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**Research Regarding the Reactions
of Romanian Facebook Users on COVID-19 Pandemic**

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Abstract

Social media plays a very important role during difficult periods like the one we are living in right now due to the life-threatening COVID-19 pandemic. People get online news in real time about statistics, rules that were imposed by the authorities or about personal experiences shared by others in order to raise awareness, to manipulate or to get a certain type of attention. The individuals have a predisposition to take decisions based on what they are seeing on social media and their decisions have a great impact on health as well as on economy trends. The purpose of our study was to examine the social media coverage and to identify the reaction of people following specific posts as well as to check whether if there has been a link between their online reaction and the general trend of the virus in Romania, knowing that the country is more and more affected daily by this pandemic. For this study, we have used exploratory research of in-depth content analysis in order to understand the reactions to the daily news published by a national authority. We collected secondary data from Facebook posts, analysing the reactions used in terms of “emojis”, as well as the number of comments and the number of shares, comparing their reaction to the number of sick people in that specific period. Our results show that the number of reactions to the posts has decreased but people use all kind of emojis they have at their disposal, mostly the classic “like” but also the “angry”, “haha” in order to express emotions and beliefs and this could be associated with their behaviour in real life during pandemic.

Keywords: social media, Covid-19 pandemic, official news coverage, reactions, economy.

JEL Classification: M14, D83, L82, L86

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1. Introduction

Companies, institutions and all kind of organization are trying nowadays to build a relationship with their target customers based on trust. In order to do so, the social media is the main channel for creating a brand and making it successful (Marshall, 2013). A brand needs to have a large coverage on social media using different platforms in order to get to as many people as possible, making sure in the same time to have a coherent communication. Also, for people it becomes much easier to get information on something they are interested in using social media. Social media is an environment where one can use one's creativity in order to become original, popular and differentiate from the others.

Social media is finding its way to an amazing increase, being very useful for communication as well as free advertisement for public institutions. Social media allow them to communicate with their target public creating a community around them. Also, using more platforms, it is needed in order to get to different people according the age groups, for example.

Nowadays, it is very difficult to be visible and make a campaign for a public service without being also present online (LPCPON, 2017). Public institutions want to reach to as many citizens as possible and provide them with all information they may need. In periods of crisis like the one that we are living this year, the COVID-19 pandemic, people have increased the time they spend online and have been using social media for many purposes. According to a study based on a questionnaire addressed to 1,002 French people, 55% of them said they cannot go through lockdown without social media that they are using to watch funny content, continue to their daily rituals, meet virtually with family and friends, get informed about the current situation and work out to stay fit (Comarketing-News, 2020).

It is crucial that public institutions stay in contact with the population in order to make sure the information they are getting is the correct one, because fake news are easily spread making people confuse, anxious and sometimes provoking bad behaviours. Not only an online communication between the citizen and the public institution is needed, but it is also an important occasion to create a good environment for creating connexion and ensuring better collaboration.

The aim of our research is to analyse the reactions of the population on the well-known online platform Facebook to the daily updates made by the Romanian Ministry of Health on the COVID-19 crisis. All these posts have the same title informing the reader what he or she is going to read in the news; they have a date, an hour and the same format. Our study is focused on the number of comments of the followers as well as the number and the type of emojis used as a reaction to each post, analysing the most popular comments as well. The idea behind our study is to identify if there has been a specific trend among the population in terms of reactions as well as to correlate the data with economic aspects taking place in the same time frame.

2. Problem Statement

Being an important topic worldwide, the COVID-19 pandemic has also started an “infodemic”, making social media a vulnerable place when it comes to misinformation or manipulation of people. To slow this trend of continuous unverified information, the United Nations have launched a campaign on June 20th, when we celebrate the International Day of Social Media. This campaign called “Pause” has a purpose to make people to take a look and review the information they are about to share, because most of the times this one is generated by important emotions that turn into comments, shares or emojis (United Nations, 2020).

The COVID-19 pandemic is affecting the population worldwide not only in terms of health, but also in all life aspects: social, psychological, professional and economic life is clearly suffering as well. Because it is affecting us at all possible levels, communication and information we receive is a key factor in taking decisions and the consequences of these decisions are impacting everyone around us because we are talking about a highly contagious virus. Knowing this, it is extremely important that people receive up to date information on social media about the health system. According to a study examining the content of the news posted online about the pandemic, using Google Videos, the most recurrent topic was death and death rate, as well as different kind of anxieties about the health crisis we are going through, while important information about how to prevent the spread of the disease didn’t get very much attention (Basch et al., 2020).

In such important periods as the one we are living in, fake news are spreading very easily, people around the world taking advantage of the situation in order to manipulate and also people being manipulated themselves and sharing information without verifying it properly, like it happened with Twitter hashtag #5GCoronavirus (Ahmed et al., 2020). Multiple type of fake news appeared on social media “5G causes COVID-19; drinking bleach can cure it; Bill Gates is behind it” (Holmes, 2020).

At the same time, people pay much more attention to what they chose to disclose on social media during a health crisis because the way they behave may have an impact on many people and also it is linked to the way other perceive them (Nabity-Grover et al., 2020).

A study based on a survey was conducted in order to analyse the source of information as well as misinformation when it comes to healthcare professionals from India and it showed that misinformation is mostly coming from social media and “seventy-four percent of respondents felt the need for regulation of information during such times” (Datta et al., 2020).

Also, between March and April 2020, Romanian people spent more than EUR 325,000 in pharmacies (Iacob, 2020). Before as well as during the lockdown, people had a predisposition for buying more groceries, especially, for example, pasta and vegetables for health reasons (Laguna et al., 2020).

3. Research Questions / Aims of the Research

This article analyses the online reactions of Facebook users when it comes to updates about COVID-19 pandemic. The purpose of this research is to verify whether there could be any interferences between the updates shared (total of infected cases, daily new cases, deaths, asymptomatic people, etc.) and the reactions of people (comments, shares, emoji), analysing the general feelings shared following the 7 possible reactions on Facebook (like, haha, sad, angry, wow, care, love). Actually, since the social media increased its role when it comes to people's personal and professional lives during the pandemic, Facebook introduced the 7th emoji on the timeline, a face embracing a heart which represents "care", "we're launching new Care reactions on @facebookapp and @messenger as a way for people to share their support with one another during this unprecedented time", said Facebook communication manager Alexandru Voica on Twitter (ABC 7 NEWS, 2020).

This paper answers to the question if the general trend is for reactions to increase at the same time as the daily new cases and if most important percentage of reactions is represented by the "care" emoji implemented by Facebook.

4. Research Methods

Our research focuses on the analysis of the daily update posts made by the Romanian Ministry of Health. The health situation in Romania has worsened in the past few weeks, but the lockdown as the last solution to counteract the spread of the virus (Bădilă, 2020).

We have chosen to focus on the period from July 21st to July 29th in order to analyse the press updates made on the page of the Ministry of Health. Their official page has been liked by 222,920 people until July 30th, 2020 and 364,019 people are following their posts. It is a Government Organization and we can see it is a verified account, therefore a trustful source of information.

We have chosen these sample as July 21st is the last day when Romania had less than 1,000 new daily cases which is an important number, compared, for example, with May 14th, the last day of lockdown when Romania had 245 new cases or May 15th with 190 new cases (Ministerul Sănătății România, 2020). Our target population are the people following the daily posts made by the Ministry of Health (the source of the information being The Group for Strategic Communication). Exploratory research of in-depth content analysis has been used for our research to gain a deep understanding of people's reactions on Facebook during COVID-19 pandemic and we used IBM SPSS Statistics for the interpretation of our data, using correlations as well as case summaries.

5. Findings

5.1 Type of data collected from the update posts

We collected our data in an Excel file, by date, starting with July 21st and finishing on July 29th and we have manually collected numbers from the Facebook page of the Ministry of Health in Romania. We were interested in the following aspects: time of the posts, total confirmed cases, recovered cases, daily new cases, asymptomatic persons, number of deaths, number of comments, and shares of the posts as well as the number of every emoji used.

In Table 1 below, we can see that the maximum number of daily new cases reached 1,284 by July 29th and all categories have known an increase over the days, including the recovered and asymptomatic people.

Table 1. Case summaries for all categories of cases

Case Summaries ^a						
	Confirmed Cases	Recovered	Daily New Cases	Asymptomatics	Deaths	
1	48235	26446	1182	3870	2269	
2	47053	26128	1151	3716	2239	
3	45902	25794	1104	3440	2206	
4	44798	25643	1120	3572	2187	
5	43678	25373	1284	3106	2165	
6	42394	25349	1119	2918	2150	
7	41275	24862	1112	2787	2126	
8	40163	24663	1030	2693	2101	
9	39133	24454	994	2612	2074	
Total	N	9	9	9	9	9
	Mean	43625.67	25412.44	1121.78	3190.44	2168.56
	Median	43678.00	25373.00	1119.00	3106.00	2165.00
	Minimum	39133	24454	994	2612	2074
	Maximum	48235	26446	1284	3870	2269
	Sum	392631	228712	10096	28714	19517

a. Limited to first 100 cases.

Source: Authors' own research

5.2 Type of reactions to the daily updates

The most used emoji was the like button, as we can see in table 2, with a mean of 511.68 during the period of 9 days that we study in our research and the maximum number of likes used was 3,100. At the same time, we can notice that the love and care emoji which could be used to express solidarity, especially the last one mentioned who was precisely put in place for this pandemic, are the least used. A surprise has been to see that emoji like "Haha" has been used a lot of times, reaching its maximum during nine days at 477, when Romania already had more than 1,000 new infected people per day.

Table 2. Case Summaries on the use of emojis
Case Summaries^a

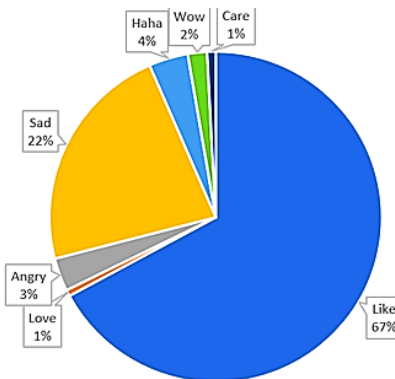
	Comments	Like	Love	Shares	Care	Angry	Wow	Haha	Sad	
1	46	65	0	23	1	15	2	8	29	
2	121	151	2	25	3	10	4	15	63	
3	279	230	2	56	7	30	4	13	99	
4	237	221	1	60	4	18	5	12	99	
5	289	269	2	74	8	37	8	17	125	
6	1100	3	24	519	28	179	134	477	874	
7	189	257	2	89	8	9	8	32	100	
8	373	309	2	78	8	13	4	37	136	
9	433	3100	29	410	34	139	91	152	1000	
Total	N	9	9	9	9	9	9	9	9	
	Mean	340.78	511.68	7.11	148.22	11.22	50.00	28.89	84.78	280.56
	Median	279.00	230.00	2.00	74.00	8.00	18.00	5.00	17.00	100.00
	Minimum	46	3	0	23	1	9	2	8	29
	Maximum	1100	3100	29	519	34	179	134	477	1000
	Sum	3067	4605	64	1334	101	450	260	763	2525

a. Limited to first 100 cases.

Source: Authors' own research

Also, in the chart below, we can see the percentage of use for all types of existing emojis.

Graph 1. The percentage of use for each emoji



Source: Authors' own research

5.3 Correlations between data

Our research presents the Pearson Correlation Coefficient calculated for all points we retrieved from Facebook posts. Using this coefficient, we can see if two variables are positively or negatively correlated (Pearson Correlation Coefficient situated between -1 and +1).

In table 3, we can see a positive correlation significant at the 0.01 level between confirmed and asymptomatic cases, between recovered and deaths and recovered and asymptomatic. Also, there is a negative correlation between the use of care emoji and confirmed cases, daily new cases and deaths, meaning that when one increases, the other one decreases. We can also see a positive correlation between the use of emoji, between “care” and “like” and “care” and “haha”.

Table 3. Correlations between reactions and cases

		Confirmed Cases	Daily New Cases	Recovered	Deaths	Asymptomatics	Like	Haha	Care
Confirmed Cases	Pearson Correlation	1	.601	.992**	.996**	.978**	-.571	-.347	-.680
	Sig. (2-tailed)		.087	.000	.000	.000	.108	.360	.044
	N	9	9	9	9	9	9	9	9
Daily New Cases	Pearson Correlation	.601	1	.596	.600	.514	-.581	-.204	-.506
	Sig. (2-tailed)	.087		.090	.088	.157	.101	.598	.165
	N	9	9	9	9	9	9	9	9
Recovered	Pearson Correlation	.992**	.596	1	.995**	.967**	-.583	-.238	-.619
	Sig. (2-tailed)	.000	.090		.000	.000	.099	.538	.076
	N	9	9	9	9	9	9	9	9
Deaths	Pearson Correlation	.996**	.600	.995**	1	.969**	-.595	-.314	-.677
	Sig. (2-tailed)	.000	.088	.000		.000	.091	.411	.045
	N	9	9	9	9	9	9	9	9
Asymptomatics	Pearson Correlation	.978**	.514	.967**	.969**	1	-.492	-.396	-.680
	Sig. (2-tailed)	.000	.157	.000	.000		.178	.291	.044
	N	9	9	9	9	9	9	9	9
Like	Pearson Correlation	-.571	-.581	-.583	-.595	-.492	1	.096	.702
	Sig. (2-tailed)	.108	.101	.099	.091	.178		.806	.035
	N	9	9	9	9	9	9	9	9
Haha	Pearson Correlation	-.347	-.204	-.238	-.314	-.396	.096	1	.761
	Sig. (2-tailed)	.360	.598	.538	.411	.291	.806		.017
	N	9	9	9	9	9	9	9	9
Care	Pearson Correlation	-.680	-.506	-.619	-.677	-.680	.702	.761	1
	Sig. (2-tailed)	.044	.165	.076	.045	.044	.035	.017	
	N	9	9	9	9	9	9	9	9

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Source: Authors' own research

In table 4, we can see a correlation between emojis as well, between “sad” and “wow”, “angry” and “love”, but no significant correlation between these 4 emojis and the number of cases (confirmed, daily, recovered, asymptomatic or deaths).

Table 4. Correlations between reactions and data

		Confirmed Cases	Daily New Cases	Recovered	Deaths	Asymptomatics	Wow	Sad	Angry	Love
Confirmed Cases	Pearson Correlation	1	.601	.992**	.996**	.978**	-.465	-.593	-.451	-.571
	Sig. (2-tailed)		.087	.000	.000	.000	.207	.093	.223	.109
	N	9	9	9	9	9	9	9	9	9
Daily New Cases	Pearson Correlation	.601	1	.596	.600	.514	-.338	-.485	-.305	-.489
	Sig. (2-tailed)	.087		.090	.088	.157	.374	.185	.425	.181
	N	9	9	9	9	9	9	9	9	9
Recovered	Pearson Correlation	.992**	.596	1	.995**	.967**	-.369	-.519	-.362	-.499
	Sig. (2-tailed)	.000	.090		.000	.000	.329	.152	.338	.171
	N	9	9	9	9	9	9	9	9	9
Deaths	Pearson Correlation	.996**	.600	.995**	1	.969**	-.444	-.585	-.440	-.563
	Sig. (2-tailed)	.000	.088	.000		.000	.231	.098	.236	.114
	N	9	9	9	9	9	9	9	9	9
Asymptomatics	Pearson Correlation	.978**	.514	.967**	.969**	1	-.484	-.581	-.473	-.560
	Sig. (2-tailed)	.000	.157	.000	.000		.187	.101	.199	.117
	N	9	9	9	9	9	9	9	9	9
Wow	Pearson Correlation	-.465	-.338	-.369	-.444	-.484	1	.951**	.988**	.943**
	Sig. (2-tailed)	.207	.374	.329	.231	.187		.000	.000	.000
	N	9	9	9	9	9	9	9	9	9
Sad	Pearson Correlation	-.593	-.485	-.519	-.585	-.581	.951**	1	.961**	.998**
	Sig. (2-tailed)	.093	.185	.152	.098	.101	.000		.000	.000
	N	9	9	9	9	9	9	9	9	9
Angry	Pearson Correlation	-.451	-.305	-.362	-.440	-.473	.988**	.961**	1	.952**
	Sig. (2-tailed)	.223	.425	.338	.236	.199	.000	.000		.000
	N	9	9	9	9	9	9	9	9	9
Love	Pearson Correlation	-.571	-.489	-.499	-.563	-.560	.943**	.998**	.952**	1
	Sig. (2-tailed)	.109	.181	.171	.114	.117	.000	.000	.000	
	N	9	9	9	9	9	9	9	9	9

** . Correlation is significant at the 0.01 level (2-tailed).

		Confirmed Cases	Daily New Cases	Recovered	Deaths	Asymptomatics	Comments	Shares
Confirmed Cases	Pearson Correlation	1	.601	.992**	.996**	.978**	-.450	-.560
	Sig. (2-tailed)		.087	.000	.000	.000	.225	.117
	N	9	9	9	9	9	9	9
Daily New Cases	Pearson Correlation	.601	1	.596	.600	.514	-.226	-.399
	Sig. (2-tailed)	.087		.090	.088	.157	.559	.287
	N	9	9	9	9	9	9	9
Recovered	Pearson Correlation	.992**	.596	1	.995**	.967**	-.355	-.471
	Sig. (2-tailed)	.000	.090		.000	.000	.349	.201
	N	9	9	9	9	9	9	9
Deaths	Pearson Correlation	.996**	.600	.995**	1	.969**	-.430	-.542
	Sig. (2-tailed)	.000	.088	.000		.000	.248	.132
	N	9	9	9	9	9	9	9
Asymptomatics	Pearson Correlation	.978**	.514	.967**	.969**	1	-.501	-.573
	Sig. (2-tailed)	.000	.157	.000	.000		.170	.107
	N	9	9	9	9	9	9	9
Comments	Pearson Correlation	-.450	-.226	-.355	-.430	-.501	1	.876**
	Sig. (2-tailed)	.225	.559	.349	.248	.170		.002
	N	9	9	9	9	9	9	9
Shares	Pearson Correlation	-.560	-.399	-.471	-.542	-.573	.876**	1
	Sig. (2-tailed)	.117	.287	.201	.132	.107	.002	
	N	9	9	9	9	9	9	9

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Authors' own research

But we can see a positive correlation between the number of shares and the number of comments.

6. Conclusions

Starting with July 22nd, Romania has more than 1,000 new cases of COVID-19 affecting its population. Therefore, people are more concerned and try to keep themselves informed about the health situation. Our study focuses on the use of an Official source for updates, a Government Institution, posting daily on Facebook from a verified account. The day with the highest number of reactions from people was July 24th, with 1,100 comments and 3,100 likes. We have seen a large number of reactions and shares on July 21st as well, which could be explain by the fact that Romania was really close to reaching 1,000 new cases per day.

The limits of our study are the fact that the reactions of people could be correlated to other political declaration, but also with other posts on the page during the same day. Also, the numbers have been constantly changing while we were doing our research, people being even able to take back their reactions or to delete comments and shares. The number of shares is lower than expected (maximum 519) knowing that it is not only a verified and official source of information, but it is also the representation of health. A study has showed that people who want to self-promote themselves are the ones sharing the most unverified source of information (Islam et al., 2020).

In a next research, we would like to analyse the main aspects presented in the comments of people, correlating them with their reactions in terms of emojis as well as with their shares, in order to see the coherence between them and if they are related or not.

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