розглядати як пошук методики відбору медіаповідомлень за контентом для формування експериментальної вибірки. Представлена методика безперечно повинна пройти апробацію і може бути універсальною за процедурами для використання в подібних експериментах.

Розглянута у цій статті методика відбору реальних медіаповідомлень включає: теоретичне обґрунтування поняття РМП; загальний тематичний відбір РМП за допомогою медіамоніторингових систем (онлайн-сервісів); формування експериментальної вибірки РМП із застосуванням параметрів та критеріїв відбору; додаткова процедура рейтингування відібраних РМП за визначеним критерієм з участю експертів.

КЛЮЧОВІ СЛОВА: реальне медіаповідомлення, COVID-19, шкала актуальності тем, негативні РМП, процедури відбору медіаповідомлень.

Introduction

This article focuses on real media reports (RMR) on COVID-19 that function in the public discourse during pandemics and seriously affect people belonging to different social groups. In particular, we considered RMR in terms of functioning when they are of interest to researchers as experimental material used to study the latent stressful effects on members of different social groups. During the experiment preparation, several questions arose: what messages can be considered real, i.e., "alive" in terms of their relevance to the society; how to "catch," record such messages and select them for the experiment; how to avoid obsolescence of messages, i.e., loss of their relevance, and thus, their unsuitability for the investigation.

Therefore, the purpose of this article is to describe the procedures for capturing RMR from a live stream of media messages and selecting them for the experiment. Note that our recording and selection procedures can make sense while examining media messages of any topic.

Thus, to study the latent impact of media reports about COVID-19 on social groups, it is first necessary to form a database of such messages and their experimental sample.

Sampling should meet two criteria:

(1) media messages should be relevant to the media audience, i.e., exist in the space-time continuum in which the audience is, and be carriers of the psychological states experienced by the audience. In other words, media messages should "feed" a "COVID-19" discourse, because outside of it, the news will not cause the same reactions (effects) in the audience that they caused in the context of the discourse;

(2) media messages should be "removed" from the top of the thematic messaging system, which is determined by the percentage of the COVID-19 topic from other relevant issues at the time of selection.

To denote media messages that meet these two criteria, we proposed in 2020 the term real media reports (RMR):

... we should understand RMR as those messages that are relevant and "alive" in the real spatial and temporal continuum of communication. Because the peculiarities of perception and understanding messages significantly depend on the environmental conditions of perception and the emotional and mental state of the recipients. Media audiences can be in two states: passive, when "experiencing" an issue is already inhibited, fades into the background, deactivates. In this view, the perception of the message on an irrelevant issue will be different from the same message should it be perceived at the time of active experience, when everyone is excited and "knowingly" discusses the events, waiting for the solution, the outcome of the event and so on. Under the latter option, we mean the active state of the media audience. Media effects in this state are completely different from the passive. Consequently, the effectiveness of media messages is also different. Thus, media messages during the active state of the media audience are called RMR" (Rizun et al., 2020, p. 14).

Researchers have been studying the impact of news content on the audience for a long time. New hypotheses and theories of media effects are constantly emerging. Unfortunately, communication science has not created a unified theory (and there is doubt that this will ever happen and whether there is a real need for it).

However, according to some scholars (Reeves et al., 2016), the research paradigm of media effects combines so many different theoretical approaches that there is a need to identify the main criteria for content in research. After all, it is the content of the media that acts as an independent variable. Reeves and colleagues argue that media effects research pays much more attention to dependent variables (people's behavior under the influence of the media, anxiety, depression, mood swings, etc.). Some fundamental theories, such as the agenda-setting theory (AST) and the cultivation hypothesis (CH), demonstrate this approach. AST considers content only in general terms. Content refers to specific topics or issues that are broadly interpreted and are indicated only in one or two words without much detail: "domestic policy," "economic crisis," "corruption or scandals". It explains the high correlation between the so-called media agenda and public agendas - 0.9 (McCombs & Shaw, 1972).

On the other hand, the cultivation hypothesis does not distinguish content genres (Gerbner et al., 1994). Mostly its adherents rely on self-reports when respondents fill out special diaries about what programs and how long they watched. Although this approach considers the impact of RMR, in our terminology, this approach eliminates the researcher's intervention in the selection of content for media effects studies but only captures the actual media perception (Potter & Chang, 1990).

Against this background, we observe some attempts to systematize approaches to selecting and analyzing the independent variable of media effects research, i.e., the content. In the article "The use of media in media psychology", Reeves and colleagues emphasize that the bulk of studies explain why specific content samples were used in the study too poorly. According to Reeves and colleagues, this approach is essentially wrong (Reeves et al., 2016) because scholars should pay equal attention to arranging the participant and content samples. A balance between both variables has the biggest priority. By adhering to the criteria of objectivity and the representativeness of the selection, scholars can maintain this balance. I.e., the units of information demonstrated in the course of research are typical and specific for their thematic or geographical segments.

Typically, media effects research relies on one of two content selection strategies for empirical research, whether it is observation or experiment:

1. Researchers select news reports from the pool of several hundred for a certain period. Their number narrows down by cutting off those units of information that do not meet or less meet the criteria necessary for the study. American scholars Lang (Lang et al., 1999; Lang et al., 2013) and Grabe (Grabe et al., 2000; Grabe et al., 2001; Grabe et al., 2003) applied this approach in their research. Overall, it is a sound method of selecting content for social communications, when readers and other scholars will then have a minimum of questions such as "why did you use this content in the study?" (Havrylets et al., 2016).

2. Researchers select news reports randomly: from a pool of media messages for a certain period using a random number generator, they choose the necessary experimental content. This approach is much less widespread (e.g., Rojkova et al., 2015) and assumes no researcher's influence on selecting content. Still, the disadvantage of this selection option is difficulty in taking into account many (more than 2-3) variables in the analysis of research data.

3. Szabo and Hopkinson (2007) applied the least common approach. The researchers solely recorded TV news reports on the morning of the experiment day. As we may infer, researchers do not manipulate content selection in this case. But scholars reach the top novelty of media content for experiments and, thus, the perceived reality of the content in subjects. However, not all news items we see today are the same on the experiment day. Some attract a more significant share of audience attention, others significantly less. How can we explain this? First of all, with the status of the material: if it is news on a relevant topic, it will attract more audience. This trend is more relevant when discussing negative news.

What makes negative news so popular? The audience acknowledges that there is too much violence, disasters, and war in the media but continues to watch content that strikes it. White-Venables (2012) refers to a news message as a risk signal. Humans, like higher primates, constantly unconsciously monitor the environment for possible physical danger or threats. Two dimensions

characterize the magnitude of this risk signal: 1) magnitude of change (before and after the event); 2) relevance of this change for the safety of a person or group of people. These are two "whales" that hold public interest in the news. Sensational tabloid articles with the absent personal importance of the event for a particular reader may be of little interest to him. And this will allow journalists to unleash the potential of the news only in half for this reader. According to White-Wenables, journalists often manipulate these two dimensions: the degree of change and the relevance of the event for personal security - to maximize the success of a particular message. They do this by amplifying and changing accents - frames.

Instead, Landau (2016) argues that there is a certain threshold of relevance in the perception of news reports. If the news is more relevant than this threshold, then this topic is at its peak; it is wide open for discussion in society. However, we should bear in mind that the journalist affects the measurement of relevance minimally or indirectly by creating a specific agenda. Instead, under the greater control of journalists and gatekeepers is the first dimension - how drastic is the change of current state, which is the essence of the news.

Our article considers RMR based on the second dimension - relevance.

Journalists and media editors manipulate the threshold of relevance by raising or lowering this threshold. And at any given time, if the entry is high, few topics about current events and socially significant issues are at their peak. Accordingly, the specific concentration of relevance for each message will be higher. Instead, such a threshold may be lower in periods with no drastic changes or threats, and the number of topics discussed will be higher.

The recipient has a limited ability to process media information, according to the work of Lang and her LC4MP (Limited Capacity Model of Mediated Message Processing) (Lang, 2000). According to this approach, there is a certain threshold of perception of media content when the viewer can remember the messages seen or read. Because to discuss an issue, one should first pay attention to it and then recollect it, and we assume that the threshold of perception of Lang and the point of the relevance of Landau may correlate. Scholars should investigate this question with more focus on experiments in future research.

The perceived reality of a particular media message is its relevance in society. And this context is the most engaging for us. After all, if the topic is relevant, it is actively discussed in society, and then the stories about it will be interesting to audiences (e.g., Thomas et al., 2020). Therefore, we consider such media reports as real.

We should mention that in the vast majority of media effects studies, in fact, consciously or unconsciously, researchers study the impact of RMR, not those outdated or no longer relevant.

Methods

To monitor messages on the topic of COVID-19, first of all, we found a technological platform for searching and processing media messages. To this end, we used the online service "Software product LOOQME (Service for monitoring and analysis of mentions in the media and social media LOOQME)" (<https://looqme.io/uk>).

At the first stage of the research organization, it is necessary to form a sample of RMR to describe a monitoring technique and selection of such messages. Therefore, we focused our previous study on the peculiarities of the monitoring procedure (Rizun et al., 2020).

The algorithm for forming the RMR sample is as follows: (a) search of all available media messages on the platform in the news feed, and selecting by specific parameters those that meet the RMR criteria, (b) analysis of selected RMR by online service, (c) making up experimental content sample and its embedding within the experimental settings.

1. Working with the News Feed.

Newsfeed options.

Working with the news feed of the online resource LOOQME involves the organization of basic search queries and the actual search for media messages for these queries.

The object of the search (daily and at random) was COVID-19.

Types of Ukrainian media sources: television, radio, news agencies, Internet (see list in Annex 2).

Tags: vaccination, consequences of vaccination, quarantine, pandemic, PCR test, reaction to the vaccine, and symptoms.

The role of the search object: primary, secondary, episodic. That is any mention of COVID-19 in the message.

The tone of the messages: negative, positive, neutral. This message attribute was assigned manually, in particular, by online service experts.

Geography of messages: country, region, city, i.e., all Ukrainian media were covered.

We took into account all available sources and authors.

The news feed allowed scholars to search by famous words (by frequency). Initially, we included all messages in the news feed, and in the "Popular words" tab, users can view the most frequent words in the array of these messages and make a selection by one or more frequency words.

In addition, only original media messages can get into the news feed, i.e., without duplicates of these messages. However, the system indicates the number of all found messages (with dubbing) and the percentage of messages by emotional tone and role.

Search procedure.

Preparing for forming an experimental sample that is necessary to track the issue's trend against the background of the daily number of messages (in terms of online resource - mentions). This procedure should be performed daily according to the reports prepared by online resource experts (see Appendix 1 for an example report). Having recorded the trend of COVID-19 theme in the spatio-temporal continuum of communication (STCC) in the form of stable daily indicators of media messages on this topic or the growth of these indicators, we checked the level of actualization of the issue in society (LATS) due to COVID-19 topics in STCC. I.e., for other topics, we allocate a nine-day observation period, at the end of which the experiment will take place, provided that the LATS will remain high throughout the period. Such a topic life cycle (TLC) is crucial for the organization of the experiment, as there is a chance to capture and select RMR, i.e., those messages that will be the focus of the topic (FT). If suddenly TLC experiences a drop in FT during the forecast period, which will be the result of underestimation of the LATS, in this case, it is necessary to suspend the definition of LATS, as obtaining RMR will be at risk. Therefore, it is essential to observe the tendency of topic development and its TLC and allocate another nine days to track LATS and postpone the experiment.

We began monitoring TLC for COVID-19 on February 26, 2021, at 6:00 PM (we received the first report from LOOQME under the agreement right at this time). It was a period when the lockdown intensified in the country and the world. The Ministry of Health discussed the issue of vaccination and the first side effects in response to the vaccine. According to the report, the morning news that AstraZeneca plans to develop a new generation of vaccines by the fall of 2021 actively spread during the day (See Table 1). This news had the largest share of distribution - 16.2% (41 duplications of the original).

Table 1. Top 10 news

| ТОП-10 Новостей | | | |
|-----------------|---|----------|-------|
| # | Значение характеристики | Доля (%) | Дубли |
| 1 | AstraZeneca планирует разработать новое по... | 16,2 | 41 |
| 2 | На Луганщине начали вакцинацию военных... | 4,7 | 12 |
| 3 | Fitch подтвердило рейтинг Украины на уров... | 3,6 | 9 |
| 4 | У Луганській області розпочалася вакцинаці... | 2,8 | 7 |
| 5 | До лікарень ЄС почали доставляти роботів-д... | 2,4 | 6 |
| 6 | В семи областях Украины вскоре могут вес... | 2,4 | 6 |
| 7 | Степанов встретился с послами G7 для обсу... | 2,4 | 6 |
| 8 | Всего один укол. Вакцина Johnson & Joh... | 2,4 | 6 |
| 9 | Палата представителей одобрила подготовл... | 2,4 | 6 |
| 10 | Кабмин планирует продавать COVID-вакцин... | 1,6 | 4 |
| 11 | Другие | 59,3 | 150 |

Among the sources with a high monthly audience coverage of 419.9 million (see Table 2), the largest share was reported by Minister of Health Stepanov, who met with G7 ambassadors to discuss a joint response to the pandemic, unsatisfactory vaccination rates in the country, the explosion at the Chernivtsi coronavirus hospital.

Table 2. Top 10 news (by coverage)

| ТОП-10 Новостей (По охватам) | | | |
|------------------------------|---|----------|------------|
| # | Значение характеристики | Доля (%) | Охваты |
| 1 | Произошел взрыв в городской больнице в Че... | 1,9 | 41990000 |
| 2 | Степанов встретился с послами G7 для обсу... | 1,9 | 41990000 |
| 3 | Темпы вакцинации от коронавируса в стран... | 1,9 | 41990000 |
| 4 | Основная версия трагедии в Черновцах - сам... | 1,9 | 41990000 |
| 5 | З понеділка Чернівецька область стає "черво... | 1,2 | 27070000 |
| 6 | Коронавірус у Києві: 580 нових випадків, 111... | 1,2 | 27070000 |
| 7 | В Україні знову більше 8 тисяч випадків COV... | 1,2 | 27070000 |
| 8 | На Буковині четвертий день фіксують нові р... | 1,2 | 27070000 |
| 9 | Новини 26 лютого: рішення РНБО, невдалий... | 1,2 | 27070000 |
| 10 | Головні новини п'ятниці і ночі: рішення РНБ... | 1,2 | 27070000 |
| 11 | Другие | 85,1 | 1887265450 |

TLC for COVID-19, generated by reports from the online resource, see Figure 1. The blue “mention” graph and Table 4 show a steady increase in the audience's interest in the COVID-19 as a monitoring object. On average, we recorded 1369,8571 mentions on this subject for the specified period. Standard deviation $\sigma = \pm 403,877$; the coefficient of variation is $v = 29\%$, which indicates the homogeneity of mentions’ data for this period. A sharp decline is observed only on weekends.

The rise above 1774 indicates the particular importance of the COVID-19 issue in reports during the day.

Monthly observing the topic and the increasing trend in the number of mentions of the COVID-19, experimenters observed social processes. However, understanding that the coronavirus issue will not suddenly disappear from STCC, we chose April 7 and the transition to the following procedure - LATS inspection. Therefore, a few days before the experiment, it was necessary to start monitoring the dynamics of the COVID-19 issue, among other day topics. This test began on March 29, 2021, and lasted until April 4, 2021, nine days before the experiment. The nine-day period is a relative parameter, subjectively determined by the experimenters. In any case, intuitively, this can not be less than a week because the decline of the topic, as we see, is related to the weekend, so the weekly period is part of the TLC.

The observation showed a significant predominance of COVID-19 in the STCC (See Table 3) - 75.2% belonged to this topic, among others. To characterize the LATS, we use the coefficient (c.L.), which we determine by the formula, where wmmc - the weight of media messages coefficient (the ratio of the COVID-19 to other topics in all messages), and twc - the topic weight coefficient for the topic (the ratio of messages per COVID-19 topic to all messages):

$$c.L. = twc \times wmmc$$

We interpreted c.L. in our previous article (Rizun et al., 2020, p. 15).

Table 3. Topic map

| Topic | Number of Mentions | | | | | | | | | | Share in the array, % |
|-----------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----------------------|
| | Total | 29. 03 | 30. 03 | 31. 03 | 01. 04 | 02. 04 | 03. 04 | 04. 04 | 05. 04 | 06. 04 | |
| Politics | 2485 | 343 | 359 | 371 | 300 | 287 | 254 | 225 | 178 | 168 | 14,14 |
| Economy | 1048 | 120 | 126 | 133 | 130 | 126 | 110 | 105 | 100 | 98 | 5,97 |
| Defense | 736 | 96 | 102 | 99 | 87 | 80 | 67 | 71 | 66 | 68 | 4,19 |
| Education | 88 | 8 | 14 | 21 | 10 | 7 | 6 | 9 | 6 | 7 | 0,5 |
| COVID-19 | 13213 | 1657 | 2000 | 1987 | 1564 | 1723 | 1132 | 753 | 1276 | 1121 | 75,2 |
| Total | 17570 | 2224 | 2601 | 2611 | 2091 | 2223 | 1569 | 1163 | 1626 | 1462 | 100 |
| c.L. | 0,1504 | 0,149 | 0,1537 | 0,1522 | 0,1495 | 0,155 | 0,1442 | 0,129 | 0,1569 | 0,1533 | |

We consider pertinent c.L. = 0.15 for this study because the media daily saturated 75% of the discourse with COVID-19, which is an essential indicator for understanding that society in absolute terms was 75 percent immersed in the topic. The basic argument for this decision was the fact that according to Diagram (Figure 1) and Table 4, 31.03 subtopics for the COVID-19 had the highest

MV (media visibility) index for all TLC: “Media Visibility Index is an indicator of visibility... in media and quality of content media field mentions. For the calculation, we take into account the parameters of the publication (role of mention, tone) and the source (type and level of media)” (<http://help.looqme.io/ru/articles/3331542-%D1%89%D0%BE-%D1%82%D0%B0%D0%BA%D0%B5-%D1%96%D0%BD%D0%B4%D0%B5%D0%BA%D1%81-%D0%BF%D0%BE%D0%BC%D1%96%D1%82%D0%BD%D0%BE%D1%81%D1%82%D1%96-%D0%B2-%D0%B7%D0%BC%D1%96-mv>). It was calculated with the formula:

$$MV = MV1 + MV2 + MV3 + \dots MVn$$

It is also worth noting that according to the scale of topic relevance (see Table 12), the indicator of c.L. 0.15 for five-topic samples is quite acceptable.

Reports on COVID-19 from March 29 to April 6 were in the focus of high media attention (see Table 3), i.e., FT (we define FT as the ratio of messages on the topic to other messages during the day in one media (Rizun et al., 2020, p.15)). The topic in focus means that in all daily issues, this topic is one hundred percent in this media, i.e., the maximum FT is 100%. Thus, there was every reason to proceed to the selection of RMR.

Overall, RMR selection cannot only occur during the LATS inspection period. The procedure for determining c.L. is more precise when it is necessary to confirm researchers' forecast that the flow of media messages on a given topic is significant, dynamic, and growing, essential for the daily media agenda. From the news feed, scholars can select those messages that appeared during the media monitoring period, i.e., from February 26 to April 6, and the number of mentions is within the standard deviation of mentions $\sigma = \pm 403,877$, i.e., within 966 - 1774. It means that all COVID-19 messages are RMR if they exist within the standard deviation of references. Messages beyond 1774, well "embedded" in the audience's minds, were the focus of its attention but with particular connotations. Because the media space that day was for some reason overwhelmed with "coronavirus" messages, for which there were probably essential grounds.

Thus, we selected 11 RMR from a vast pool of reports (see Annex 3). All of them are from within the standard deviation, except for RMR 1 (1987 as of March 31) and 11 (1847 as of March 16). These RMR are salient with a negative tone since we focused on the messages with a negative connotation. Nevertheless, messages are primarily high on average for their source (see Table 5).

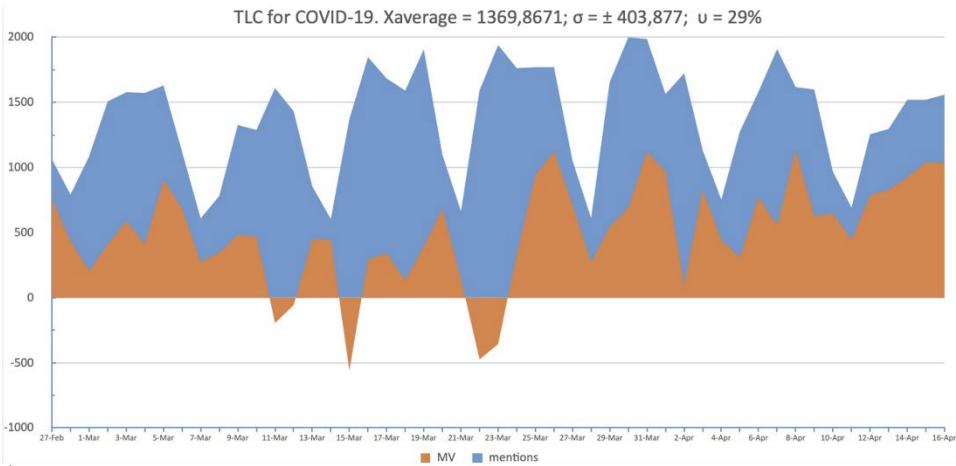


Figure 1. The topic life cycle for COVID-19.

Table 4. The topic life cycle for COVID-19

| Date | Mentions | Coefficient of media visibility (MV) |
|--------|----------|--------------------------------------|
| 27.Feb | 1064 | 759,96875 |
| 28.Feb | 791 | 435 |
| 01.Mar | 1085 | 205,3125 |
| 02.Mar | 1507 | 407,5 |
| 03.Mar | 1578 | 590,5625 |
| 04.Mar | 1572 | 411,09375 |
| 05.Mar | 1630 | 907 |
| 06.Mar | 1121 | 682,4375 |
| 07.Mar | 609 | 275,6875 |
| 08.Mar | 781 | 345,375 |
| 09.Mar | 1326 | 483,5625 |
| 10.Mar | 1288 | 467,03125 |
| 11.Mar | 1610 | -195,15625 |
| 12.Mar | 1432 | -57,4375 |
| 13.Mar | 856 | 449,25 |
| 14.Mar | 604 | 445,875 |
| 15.Mar | 1373 | -559,5 |
| 16.Mar | 1847 | 293,65625 |
| 17.Mar | 1684 | 339,96875 |
| 18.Mar | 1591 | 133,21875 |
| 19.Mar | 1907 | 395,15625 |
| 20.Mar | 1098 | 684,625 |
| 21.Mar | 663 | 143,9375 |
| 22.Mar | 1593 | -474,59375 |
| 23.Mar | 1940 | -356,25 |
| 24.Mar | 1763 | 335,625 |
| 25.Mar | 1770 | 941,71875 |
| 26.Mar | 1770 | 1123,5625 |
| 27.Mar | 1051 | 711,625 |
| 28.Mar | 610 | 273,1875 |
| 29.Mar | 1657 | 545,1875 |
| 30.Mar | 2000 | 691,84375 |
| 31.Mar | 1987 | 1120,5625 |
| 01.Apr | 1564 | 967,65625 |
| 02.Apr | 1723 | 91,5 |
| 03.Apr | 1132 | 829,625 |
| 04.Apr | 753 | 442,71875 |
| 05.Apr | 1276 | 310,34375 |
| 06.Apr | 1582 | 772,28125 |
| 07.Apr | 1909 | 554,90625 |
| 08.Apr | 1617 | 1135,34375 |
| 09.Apr | 1599 | 626,75 |
| 10.Apr | 967 | 647,21875 |
| 11.Apr | 693 | 442,0625 |
| 12.Apr | 1255 | 786,84375 |
| 13.Apr | 1296 | 827,09375 |
| 14.Apr | 1520 | 923,84375 |
| 15.Apr | 1520 | 1039,375 |
| 16.Apr | 1559 | 1034,75 |

Table 5. News viewing on average for each source on the release date

| RMR | Number of views for each source | Number of views for an article in this source | Number RMR (original and duplicates) in a day |
|-----|---------------------------------|---|---|
| 10 | 15098 | 37992 | 31 |
| 11 | 15098 | 176227 | 7 |
| 4 | 5879 | 5457 | 31 |
| 7 | 3562 | 7626 | 22 |
| 9 | 2848 | | 2 |
| 3 | 780 | | 31 |
| 5 | 687 | | 16 |
| 8 | 643 | | 3 |
| 2 | 631 | | |
| 6 | 334 | | 22 |
| 1 | 316 | | 10 |

What are the final criteria for selecting these eleven RMR from the content pool? To answer this question, consider the following sampling procedure for experimental RMR.

2. Analysis of the selected RMR using the online service LOOQME.

The LOOQME online resource, in addition to the news feed, has an Analytics function. Thus, we processed messages according to specific parameters and visualized the analysis results.

How to select from 41674 RMR those 11 which potentially can get to the experimental sample? Every experimenter wants to find a selection procedure that would involve using unambiguous parameters to organize such selection. First of all, from the whole array of RMR, we selected those with a negative tone and ranked them according to the audience (Fig. 2).

Негатив

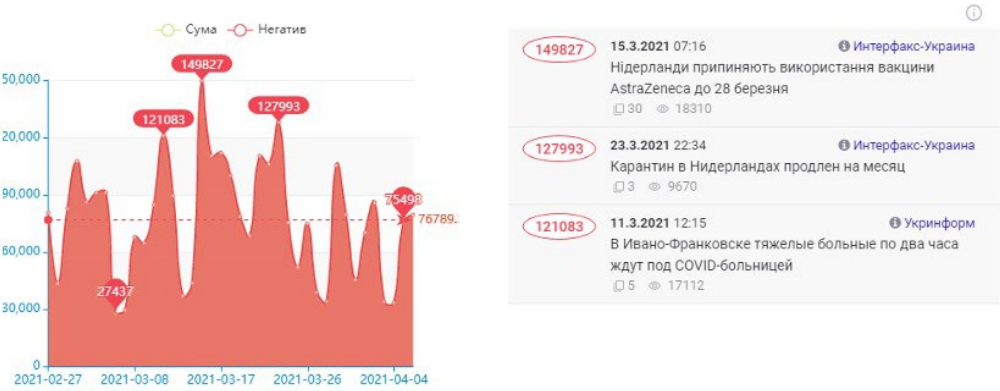


Figure 2. RMR with negative tone (27.02 – 6.04.2021)

The average audience coverage is 76789. Therefore, according to the sample, RMR with the highest mean coverage were to be included (Table 6), namely:

Table 6. Negative RMR with the highest audience reach for the day (27.02 - 6.04 2021)

| Date | Audience reach |
|--------|----------------|
| 27.Feb | 80470 |
| 01.Mar | 82658 |
| 02.Mar | 107545 |
| 03.Mar | 86177 |
| 04.Mar | 90856 |
| 05.Mar | 91085 |
| 10.Mar | 84820 |
| 11.Mar | 121083 |
| 12.Mar | 89479 |
| 15.Mar | 149827 |
| 16.Mar | 110288 |
| 17.Mar | 112060 |
| 18.Mar | 99950 |
| 19.Mar | 78690 |
| 21.Mar | 110268 |
| 22.Mar | 106106 |
| 23.Mar | 127993 |
| 29.Mar | 105420 |
| 30.Mar | 79598 |
| 02.Apr | 85789 |
| 06.Apr | 79479 |

As a result, 21 RMR could be included in the sample according to the parameter of negative tone.

Since media reports were monitored by several tags for the COVID-19, it is logical to look at the daily distribution of tags by frequency (Figure 3 and Figure 4).

Теги

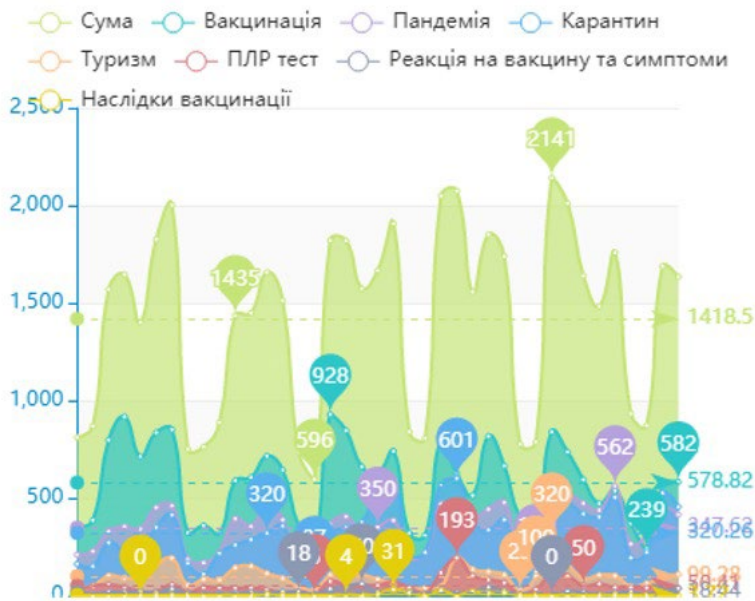


Figure 3. Daily distribution of tags (27.02 - 06.04 2021)

теги - таблиця

| # | | (%) | Підрахунок статей |
|---|--------------------------------|------|-------------------|
| 1 | Вакцинація | 40.8 | 22574 |
| 2 | Пандемія | 24.5 | 13557 |
| 3 | Карантин | 22.6 | 12490 |
| 4 | Туризм | 7.0 | 3872 |
| 5 | ПЛР тест | 3.6 | 1966 |
| 6 | Реакція на вакцину та симптоми | 1.3 | 719 |
| 7 | Наслідки вакцинації | 0.3 | 145 |

Figure 4. The overall distribution of tags (27.02 - 06.04 2021)

Most news reports, almost 41%, are covered by the tag "vaccination" during the monitoring period. For the researcher, this parameter allows making a decision: to include RMR with the tag "vaccination" in the experimental sample.

The daily tag distribution looks like this with an average report rate of 578.32 (see Table 7):

Table 7. Daily distribution of the tag "vaccination" (27.02 - 06.04 2021)

| <i>Date</i> | <i>Number of news reports</i> |
|-------------|-------------------------------|
| 01.Mar | 797 |
| 02.Mar | 917 |
| 03.Mar | 713 |
| 04.Mar | 835 |
| 05.Mar | 850 |
| 06.Mar | 605 |
| 07.Mar | 715 |
| 12.Mar | 643 |
| 15.Mar | 928 |
| 16.Mar | 845 |
| 19.Mar | 740 |
| 22.Mar | 795 |
| 25.Mar | 816 |
| 29.Mar | 839 |
| 31.Mar | 594 |
| 06.Apr | 582 |

As a result, 16 RMR could be included in the sample according to the parameter tag "vaccination". Thus, according to two parameters, we reduced the list of RMR to 12. I.e., RMR should be negative with the highest coverage and include the tag "vaccination". Highlighted with gray, Table 7 shows the dates corresponding to the two parameters.

However, there is another parameter that we can and should use for the selection of RMR - the role of monitoring subject - COVID-19 in the structure of media reports: primary, secondary, episodic.

With the leading role - the message is entirely about the topic (object) COVID-19. Therefore, it is logical to consider the RMR as the central role of the object. Figure 5 shows the result of the analysis of the negative tone filters for the tag "vaccination".

роль негатив вакцинація

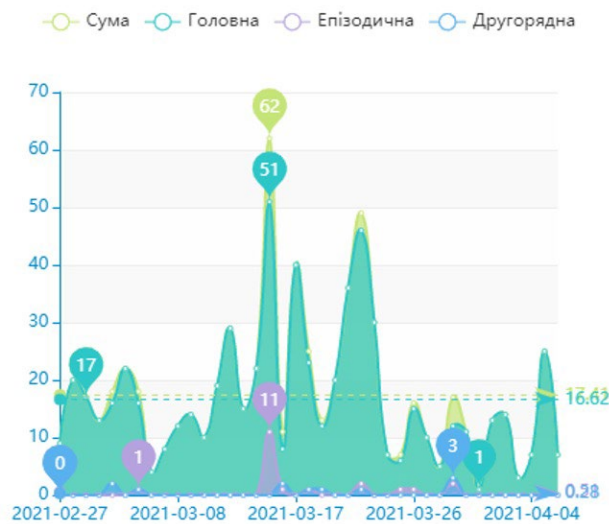


Figure 5. Daily distribution of messages by COVID-19 search object role

As a result of applying three parameters for selecting the content of RMR, we received the list of RMR consisting first of 7 items (data without gray selection), but then the final list contained 11 RMR. We added four more RMR (gray highlight) with below-average coverage for March 25 and March 31 since it was still essential to include RMR with the tag "vaccination" and the primary role of the search object^{and} April 2 RMR with high audience coverage. However, the latter text belongs to the lower than average messages with the tag "vaccination" and the leading role of the search object.

Table 8. The list of RMR consisting of 7 items

| Date | Number of RMR |
|--------|---------------|
| 15.Mar | 2 |
| 16.Mar | 1 |
| 22.Mar | 3 |
| 25.Mar | 2 |
| 29.Mar | 1 |
| 31.Mar | 1 |
| 02.Apr | 1 |

As a result, we had a list of 11 RMR (see Annex 3).

Results

We completed the selection of the RMR on April 2. Still, the monitoring of the TLC continued until April 6, the day before the experiment (monitoring took place after that until April 16). This procedure for monitoring online news reports was necessary to monitor the dynamics of topic development and to understand the fact that on the day of the experiment the same indicators were kept as the topic had before the measurement of LATS (see Figure 1. blue graph "mention", and Table 4). I.e., on the day of the experiment RMR must not lose perceived "reality". Otherwise, researchers risk distorting the results of the experiment. Hypothetically, if it so happened that suddenly from April 3, TLC started to change sharply, i.e., the schedule would record a sharp drop in mentions, it would be necessary to move back to c.L. and FT measurements. In this case, we should have perhaps postponed the experiment or canceled it because RMR would lose their "real" status. Such situations concerning a sharp break in TLC are quite possible if it was a question of any local event, not so significant for a society: two-three days discussed - and forgotten! However, with the topic of COVID-19, such predictions are unrealistic because the worldwide pandemic will remain in the durable discourse; it cannot disappear from the STCC suddenly and have signs of "postCOVID syndrome" or something like social anxiety syndrome or social anxiety disorder.

Monitoring reports after April 2 showed the stability of COVID-19.

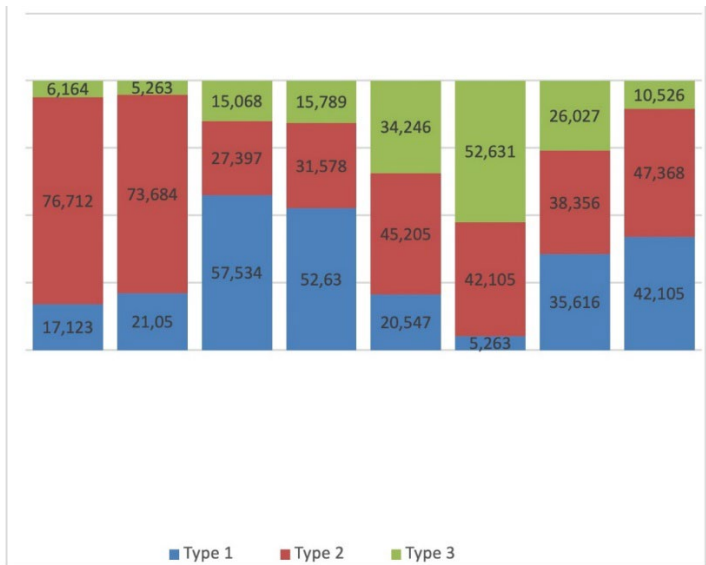
As part of the preparation of the RMR sample for the experiment, we conducted a pre-experimental "examination" of the RMR with the participation of subjects from the control group of the investigation, i.e., young people. These "experts" did not take part in the experiment.

21 respondents, selected from the control group of subjects, examined 11 RMR. Everyone among so-called experts accidentally fell into this group: someone could not participate further in the experiment due to lack of a webcam; someone abandoned the experiment; two were unable to complete the survey due to quarantine restrictions but were eager to be "useful" to the case. However, all subjects, except two, ID_XXXCE and ID_YYYCE, approximately two weeks before the experiment (from 23 to March 25) underwent an incoming, "recruiting" questionnaire to determine the types (portraits) of respondents in the categories of "attitude to the pandemic", "for media activity", "features of media consumption", "attitude to pandemic coverage in the media". Table 9 below presents the social portraits (types) of experts.

Table 9. Expert group

| respondent | Types | | | | Situational Test |
|------------|--------------------------|----------------|-------------------|-----------------------|------------------|
| | Attitude to the pandemic | Media activity | Media consumption | Pandemic in the media | |
| ID_149CE | situationist | active | skeptic | optimist | 7 |
| ID_129CE | calm | passive | skeptic | optimist | 10 |
| ID_153CE | situationist | passive | skeptic | pessimist | 14 |
| ID_159CE | pedant-panicker | medium-active | rationalist | optimist | 15 |
| ID_134CE | situationist | active | skeptic | optimist | 16 |
| ID_124CE | situationist | active | skeptic | optimist | 18 |
| ID_XXXCE | - | - | - | - | 18 |
| ID_164CE | pedant-panicker | active | skeptic | optimist | 19 |
| ID_118CE | situationist | medium-active | rationalist | pessimist | 20 |
| ID_146CE | pedant-panicker | active | rationalist | pessimist | 20 |
| ID_155CE | situationist | active | skeptic | realist | 20 |
| ID_130CE | situationist | passive | skeptic | pessimist | 21 |
| ID_145CE | ситуаціоніст | active | rationalist | realist | 22 |
| ID_148CE | pedant-panicker | passive | rationalist | pessimist | 27 |
| ID_132CE | situationist | active | skeptic | optimist | 30 |
| ID_YYYCE | - | - | - | - | 33 |
| ID_125CE | situationist | active | rationalist | optimist | 34 |
| ID_161CE | situationist | medium-active | trustful | pessimist | 36 |
| ID_156CE | situationist | passive | rationalist | pessimist | 37 |
| ID_154CE | situationist | active | rationalist | pessimist | 39 |
| ID_139CE | situationist | passive | skeptic | pessimist | 39 |

Note that in percentage terms, the types of experts have the following representation:



Types by categories (k1, k2, k3, k4):

Type 1: pedantic-panic type (k1); active (k2); trusting (k3); optimist (k4)

Type 2: situationist (k1); passive (k2); rationalist (k3); pessimist (k4)

Type 3: calm (k1); moderately active (k2); skeptic (k3); realist (k4)

Figure 6. Percentage of types in the general group and the expert group

Each type in one of the four categories appears in the expert group not evenly from the total number of each type, but there is a representation. Type 2 is represented in the expert group more or less evenly. Another pattern may be more interesting: the dependence of the experimental RMR' selection on the type of expert.

Before working with RMR, each expert underwent a situational test to assess the level of state anxiety (Spielberger-Khanin test). Two people (ID_149CE, ID_129CE) had low anxiety levels; six people (ID_YYYCE, ID_125CE, ID_161CE, ID_156CE, ID_154CE, ID_139CE) had moderate anxiety. There is no natural relationship between the types and anxiety levels in the group of experts.

The experts got the task: to read the text and determine on a scale from 0 (does not cause) to 5 (highest level of anxiety), what level of anxiety it could potentially cause to the reader (Annex 3).

Work with texts took place through Google form. The rating from the most alarming to the least alarming RMR (by the most significant number of votes) is as follows:

Table 10. Rating RMR

| RMR (according to Annex 3) | The hypothesized anxiety level for the readers | Votes, % |
|----------------------------|--|----------|
| 6 | 5 | 38,1 |
| 4 | 4 | 28,6 |
| 8 | 4 | 33,3 |
| 11 | 4 | 33,3 |
| 3 | 3 | 28,6 |
| 9 | 3 | 38,1 |
| 10 | 3 | 38,1 |
| 7 | 2-3 | 23,8 |
| 1 | 2 | 38,1 |
| 2 | 2 | 33,3 |
| 5 | 2 | 47,6 |

Table 11. Characteristics of experts who selected experimental RMR

[illegible]

Abbreviations and designations:

Block 1 - experts who gave the highest level of reader anxiety for each RMR.

Block 2 - level of anxiety of the expert on the state anxiety test: TLA - too low level of anxiety (<12); LA - low level; MA - moderate level.

Block 3 - types (see also Table 8): SMTP (situationist, moderately active, trusting, pessimistic); SPRP (situationist, passive, rationalist, pessimist); PASO (pedant-panicker, active, skeptic, optimist); PARP (pedant-panicker, active, rationalist, pessimist); SASO (situationist, active, skeptic, optimist); SPSO (situationist, passive, skeptic, optimist); SASR (situationist, active, skeptic, realist); PPRP (pedant-panicker, passive, rationalist, pessimist); SARP (situationist, active, rationalist, pessimist); SPSP (situationist, passive, skeptic, pessimist); SARO (situationist, active, rationalist, optimist).

Discussion of results

Analysis of the scientific literature on the status of media messages showed, on the one hand, the interest of researchers in the functional nature of media messages (they may be differently involved in the communication situation, have different attitudes to the speech situation). Secondly, researchers do not focus on distinguishing, in our terminology - real and "obsolete", those that at the time of perception are not relevant in a given time and space, messages. Instead, we draw on the fact that messages concerning the audience and its impact are very "sensitive" to their status: one thing, media messages on a topic that is relevant, important, understandable to society. But, on the other hand, messages on a topic that is on the periphery of the audience's interest are not relevant - the impact of these two types of messages will be significantly different. The authors of this article, neither here nor in their study on the latent stressful effects of RMR on social groups, do not yet aim to prove this difference in impact experimentally. Still, such a study is reasonably possible and vital. But this hypothetical postulate of research is methodologically decisive because it directs and organizes our scientific work. Of course, suppose it suddenly becomes clear that there is no fundamental difference between the impact of media report when such message is relevant at one time and irrelevant at another time. In that case, it will not devalue the results of media effects research, but this will only make our methodological caution in using special RMR selection procedures superfluous. But, given the experience of other researchers (Reeves et al., 2016; Thomas et al., 2020), it is not redundant to assume that there is a difference in perceiving two different messages, one of which is on the wave of interest from the audience and another is not in the spotlight.

We emphasize that a powerful monitoring resource, such as the LOOQME online service, has a vast potential to be used to search and analyze media content. However, the technological resource itself is only a platform. In any case, such resources are not focused on the automatic

search for RMR because they "do not see" them since it is not just a search by the current date but a selection of media content by topic relevant to that date. In addition, a subject may be proper on a specific date but not on the following day. Therefore, the task of the experimenters is to monitor TLC to make sure that on the day of the experiment, this topic will still be alive, and media messages will not lose their importance.

We substantiated the proposed selection method for RMR in the experiment, and at this point, it is a proven methodological procedure, which requires verification in further research.

Working with the daily reports of the online service LOOQME, or similar monitoring services, is not a mandatory procedure: you can make an initial selection of messages on the topic, but the system's reports save time. However, in any case, what should you pay attention to in the first place? Is it the number of duplicates (distributions, mentions) of the news or, say, the average monthly audience of the source? However, the number of duplicates, in this case, 41 (see Table 1, Table 2, Figure 7), provides a more optimistic interpretation of reaching a potentially large audience, and most importantly - this figure, and even in comparison with the share of the message among the array of others (in this case 16.2%) - indicates the relevance of the news. At the same time, the average monthly audience of Interfax-Ukraine is only 1,790,000, and according to Table 2, among others is a petite figure for a source, this message did not get among the sources with a large audience. However, a large average monthly audience does not mean that all 41-42 million will read the news, which does not warrant the topic's relevance.

202. AstraZeneca планирует разработать новое поколение вакцины к осени текущего года[41]

COVID-19 (вибрані джерела) - Эпизодическая | [Интерфакс-Украина](#) | ТОП-100 | 1790000 | 27.02.2021
| 08:08 | Охват: 279 | Вакцинація | <https://interfax.com.ua/news/general/726794.html>

совместно с Оксфордским университетом намерены к осени текущего года создать новое поколение вакцины, которая позволит бороться с новыми вариантами коронавируса, сообщил исполнительный директор британского отделения компании Мене Пангалос на телефонном брифинге. "Мы очень хотим попробовать сделать что-то к осени,

Figure 7. Excerpt from the report of the online service

A mandatory procedure for determining the popularity of a topic is to monitor it, among other issues (see Table 3). However, it is more difficult to establish a topic's relevance by other formal means than to determine the percentage of a topic in a system of topics produced by different sources over some time. So, what is the percentage limit of relevance/irrelevance in formal terms? Rizun and colleagues (2020) address this question by defining c.L. based on the material of 32 television news programs, which comprised various messages, including those about COVID-19. Based on these actual TV newscasts, we proposed a model that included the following options: 10 newscasts - out of 32 issues, one COVID-19 report in each. Overall, we analyzed 320 news stories covering ten topics, one of which is COVID-19 for 32 messages. Each of the options includes one of 32 messages about COVID-19. Data for c.L. is in Table 12.

Table 12. Working (model) Table of limits of the relevance of the topic (max. ten topics, min. 32 messages, and issues, max. 320 messages and issues), unit of measurement - c.L. (coefficient of the level of actualization of the topic COVID-19 in society)

WC - weight coefficient.

The boundaries of relevance are highlighted with gray, and it is a scale of topic relevance. We should remember that the scale of relevance for issues with different topics is diverse. Thus, for issues on two topics, the scale is from 0.25 to 0.45; for issues on ten topics - from 0.05 to 0.09 depending on the number of messages in the issues.

This model table formed the basis of the Table of limits of the relevance of topics (Table 12), where N can be understood from one to many messages, issues, publications, programs, etc., on a given topic.

Table 13. Table of boundaries and scale of the relevance of topics (max. ten topics), unit of measurement - c.L. (coefficient of the level of actualization of the topic in society) (<https://www.researchgate.net/publication/353807477> Scale of relevance of topics)

The next step after determining the period when one identifies the analyzed topic COVID-19 as relevant, which is at the peak of the audience's attention, is the transition to the selection of RMR in the experimental unit. We used, in particular, the tools of the online service LOOQME. The procedure described above provided one thing - to find the selection parameters.

According to the final experimental sample, the researchers included the following RMR based on expert decisions:

1. RMR 6, the experts (38.1%) suggested the highest level of reader anxiety.

2. RMR 4 and RMR 11, with a lower level of reader anxiety, but experts primarily ignored RMR 8 since the selection of RMR4 and 11 involved the most significant total number of experts - 83.33% and 71.42%, respectively, and for RMR 8 - only 42.85% (see Table 10). In addition, according to the situational test, five experts each had a low level of anxiety before the task. Only four experts with a low level of anxiety, including one expert with a shallow level, selected RMR 4, 8, 11.

3. We included RMR 9 in the experimental sample with the average level of predicted reader anxiety, which had RMR 3, 7, 10. The choice focused on RMR 9 and 10, which in assessing the level of reader anxiety is characterized by the most extensive participation of experts - 38.1%, against the background of RMR 3 and 7 (see Tables 9, 10). However, the researchers focused on RMR 9 because this RMR selected the "core" of experts by 87.5% and the expert groups for RMR 3, 7, and 10, while for RMR 10, it was only 62.5%.

4. As RMR 1, 2, 5 had a low predicted level of anxiety for readers (see Table 9), the researchers proposed another RMR number 2 (see Annex 3), which was not subject to examination, but, according to the researchers, had a very high level of reader anxiety. Thus, the sample included a replaced RMR 2.

5. Annex 4 presents all five RMR included in the experimental sample as of April 7, 2021. The researchers arranged them from the lowest predicted reader anxiety to the highest. Then, on April 7, 2021, we conducted an experiment.

6. From Table 10 (Block 3), we can conclude that the most active type of expert (25.58%) in assessing the RMR in terms of the highest reader anxiety (within the scale of 3-5) was the type of SASO - situationist concerning the pandemic, active in media activity, skeptical in assessing the impact of the media (features of media consumption) and optimistic about the coverage of the pandemic in the media. At the same time, PASO - 11.62%, PARP and SPSP - 9, 3%; SSDP, SPRP, SPSO, SASR, PPRP - 6.97%, SARP, SARO - 4.65%.

Conclusions

The proposed procedures for selecting media content about COVID-19 for an experiment to study the latent stressful effects of RMR on the audience belonging to different social groups should be considered a search for methods of selecting media messages for content to form an experimental sample. The presented technique should be tested and universal in procedures for use in such experiments.

This method of selecting RMR includes theoretical rationale of the concept RMR; broad thematic selection of RMR with the help of media monitoring systems (online services); formation of an experimental sample of RMR with the use of parameters and selection criteria; additional procedure for rating the selected RMR according to a specific criterion with the participation of experts.

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Annex 1. Example of daily monitoring report for media content

https://www.researchgate.net/publication/353588883_Results_of_Media_Monitoring

Annex 2. Types of Ukrainian media sources

https://www.researchgate.net/publication/353761392_Results_of_Media_Monitoring

Annex 3. RMR about COVID-19 from 26.02 - 6.04.2021 (The texts are presented in the original version of media sources with inaccuracies, spelling, and language errors)

https://www.researchgate.net/publication/353762125_Results_of_Media_Monitoring

Annex 4. Experimental RMR as of 7.04.2021.

https://www.researchgate.net/publication/353761946_Results_of_Media_Monitoring