Emotions and news on social media about climate change sharing. Moderating role of habits, previous attitudes and uses and gratifications among University students

Emociones y difusión de noticias sobre el cambio climático en redes sociales. Influencia de hábitos, actitudes previas y usos y gratificaciones en universitarios

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ABSTRACT
Introduction: This article analyzes the influence of emotions on users' intention to share news about climate change on social media. Media consumption habits, previous attitudes towards the issue and social media uses and gratifications sought are considered as moderating roles. **Methodology:** An online, self-administered, questionnaire was submitted to a sample of undergraduate students from different courses and centers placed at Madrid region. Data were statistically tested following simple

and multiple linear regression, simple and multiple logistic regression and simple and multiple ordinal regression models. **Results and conclusions:** It is concluded that fear and anger are the most influential emotions on users' intention to share a piece of news on social media. Information seeking, news internalizing and previous attitudes are identified as moderating factors.

KEYWORDS: Climate change; social media; emotions; uses and gratifications theory; news consumption habits

RESUMEN
Introducción: Esta investigación analiza la influencia que ejercen las emociones a la hora de decidir si se comparten las noticias sobre el cambio climático en redes sociales. Se estudia la función moderadora de los hábitos mediáticos, las actitudes previas y los usos y gratificaciones en esa decisión. **Metodología**: Se remitió un cuestionario online a una muestra de estudiantes universitarios de distintas titulaciones y centros de la Comunidad de Madrid. Los datos obtenidos fueron tratados estadísticamente según los modelos de regresión lineal simple y múltiple, de regresión logística simple y múltiple, y de regresión ordinal simple y múltiple. **Resultados**: El miedo y la rabia influyen en que una noticia relativa al cambio climático se comparta o no. La búsqueda de información, el consumo de noticias y el grado de preocupación previa son factores que moderan esa influencia.

PALABRAS CLAVE: cambio climático; redes sociales; emociones; teoría de los usos y gratificaciones; hábitos de consumo informativo.

CONTENTS

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1. Introduction

The contemporary media ecosystem is in a profound transformation (Velásquez *et al.,* 2018). One of the most profound changes on this aspect is the social media emergency as conduit for news and other media contents dissemination and consumption (Bright, 2016).

Platforms like Twitter or Facebook have become new windows and conduits for news distribution and, as a consequence, the way citizens access information and how they get in touch with issues of political and civil interest has changed (Kalsnes & Larsson, 2018). In the specific case of Spain, 48% of online surfers use Facebook to read, find, share or comment on news (Amoedo, Vara-Miguel, & Negredo, 2018).

Users are no longer the final recipients in a transmission line, rather nodes within a network, so their function is no longer limited to receiving information in a passive way, but also to participate in an active manner in the media content dissemination and distribution (Klinger; Svensson, 2016). This new role users have has been labeled secondary gatekeeping (Singer, 2014), distributed content by

the user (Villi & Matikainen, 2015) or re-dissemination (Guallar, Suau, Ruiz-Caballero, Sáez, & Masip, 2016).

This picture has led media companies to design and implement strategies to maximize their content dissemination on social media. In a specific way, news companies have used social media to widen the scope of their content (Villi & Noguera-Vivo, 2017) and, concurrently, to generate a greater involvement from their audience (Martín-Quevedo, Fernández-Gómez & Segado-Boj, 2019). This tendency has led media to develop and implement new logics for informative and news values, different from the traditional media ones (Larsson, 2018; Lischka, 2018).

1.1. Emotions and news dissemination

Among these new emphasized newsworthy attributes, the emotional aspect of the piece of news stands out prominently, since the content that triggers a more intense emotional reaction is susceptible of being shared by users (Kilgo, Lough, & Riedl, 2017). Users' emotional wording is, among other aspects, like personality or the uses and gratifications, one of the factors that explain the decision of users of sharing content on social media (Dafonte-Gómez, 2018).

According to the Emotional Broadcaster Theory, individuals have the innate necessity of sharing experiences. Sharing emotional news through social networks is one of the ways through which this necessity can be satisfied (Harber & Cohen, 2005).

In this sense, the audience shares on the Internet in a preferable manner those articles that trigger more intense emotions (Berger & Milkman, 2012; Weeks & Holbert, 2013). Consequently, those publications that express some type of emotion are shared more frequently than content with neutral mood (Keib, Himelboim, & Han, 2018; Stieglitz & Dang-Xuan, 2013).

However, there is evidence of the type of emotions that foster a piece of news to be shared. On one side there are studies that affirm that users preferably choose information that triggers negative emotions such as fear or concern (Cappella, Kim, & Albarracín, 2015) (Yang, Kahlor, & Griffin, 2014), but other researches affirm that news of a positive mood are more shared than the ones that trigger anger or concern (Al-Rawi, 2017).

1.2. Social media and climate change

On another note, social media has been positively associated to political participation (Boulianne, 2015) and to civil commitment (Gil de Zúñiga, Jung, & Valenzuela, 2012) hence there has been some links found between the intensity of usage of these tools and the level of involvement and participation on political issues of a society. Therefore, social media also has the potential to increase societies' commitment regarding climate change (Katz-Kimchi & Manosevitch, 2015). These platforms can raise the attention drawn to these issues and make actions of protest noticeable (Thorson, Edgerly, Kligler-Vilenchik, Xu, & Wang, 2016) or put in contact users, experts and advocacy groups (Lee, Vandyke, & Cummins, 2018). In fact, the use of social networks for political information has been positively linked to greater levels of environmental commitment (Zhang & Skoric, 2018).

However, the authors of this research haven't found studies that analyze the factors that cause what contents or specific news about climate change are shared by citizens on social media. Scientific production about this matter has been focused on the way in which Twitter has covered events such as the Paris Agreement (Hopke & Hestres, 2018) and the discussion terms and dynamics among

users about climate change on Twitter (Anderson & Huntington, 2017) and on Youtube (Shapiro & Park, 2018).

1.3. Emotions and climate change

Emotions are linked directly to the persuasive effect of messages (Wirz, 2018). Therefore, emotions are clear moderators on the effects and internalization of messages about climate change (Feldman & Hart, 2016). Likewise, messages with emotional content can contribute to raise awareness of the commitment against climate change and the change of attitudes (Nabi, Gustafson, & Jensen, 2018). However, is has been noted that emotional representations on climate change can reinforce the public's commitment about it, but also divert the attention away from the very phenomenon (Höijer, 2010).

It has been specifically pointed out that fear can foster attitudes in favor of the environment (Hartmann, Apaolaza, D'Souza, Barrutia, & Echebarria, 2014) and that hope is related to a bigger interest regarding climate change (Chadwick, 2015).

However, not only the type of emotion, but also the intensity of that emotion, can influence on how the message affects the public. For example, messages with a low level of fear generate a greater intention of adapting pro environmental attitudes than the messages that try to produce more fear (Chen, 2016).

1.4. Uses and gratifications

On another note, the use of any source is neither uniform nor universal, but depends on the anticipated expectations and rewards by each individual when approaching said sources. These expected uses and gratifications can influence on the effects of media consumption (McLeod, 2000). Therefore, the Uses and Gratifications Theory (UGTtheory) has been used to explain changes on some media effects related to consumption and media selection. In this way, different expectations lead to different use patterns of the media. Thereby, different motivations for social media usage are tied to different attitudes when consuming or sharing news on these settings (Choi, 2016b).

The uses and gratifications more connected to changes in the way news are shared and consumed on social media are the ones related to social interaction, self-image management and information seeking (Lee & Ma, 2012).

The social type motivations, that is, those that refer to the intention of communicating and interacting with others (Whiting & Williams, 2013) influence on the type of content that users opt to share (Coppini *et al.,* 2017). On the other hand, users led by their self-image management, meaning the construction and projection of their public image (Krämer & Winter, 2008) tend to avoid sharing negative or controversial content (Hossain *et al.,* 2018). Finally, the uses and gratifications linked to information seeking, meaning the informational and self-education needs (Korgaonkar & Wolin, 1999) also influence on news consumption (Winter *et al.,* 2016).

1.5. Justification and objectives

Previous studies on the effect of emotions when sharing information (Yang *et al.,* 2014) provide data and evidence limited to the American context. Therefore, this article seeks to contribute information in another cultural context that can help understand better the role of emotions on news sharing and dissemination

Due to the relevant role emotions play in environmental communication (Nabi et al., 2018) and the increasingly relevant position social media hold as a news dissemination channel, this research intends to explain the influence emotions wield over the decision of sharing an article about climate change or not.

Based on this first objective we ask the research question RQ1: "What emotion is more relevant when sharing a piece of news about climate change on social media?"

In a complementary manner to this research, and consequently to the explained state of the art, we also propose hypothesis H1: "Negative emotions are correlated with the intention of sharing a piece of news on social media".

Another objective from this research consists on measuring the moderating role other factors wield over this emotional influence on the decision of sharing a piece of news about climate change on social media.

RQ2: What uses and gratifications sought on social media will moderate the influence of emotions when sharing a piece of news about climate change?

We have considered gratifications that, according to scientific literature, influence most on users when sharing news on social media (Lee & Ma, 2012): "Self-image management", "Information seeking" and "Social interaction". The first one of them, "Self-image management", refers to those aspects that allow users to construct and project a presentation of their persona on social media (Krämer; Winter, 2008). "Information seeking", implies that users choose the source for their own education and to satisfy informational needs (Korgaonkar; Wolin, 1999). Finally, "Social interaction", refers to the intention of communicating and interacting with others (Whiting; Williams, 2013).

On another note, the effects of media exposure and the information consumption patterns are conditioned by the very own group of habits and patterns of each user (LaRose & Eastin, 2004). In this sense, the audience does not perform a new rational and conscious exercise every time it wants to look up for news or media content, but it relies on a preset repertoire of technological platforms, sources and specific publications. Therefore, citizens can opt to receive their news through traditional media or seek that content on digital media. This choice affects the rest of their involvement with the news (sharing or giving a "like"). In fact, those users who depend more on digital media have proven to be more active in this type of habits (Choi, 2016b; Karnowski, Leonhard & Kümpel, 2018).

As mentioned before, social networks not only work as an information consumption conduit, but also represent a secondary channel for news dissemination. In this sense Choi (2016b) suggests that users' habits on social networks must be differentiated between news internalization (how users receive news on social networks) and news externalization (how users share news on social networks).

Therefore, given the role that media habits play, we ask the research question RQ3: "What informational consumption habits on social networks will moderate the influence of emotions when sharing a piece of news about climate change?"

On the other hand, in the political communication field it has been proven that previous attitudes and opinions can influence and soften the emotional reaction caused by the messages (Feldman & Hart, 2016; Haseel & Weeks, 2016). It is why we want to verify if these previous attitudes towards climate change can moderate the emotional influence when sharing a piece of news on social media, therefore we ask the following research question RQ4: "What previous attitudes towards climate

change will moderate the influence of emotions when sharing a piece of news about this topic on social media?"

Similarly, it has been pointed out that previous knowledge about a topic has a decisive role when reading information that users find incidentally on social networks (Karnowski *et al.,* 2017). On the same token, the level of previous knowledge about a topic is one of the main factors that spark discussion and news comments about climate change (Taddicken & Reif, 2016). That is why we propose hypothesis 2 H2: "Previous knowledge about climate change will moderate the influence of emotions on the intention of sharing a piece of news about this topic on social media". Additionally, we propose a complementary hypothesis aimed not much to the previous knowledge level, but to the existing interest in the topic. Hence hypothesis H3: "The previous level of concern about climate change will moderate the influence of emotions on the intention of sharing a piece of news about this topic on social media".

2. Methodology

An online, self-administered, questionnaire was submitted to a sample (n=96) of undergraduate students of all universities (public and private) of the Madrid Community, coming from different courses to avoid a homogeneous profile related to their education. A sociological studies company was in charge of recruiting the participants randomly, who were invited to be part of the study in exchange of a 25€ gift check to buy in department stores. The answers were collected from May 5th to July 3rd 2017.

The size of the sample is aligned with similar studies that analyze the way in which certain factors influence on the perception of a piece of news or a particular issue (see examples such as: Da Silva & Pereira, 2017; Gerber et al., 2017; Penney & Abbott, 2015).

The average age of the participants was from 20 to 23 years old (standard deviation=3). 61.46% of the participants were woman and 38.54% men. The participants answered an online self-administered questionnaire.

The universe of study was focused on young adults since it is an especially active demographic segment when it comes to sharing and consuming online news (Antunovic, Parsons, & Cooke, 2018). This allows us to expect their habits to set and develop the evolution of trends when sharing news (Bobkowski, 2015).

As follows, the scales and metrics used on the questionnaire are detailed. The internal consistency has been measured with Cronbach's Alfa, indicated in the table corresponding to every construct with the "α" symbol. To measure the participants' news consumption habits on social media we used the constructs "News internalization" (meaning how often users receive and read news) and "News externalization" (the frequency in which they share news) and the respective defined scales by Choi (2016a). To do so we obtained the summation of the answers in a Likert Scale (1="Never", 7="Everyday") as shown in table 1.

Table 1. *Metrics of news consumption habits.*

News internalization (α = 0,687)	I read news on social media
	I receive links to news (through accounts on the media that I follow)
	I receive links to news from my contacts (personal, not accounts from the media)

Externalization of news (α = 0,76)	I post news on social media
	I share links to news with my contacts.

Source: Choi & Lee, 2015.

Following Hyun & Kim (2015), the level of previous knowledge about climate change has been computed with the summation of right answers to a group of questions that users had to respond with "true" or "false". Every right answer was punctuated with "one", while the wrong answers did not accumulate any points (average=1.54, standard deviation=0.87) (See table 2)

Table 2. *Questions about climate change knowledge.*

The first historical registers on temperature date from around 150 years ago. Since then, the registers have done nothing but increase (True)
CO2 is the only industrial gas responsible for the greenhouse effect (False)
The United States has ratified the Kyoto Protocol (False)
Every country who is a party to the Kyoto Protocol commits to reducing their CO2 emissions by 5% (False)

Source: Hyun & Kim (2015).

The general concern about climate change was evaluated through just one Likert type question (1="Not concerned at all", 7="Very concerned"). The used questions to measure the different attitudes of users regarding climate change are shown in table 3

Table 3. Questions about attitudes regarding climate change.

	Average	**Standard Deviation**
Climate change is a consequence of mankind's actions.	5,93	1,43
Climate change is a natural phenomenon, regardless of the action of mankind.	2,18	1,3
Climate change can be curbed if governments and citizens take measures promptly.	5,71	1,3

Source: Author's own creation.

The uses and gratifications considered on the study were constructed as the summation of the independent Likert type questions (1="Totally disagree", 7="Totally agree") shown in table 4 and adapted from (Gao & Feng, 2016).

Table 4. *Metrics for the uses and gratifications on social media.*

Information seeking (α = 0,9)	I can have fast and easy access to a great amount of information.
	I can get useful information
	I can get information at a very low cost
	I can get information that interests me
	I can use social media to keep information I can use in the future
	I can learn a lot
Social interaction (α = 0,912)	I can get information about my friends
	I can communicate and interact with my friends
	I can show concern and support to my friends

	I can get opinions and advice from friends
	I can express my ideas and give advice to my friends
Self-image management ($\alpha = 0,91$)	I can meet new people
	I can feel connected
	I get help for others to like me
	I can make others think I am kind
	I can make others think I am sociable
	I can make others think I am competent and capable of doing things

Source: Gao & Feng, 2016.

Once these questions were answered the form requested the participants to read a piece of news about the effects of climate change. The text and images on the article (taken from: La Vanguardia, 2017) did not include references to its source, or any other text. Once the news was read, the participants had to measure the emotional response through a set of Likert type questions shown in table 5 (1="I did not feel this emotion at all", 7="I felt this emotion strongly").

Table 5. *Emotions.*

How strongly did you feel the following emotions when reading the piece of news?	**Average**	**Standard Deviation**
Fear	3,76	1,88
Suspicion	3,2	1,66
Anger	4,55	1,86
Confusion	2,75	1,68
Sadness	4,47	1,84
Concern	5,3	1,73

Source: Author's own creation.

Based on these metrics we elaborated an intensity index of the negative emotions registered with the summation of the scores gotten on fear, anger, sadness and concern (average=18.08, standard deviation=6.03)

Finally, the participants had to answer the question: "Would you share the piece of news you have read on social media?" The form only allowed to answer "Yes" or "No".

2.1. Statistical Tests

The statistical model used was:

- Simple and multiple linear regression model when the dependent variable was continuous. The shown coefficient on the charts will be a linear coefficient.
- Simple and multiple logistic regression model when the dependent variable was binary. The shown coefficient on the charts will be the odds ratio.
- Simple and multiple ordinal regression model when the dependent variable was discrete with more than two categories with an order relation between them. The coefficient shown on the charts was the odds ratio.

These models are typical in other similar studies such as in Communication (Chyi & Yang, 2009; Stempel, Hargrove, & Stempel, 2007), and other disciplines, (Kaufman, Dwyer, Land, Klein & Park, 2018; Kirk, Lee, Ang & Lee, 2015) meant to measure relations between perceptions, messages evaluations and other construct or aspects.

The design chosen for the tables was the following: the first row refers to the simple linear model, that is, without any variable that can mediate or moderate its effect and, the coefficient (linear or odds ratio) and its confidence interval at 95% are shown. The rest of the rows take into account each one of the variables that can mediate or moderate the effect. Therefore, the coefficient shown refers to the main independent variable but altered by the presence of the corresponding mediating variable.

To determine if a variable was moderator or mediator we considered the biostatistical criteria of the Penn State University on their biostatistics courses: if the coefficient, when taking into account a third variable, varies over 10% in relation to the coefficient associated to the model, without there being a third variable, this would be considered mediator or moderator, otherwise, no.

The implemented formula to compute the percentage variation was:

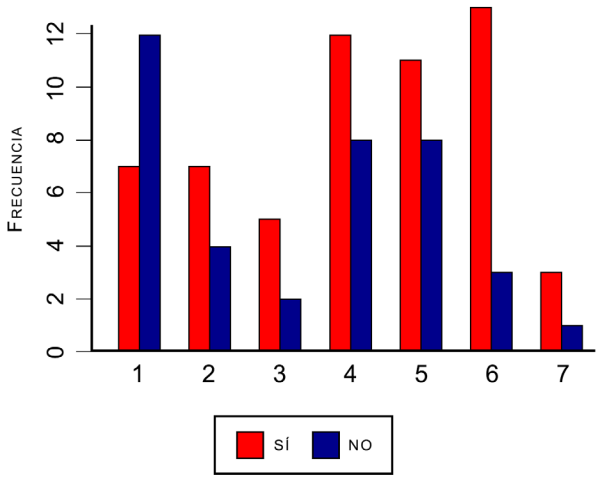
$$Variation\% = \left(\frac{\left| coef_{nomoderatingvar} - coef_{withmoderatingvar} \right|}{coef_{nomoderatingvar}} \right) \times 100$$

Therefore, all the mediating or moderating variables are highlighted in **bold** in every single table. Additionally, in the case of the coefficient being statistically significant, it will be indicated with an asterisk on top of the coefficient.

3. Results

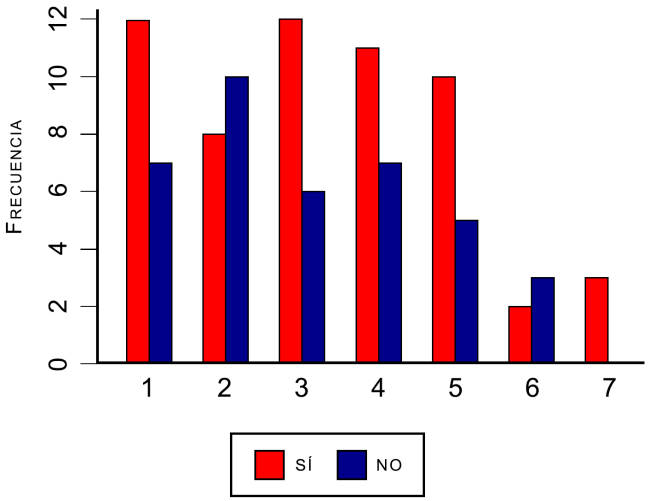
3.1. Influence of emotions in the intention to share the news

The odds ratio associated to fear, provided by the simple logistic regression model, reached statistical significance, being 1.2892 with a confidence interval at 95% of (1.0311, 1.6309) (see Graphic 1). This indicates that a greater level of fear translates into a greater probability of sharing the news. Especially based on the odds ratio, an increase by one unit of said level makes the probability of sharing the news increase by almost 29%. Even though as seen on the graphic, there is a greater probability of sharing the news among the individuals with a greater level of this emotion. Although in the following category next to fear the situation is converse maybe due to a lack of fear.



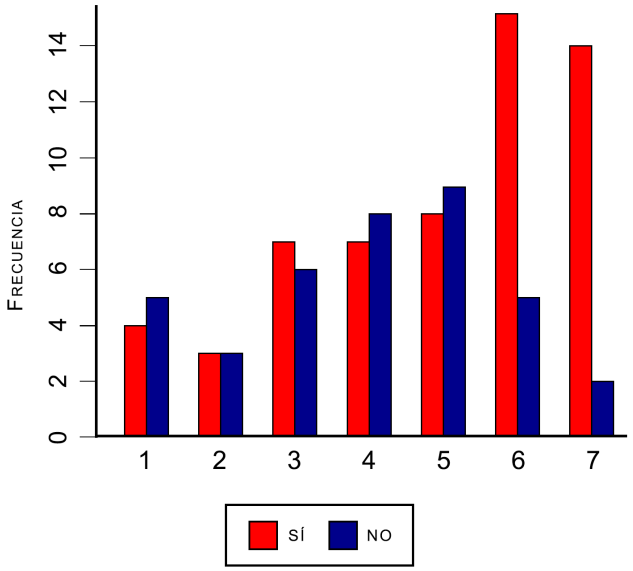
Graphic 1: frequency of the participants that would share the piece of news based on the fear perceived.
Source: Author's own creation.

The odds ratio associated to suspicion, provided by the simple logistic regression model, did not reach statistical significance, being 1.0932 with a confidence interval at 95% of (0.8525, 1.4127). This indicates that a greater level of suspicion won't translate into a greater probability of sharing the news.



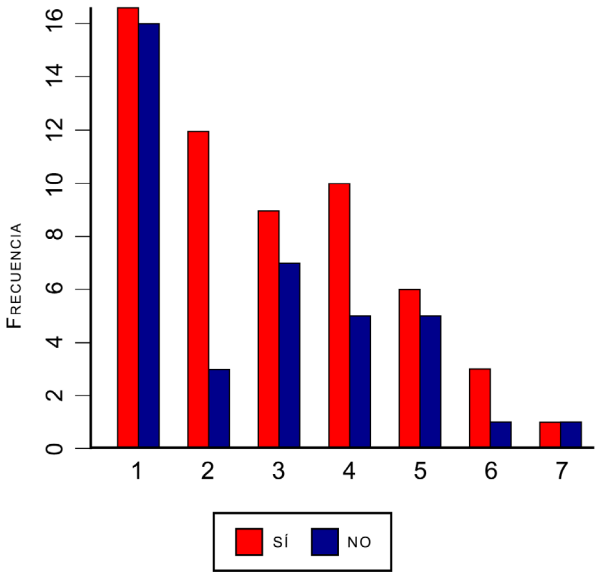
Graphic 2: frequency of participants that would share the news based on the suspicion perceived.
Source: Author's own creation.

The odds ratio associated to anger, provided by the simple logistic regression model, reached statistical significance, being of 1.35 with a confidence interval at 95% of (1.0755, 1.7217). This indicates that a greater level of anger translates into a greater probability of sharing the news. Especially based on the odds ratio, an increase by one unit of said level makes the probability of sharing the news increase by almost 35%. Even though as seen on the graphic, there is a greater probability of sharing the news among the individuals with a greater level of this emotion.



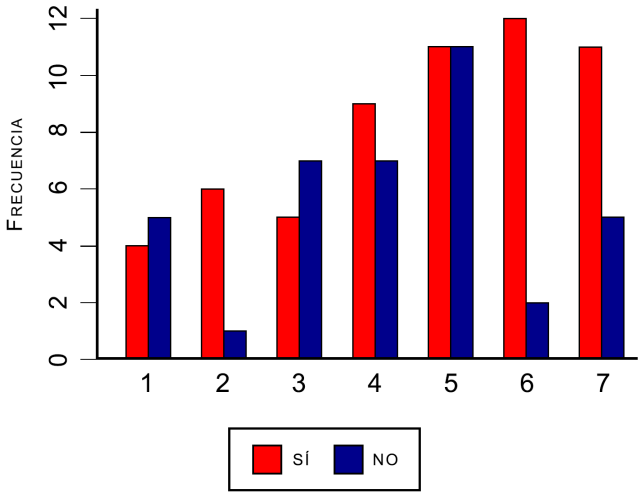
Graphic 3: frequency of participants that would share the news based on the anger perceived.
Source: Author's own creation.

The odds ratio associated to the level of confusion, provided by the simple logistic regression model, did not reach statistical significance, being 1.0565 with a confidence interval at 95% of (0.827, 1.3601). This indicates that a greater level of confusion won't translate into a greater probability of sharing the news.



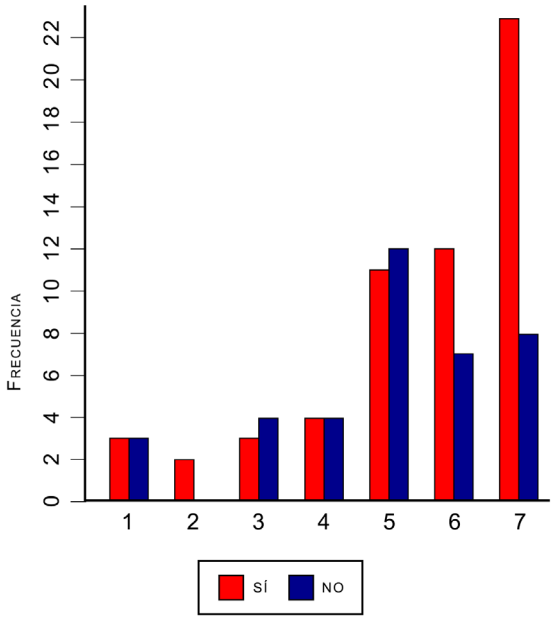
Graphic 4: frequency of participants that would share the news based on the confusion perceived.
Source: Author's own creation.

The odds ratio associated to the level of sadness, provided by the simple logistic regression model, did not reach statistical significance, being 1.1666 with a confidence interval at 95% of (0.9324, 1.47). This indicates that a greater level of sadness won't translate into a greater probability of sharing the news. Even though as seen on the graphic, in levels 6 and 7 of sadness, the difference of sharing the news is more noticeable.



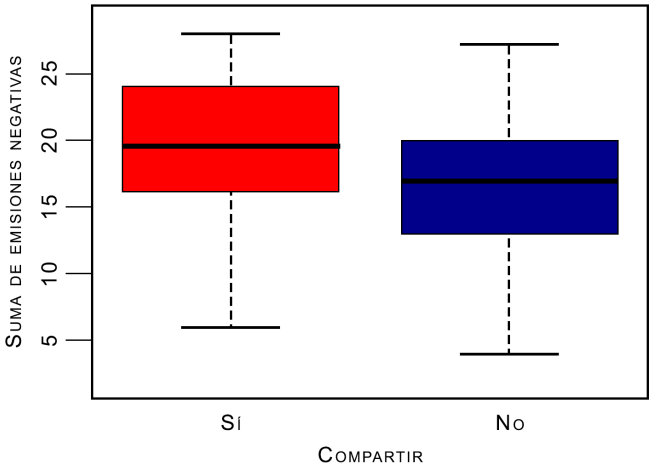
Graphic 5: frequency of participants that would share the news based on the sadness perceived.
Source: Author's own creation.

The odds ratio associated to the level of concern, provided by the simple logistic regression model, did not reach statistical significance, being 1.2001 with a confidence interval at 95% of (0.9467, 1.5362). This indicates that a greater level of concern won't translate into a greater probability of sharing the news. Even though as seen on the graphic, in levels 6 and 7 of concern, the difference of sharing the news is more noticeable.



Graphic 6: frequency of participants that would share the news based on the concern perceived.
Source: Author's own creation.

The odds ratio associated to the influence of bad emotions, provided by the simple logistic regression model, reached statistical significance, being 1.0872 with a confidence interval at 95% of (1.0137, 1.172). This indicates that an increase by one unit in the influence of negative emotions translates into a greater probability of sharing the news. Especially according to the graphic and the odds ratio, the probability of sharing the news increases by 8.7%



Graphic 7: frequency of participants that would share the news based on the negative emotions perceived.
Source: Author's own creation.

3.2 Moderating role of uses and gratifications sought

It can be considered as moderating variable for information seeking in the cases of "Anger", "Suspicion" and "Concern". In these situations occurs a variation greater than 10% in the odds ratio associated to the news being shared (see table 6).

Table 6. *Moderating role of the uses and gratifications on the influence of emotions perceived and the intention of sharing the news.*

Emotion	Ordinal Regression	Lower 95% CI	Upper 95% CI	% Variation	Moderating variable
Fear	1,2892	1,0311	1,6309		
	1,3694	1,0828	1,7613	6,2209	Information seeking
	1,3251	1,0532	1,691	2,7847	Social Interaction
	1,2901	1,0317	1,6322	0,0698	Self-image management
Suspicion	1,0932	0,8525	1,4127		
	1,1436	0,8842	1,4976	4,6103	Information seeking
	1,0792	0,8382	1,3983	1,2806	Social Interaction
	1,0923	0,8515	1,4118	0,0823	Self-image management
Anger	1,35*	1,0755	1,7217		
	1,5954*	1,2209	2,1544	**18,1778**	**Information seeking**
	1,3986*	1,1042	1,8047	3,6	Social Interaction
	1,3495*	1,075	1,7212	0,037	Self-image management
Confusion	1,0565	0,827	1,3601		
	1,0816	0,8434	1,3998	2,3758	Information seeking
	1,0711	0,8365	1,3811	1,3819	Social Interaction
	1,0549	0,8248	1,359	0,1514	Self-image management
Sadness	1,1666	0,9324	1,47		
	1,3082	1,021	1,7067	**12,1378**	**Information seeking**
	1,2826	1,005	1,6622	9,9434	Social Interaction
	1,1657	0,9308	1,4703	0,0771	Self-image management
Concern	1,2001	0,9467	1,5362		
	1,4072*	1,0686	1,8988	**17,2569**	**Information seeking**
	1,2963*	1,0048	1,7021	8,016	Social Interaction
	1,1995	0,945	1,5372	0,05	Self-image management
Intensity of Negative Emotions	1,0872	1,0137	1,172		
	1,1509*	1,0587	1,2637	5,8591	Information seeking
	1,1141*	1,0332	1,2095	2,4742	Social Interaction
	1,0871*	1,0135	1,1729	0,009198	Self-image management

Source: Author's own creation.

3.3. Moderating role of news internalization and externalization

News internalization can be considered as moderating variable because it produces a variation greater than 10% in the odds ratio associated with the news being shared in the cases of "Anger", "Sadness" and "Concern" (see table 7).

Table 7. Moderating role of internalization and externalization on the influence of emotions perceived and the intention of sharing the news

Emotion	Ordinal Regression	Lower 95% CI	Upper 95% CI	% Variation	Moderating variable
Fear	1,2892*	1,0311	1,6309		
	1,3872*	1,0888	1,8056	7,6016	News Internalization

	1,306*	1,033	1,674	1,3031	News Externalization
Suspicion	1,0932	0,8525	1,4127		
	1,1062	0,854	1,4462	1,1892	News Internalization
	1,0943	0,8531	1,4146	0,1006	News Externalization
Anger	1,35*	1,0755	1,7217		
	1,6263*	1,2343	2,2259	**20,4667**	**News Internalization**
	1,3517*	1,0739	1,7283	0,1259	News Externalization
Confusion	1,0565	0,827	1,3601		
	1,0864	0,8444	1,4124	2,8301	News Internalization
	1,0494	0,8164	1,3586	0,672	News Externalization
Sadness	1,1666	0,9324	1,47		
	1,3202	1,0263	1,7339	**13,1665**	**News Internalization**
	1,1746	0,9242	1,5051	0,6858	News Externalization
Concern	1,2001	0,9467	1,5362		
	1,3815	1,0562	1,8444	**15,1154**	**News Internalization**
	1,1982	0,9417	1,5392	0,1583	News Externalization
Intensity of Negative Emotions	1,0872	1,0137	1,172		
	1,1542*	1,0601	1,2704	6,1626	News Internalization
	1,0922*	1,0147	1,1822	0,4599	News Externalization

Source: Author's own creation.

3.4. Moderating role of interest, knowledge and previous attitudes

Concern about climate change can be considered moderating variable because it produces a variation greater than 10% in the odds ratio associated with the news being shared (see table 8).

Table 8. *Moderating role of interest, knowledge and previous attitudes on the influence of emotions perceived and the intention of sharing the news.*

Emotion	Ordinal Regression	Lower 95% CI	Upper 95% CI	% Variation	Moderating variable
Fear	1,2892*	1,0311	1,6309		
	1,2007	0,9435	1,537	6,8647	Concern about climate change
	1,3376*	1,0576	1,7194	3,7543	Phenomenon caused by mankind
	1,2947*	1,0333	1,6417	0,4266	Natural phenomenon
	1,2775*	1,0199	1,6181	0,9075	Curb climate change
	1,3214	1,0503	1,0503	2,4977	Previous knowledge about the topic
Suspicion	1,0932	0,8525	1,4127		
	0,9897	0,7525	1,3016	9,4676	Concern about climate change
	1,1036	0,8582	1,4322	0,9513	Phenomenon caused by mankind
	1,0945	0,8527	1,4153	0,1189	Natural phenomenon
	1,0838	0,843	1,403	0,8599	Curb climate change
	1,1157	0,8674	0,8674	2,05818	Previous knowledge about the topic
Anger	1,35	1,0755	1,7217		
	1,2038	0,9246	1,5744	**10,8296**	**Concern about climate change**
	1,5066	1,1546	2,0314	1,1,6	Phenomenon caused by mankind
	1,3647	1,0819	1,7524	1,0889	Natural phenomenon
	1,3371	1,0584	1,7155	0,9556	Curb climate change
	1,4113	1,1136	1,1136	4,5407	Previous knowledge about the topic
Confusion	1,0565	0,827	1,3601		
	1,0646	0,8192	1,3933	0,7667	Concern about climate change
	1,0532	0,8234	1,3569	0,3124	Phenomenon caused by mankind

	1,0586	0,8265	1,366	0,1988	Natural phenomenon
	1,0686	0,8346	1,3806	1,1453	Curb climate change
	1,0975	0,8503	1,4327	3,8807	Previous knowledge about the topic
Sadness	1,1666	0,9324	1,47		
	1,0304	0,7918	1,3293	**11,675**	**Concern about climate change**
	1,2336	0,9635	1,5987	5,7432	Phenomenon caused by mankind
	1,1716	0,9329	1,4822	0,4286	Natural phenomenon
	1,1431	0,9027	1,4547	2,0144	Curb climate change
	1,1931	0,9486	0,9486	2,2716	Previous knowledge about the topic
Concern	1,2001	0,9467	1,5362		
	1,1579	0,9024	1,4944	3,5164	Interest for scientific information
	1,0521	0,7976	1,3787	**12,3323**	**Concern about climate change**
	1,2794	0,9829	1,6975	6,6078	Phenomenon caused by mankind
	1,2072	0,948	1,5549	0,5916	Natural phenomenon
	1,1774	0,9192	1,5202	1,8915	Curb climate change
	1,2349	0,9597	0,9597	2,90	Previous knowledge about the topic
Intensity of Negative Emotions	1,0872*	1,0137	1,172		
	1,0795*	1,0041	1,1658	0,7082	Interest for scientific information
	1,0474	0,9651	1,138	3,6608	Concern about climate change
	1,1272*	1,0377	1,2357	3,6792	Phenomenon caused by mankind
	1,0914*	1,0157	1,1794	0,3863	Natural phenomenon
	1,0839*	1,0076	1,1714	0,3035	Curb climate change
	1,0997	1,0226	1,189	1,1497	Previous knowledge about the topic

Source: Author's own creation.

4. Discussion and conclusions

The data obtained allows us to answer the enunciated questions for the research and test the hypothesis proposed. Therefore, regarding RQ1 "What emotion is more relevant when sharing a piece of news about climate change on social media?" highlights that fear and anger are the emotions that have fostered a piece of news to be shared the most (see graphic 1 and 3). Likewise, hypothesis H1 can also be verified "Negative emotions are correlated with the intention of sharing a piece of news on social media". (See graphic 7)

As for the research question RQ2: "What uses and gratifications sought on social media will moderate the influence of emotions when sharing a piece of news about climate change?" The data points out information seeking as the only use and gratification that moderates the role of the emotion (see table 6). Self-image management and Social interaction stand on the sidelines of this influence.

Regarding RQ3 "What informational consumption habits on social networks will moderate the influence of emotions when sharing a piece of news about climate change?", the results of this research point out that only news consumption (news internalization) moderates the emotional influence when sharing content about climate change on social media. On the contrary, the externalization habit does not influence on this matter (see table 7).

The answer to question RQ4: "What previous attitudes towards climate change will moderate the influence of emotions when sharing a piece of news about this topic on social media?" is negative, in the sense that none of these attitudes moderates the influence of the emotion over the decision of

sharing the news. In addition, the data does not allow testing hypothesis H2 "Previous knowledge about climate change will moderate the influence of emotions on the intention of sharing a piece of news about this topic on social media". On the contrary, hypothesis H3 has been proven "The previous level of concern about climate change will moderate the influence of emotions on the intention of sharing a piece of news about this topic on social media" (see table 8).

The findings presented here align with other studies that pointed out the importance of fear related to awakening public's involvement in actions against climate change (Hartmann, Apaolaza, D'Souza, Barrutia, & Echebarria, 2014). This research demonstrates that fear is also a relevant factor when it comes to users giving more prominence to messages about the effects and consequences of climate change. This evidence can be especially useful when designing social media campaigns to raise environmental awareness on this matter.

On another note, this study also presents anger as a relevant factor when deciding whether sharing a piece of news about climate change or not. Even if it has been pointed out in other contexts, such as political information (Hassel & Weeks, 2016), this emotional aspect had not still been pointed out in the specific case of environmental communication, and in particular, about climate change.

As for the factors considered as moderators over this emotional impact, it has been uncovered the role played by the active search for information on this matter. Both use and gratification of information seeking and the specific habit of news consumption through social media soften the emotional burden of news. This fact is consistent with the role of concern about climate change. That is, the more concerned a user is for getting information and more information he/she receives, the less affected he/she will be by the emotional burden of news when sharing it among his/her friends. However, previous knowledge about climate change won't moderate that emotional impact the same way. Therefore, it can be concluded that the emotional influence is only moderated if there is concern or the intention of getting informed, not if that information gets carried out and is effective in the specific context of climate change.

4.1. Limitations and further research

This study has only used one message as stimulus to measure the emotional response; hence the effects and the role played by different aspects of news and its treatment have not been compared.

It has been pointed out that different approaches and framings can lead to variations on the effects of massages about climate change (Bilandzic, Kalch, & Soentgen, 2017; Feldman & Hart, 2018) and that these differences on news treatment can cause dissimilar effects on the users' attitudes and intentions (Hart & Feldman, 2016). Therefore, since users react differently to different framings (Lee, Chang, & Chen, 2017) it is necessary that further studies compare the participants' responses to several stimuli that include different approaches.

These further studies should use different stimuli with substantial differences on these aspects to mediate the variations they cause on readers' reactions.

On the other hand, the results presented can only be extrapolated to a specific segment of the Spanish population, such as undergraduate students. Future studies should compare the results obtained with other age groups. Likewise, since the reactions to emotions can be different on distinct cultural settings (Eriksson, Coultas, & de Barra, 2016) transcultural and transnational replications of this study are necessary, in order to understand better the effects of emotions perceived from secondary news dissemination.

5. References

Al-Rawi, A. (2017). Viral News on Social Media. *Digital Journalism*, *7*(1), 1-17. https://doi.org/10.1080/21670811.2017.1387062

Amoedo, A., Vara-Miguel, A. & Negredo, S. (2018). *Digital News Report.es 2018*. https://drive.google.com/file/d/1_MqxpbPvMQM1lpvjsGm4QOKxlMC8IZ_D/view

Anderson, A. A. & Huntington H. E. (2017). Social Media, Science, and Attack Discourse: How Twitter Discussions of Climate Change Use Sarcasm and Incivility. *Science Communication, 39*(5), 598–620. https://doi.org/10.1177/1075547017735113

Antunovic, D., Parsons, P. & Cooke, T. R. (2018). 'Checking' and googling: Stages of news consumption among young adults. *Journalism*, *19*(5), 632-648. https://doi.org/10.1177/1464884916663625

Berger, J. & Milkman K. L. (2012) What Makes Online Content Viral? *Journal of Marketing Research*, *49*(2), 192-205. https://doi.org/10.1509/jmr.10.0353

Bilandzic, H., Kalch, A. & Soentgen, J. (2017). Effects of Goal Framing and Emotions on Perceived Threat and Willingness to Sacrifice for Climate Change. *Science Communication*, *39*(4), 466-491. https://doi.org/10.1177/1075547017718553

Bobkowski, P. S. (2015). Sharing the News: Effects of Informational Utility and Opinion Leadership on Online News Sharing. *Journalism & Mass Communication Quarterly*, *92*(2), 320-345. https://doi.org/10.1177/1077699015573194

Boulianne, S (2015). Social media use and participation: A meta-analysis of current research. *Information, Communication & Society*, *18*(5), 524-538.

Bright, J. (2016). The Social News Gap: How News Reading and News Sharing Diverge. *Journal of Communication*, *66*(3), 343-365. https://doi.org/10.1111/jcom.12232

Cappella, J. N., Kim, H. S. & Albarracín, D. (2015). Selection and Transmission Processes for Information in the Emerging Media Environment: Psychological Motives and Message Characteristics. *Media Psychology*, *18*(3), 396-424. https://doi.org/10.1080/15213269.2014.941112

Carvalho, A., Van Wessel, A. & Maeseele, P. (2017). Communication practices and political engagement with climate change: A research agenda. *Environmental Communication, 11*(1), 122-135.

Chadwick, A. E. (2015). Toward a Theory of Persuasive Hope: Effects of Cognitive Appraisals, Hope Appeals, and Hope in the Context of Climate Change. *Health Communication*, *30*(6), 598-611. https://doi.org/10.1080/10410236.2014.916777

Chen, M. F. (2016). Impact of fear appeals on pro-environmental behavior and crucial determinants. *International Journal of Advertising*, *35*(1), 74-92. https://doi.org/10.1080/02650487.2015.1101908

Choi, J. (2016a). News Internalizing and Externalizing: The Dimensions of News Sharing on Online Social Networking Sites. *Journalism & Mass Communication Quarterly*, *93*(4), 816-835. https://doi.org/10.1177/1077699016628812

Choi, J. (2016b). Why do people use news differently on SNSs? An investigation of the role of motivations, media repertoires, and technology cluster on citizens' news-related activities. *Computers in Human Behavior*, 54, 249-256. https://doi.org/10.1016/j.chb.2015.08.006

Choi, J. & Lee, J. K. (2015). Investigating the effects of news sharing and political interest on social media network heterogeneity. *Computers in Human Behavior,* 44, 258-266. https://doi.org/10.1016/j.chb.2014.11.029

Chyi, H. I. & Yang, M. J. (2009). Is online news an inferior good? Examining the economic nature of online news among users. *Journalism & Mass Communication Quarterly, 86*(3), 594-612. https://doi.org/10.1177/107769900908600309

Coppini, D., Duncan, M. A., Mcleod, D. M., Wise, D. A., Bialik, K. E. & Wu, Y. (2017). When the whole world is watching: A motivations-based account of selective expression and exposure. *Computers in Human Behavior*, 75, 766-774. https://doi.org/10.1016/j.chb.2017.04.020

Da Silva, J. P. & Pereira, A. M. S. (2017). Perceived Spirituality, Mindfulness and Quality of Life in Psychiatric Patients. *Journal of Religion and Health, 56*(1), 130–140. https://doi.org/10.1007/s10943-016-0186-y

Dafonte-Gómez, A. (2018). News Media and the Emotional Public Sphere| Audiences as Medium: Motivations and Emotions in News Sharing. *International Journal of Communication*, 12, 2.133-2.152. https://doi.org/1932–8036/20180005

Eriksson, K., Coultas, J. C. & De Barra, M. (2016). Cross-Cultural Differences in Emotional Selection on Transmission of Information. *Journal of Cognition and Culture*, *16*(1-2), 122-143. https://doi.org/10.1163/15685373-12342171

Feldman, L. & Hart, P. S. (2016). Using Political Efficacy Messages to Increase Climate Activism. *Science Communication*, *38*(1), 99-127. https://doi.org/10.1177/1075547015617941

Feldman, L. & Hart, P. S. (2018). Is There Any Hope? How Climate Change News Imagery and Text Influence Audience Emotions and Support for Climate Mitigation Policies. *Risk Analysis*, *38*(3), 585-602. https://doi.org/10.1111/risa.12868

Gao, Q. & Feng, C. (2016). Branding with social media: User gratifications, usage patterns, and brand message content strategies. *Computers in Human Behavior*, 63, 868-890. https://doi.org/10.1016/j.chb.2016.06.022

Gerber, A. H., McCormick, C. E. B., Levine, T. P., Morrow, E. M., Anders, T. F. & Sheinkopf, S. J. (2017). Brief Report: Factors Influencing Healthcare Satisfaction in Adults with Autism Spectrum Disorder. *Journal of Autism and Developmental Disorders, 47*(6), 1.896–1.903. https://doi.org/10.1007/s10803-017-3087-3

Gil de Zúñiga, H., Jung, N. & Valenzuela, S. (2012). Social Media Use for News and Individuals' Social Capital, Civic Engagement and Political Participation. *Journal of Computer-Mediated Communication*, *17*(3), 319-336. https://doi.org/10.1111/j.1083-6101.2012.01574.x

Gil de Zúñiga, G., Molyneux, L. & Zheng, P. (2014). Social media, political expression, and political participation: Panel analysis of lagged and concurrent relationships. *Journal of Communication*, *64*(4), 612-634.

Guallar, J., Suau, J., Ruiz-Caballero, C., Sáez, A. & Masip, P. (2016) Re-dissemination of news and public debate on social networks. *El profesional de la información, 25*(3), 1.699-2.407. https://doi.org/10.3145/epi.2016.may.05

Harber, K. D. & Cohen, D. J. (2005). The Emotional Broadcaster Theory of Social Sharing. *Journal of Language and Social Psychology*, *24*(4), 382-400. https://doi.org/10.1177/0261927X05281426

Hart, P. S. & Feldman, L. (2016). The Influence of Climate Change Efficacy Messages and Efficacy Beliefs on Intended Political Participation. *PLOS ONE*, *11*(8), e0157658. https://doi.org/10.1371/journal.pone.0157658

Hartmann, P., Apaolaza, V., D'Souza, C., Barrutia, J. M. & Echebarria, C. (2014). Environmental threat appeals in green advertising. *International Journal of Advertising*, *33*(4), 741-765. https://doi.org/10.2501/IJA-33-4-741-765

Hasell, A. & Weeks, B. E. (2016) Partisan Provocation: The Role of Partisan News Use and Emotional Responses in Political Information Sharing in Social Media! *Human Communication Research*, *42*(4), 641-661. https://doi.org/10.1111/hcre.12092

Höijer, B. (2010). Emotional anchoring and objectification in the media reporting on climate change, *Public Understanding of Science*, *19*(6), 717-731. https://doi.org/10.1177/0963662509348863

Hopke, J. E. & Hestres, L. E. (2018). Visualizing the Paris Climate Talks on Twitter: Media and Climate Stakeholder Visual Social Media During COP21. *Social Media + Society*, *4*(3), 205630511878268. https://doi.org/10.1177/2056305118782687

Hossain, M. A., Dwivedi, Y. K., Chan, C., Standing, C. & Olanrewaju, A. S. (2018). Sharing political content in online social media: A planned and unplanned behaviour approach. *Information Systems Frontiers*, *20*(3), 485-501.

Hyun, K. D. & Kim, J. (2015). Differential and interactive influences on political participation by different types of news activities and political conversation through social media. *Computers in Human Behavior*, 45, 328-334. https://doi.org/10.1016/j.chb.2014.12.031

Kalsnes, B. & Larsson, A. O. (2018). Understanding News Sharing Across Social Media. *Journalism Studies*, *19*(11), 1.669-1.688. https://doi.org/10.1080/1461670X.2017.1297686

Karnowski, V., Kümpel, A. S., Leonhard, L. & Leiner, D. J. (2017). From incidental news exposure to news engagement. How perceptions of the news post and news usage patterns influence engagement with news articles encountered on Facebook. *Computer Human Behaviour*, 76, 42-50. https://doi.org/10.1016/j.chb.2017.06.041

Karnowski, V., Leonhard, L. & Kümpel A. S. (2018). Why Users Share the News: A Theory of Reasoned Action-Based Study on the Antecedents of News-Sharing Behavior. *Communication Research Reports*, *35*(2), 91-100.

Katz-Kimchi, M. & Manosevitch, I. (2015). Mobilizing Facebook Users against Facebook's Energy Policy: The Case of Greenpeace Unfriend Coal Campaign. *Environmental Communication*, *9*(2), 248-267. https://doi.org/10.1080/17524032.2014.993413

Kauffmann, Y., Ramel, J. C., Lefebvre, A., Isaico, R., De Lazzer, A., Bonnabel, A., Bron, A. M. & Creuzot-Garcher, C. (2015). Preoperative Prognostic Factors and Predictive Score in Patients Operated on for Combined Cataract and Idiopathic Epiretinal Membrane. *American Journal of Ophthalmology, 160*(1), 185-192. https://doi.org/10.1016/J.AJO.2015.03.027

Keib, K., Himelboim, I. & Han, J. Y. (2018). Important tweets matter: Predicting retweets in the #BlackLivesMatter talk on twitter. *Computers in Human Behavior*, 85, 106-115. https://doi.org/10.1016/j.chb.2018.03.025

Kilgo, D. K., Lough, K. & Riedl, M. J. (2017). Emotional appeals and news values as factors of shareworthiness in Ice Bucket Challenge coverage. *Digital Journalism*, 1-20. https://doi.org/10.1080/21670811.2017.1387501

Kirk, A. H. P., Ng, B. S. P., Lee, A. N., Ang, B. & Lee, J. H. (2015). Perceptions of Pediatric Critical Care Nurses on the Initiation of a Nursing-Led Feeding Protocol. *Journal of Nursing Research, 23*(4), 308-12. https://doi.org/10.1097/jnr.0000000000000085

Klinger, U. & Svensson, J. (2015). The emergence of network media logic in political communication: A theoretical approach. *New media & society, 17*(8), 1.241-1.257. https://doi.org/10.1177/1461444814522952

Korgaonkar, P. K. & Wolin, L. D. (1999). A multivariate analysis of web usage. *Journal of Advertising Research*, *39*(2), 53-68.

Krämer, N. C. & Winter, S. (2008). Impression Management 2.0. The Relationship of Self-Esteem, Extraversion, Self-Efficacy, and Self-Presentation Within Social Networking Sites. *Journal of Media Psychology*, *20*(3), 106–116. https://doi.org/10.1027/1864-1105.20.3.106

LaRose, R. & Eastin, M. S. (2004). A social cognitive theory of Internet uses and gratifications: Toward a new model of media attendance. *Journal of Broadcasting & Electronic Media*, *48*(3), 358-377.

Larsson, A. O. (2018). "I Shared the News Today, oh Boy". News provision and interaction on Facebook. *Journalism Studies*, *19*(1), 43-61. https://doi.org/10.1080/1461670X.2016.1154797

Lee, C. S. & Ma, L. (2012). News sharing in social media: The effect of gratifications and prior experience. *Computers in Human Behavior*, *28*(2), 331-339. https://doi.org/10.1016/j.chb.2011.10.002

Lee, N. M., VanDyke, M. S. & Cummins, R. G. (2018). A Missed Opportunity?: NOAA's Use of Social Media to Communicate Climate Science. *Environmental Communication*, *12*(2), 274-283. https://doi.org/10.1080/17524032.2016.1269825

Lee, Y. K., Chang, C. T. & Chen, P. C. (2017). What Sells Better in Green Communications: Fear or Hope?. *Journal of Advertising Research*, *57*(4), 379-396. https://doi.org/10.2501/JAR-2017-048

Lischka, J. A. (2018). Logics in social media news making: How social media editors marry the Facebook logic with journalistic standards. *Journalism*, 146488491878847. https://doi.org/10.1177/1464884918788472

Martín-Quevedo, J., Fernández-Gómez, E. & Segado-Boj, F. (2019). How to Engage with Younger Users on Instagram: A Comparative Analysis of HBO and Netflix in the Spanish and US Markets. *International Journal of Media Management*, 1-21. https://doi.org/10.1080/14241277.2019.1585355

Masip, P., Guallar, J., Suau, J., Ruiz-Caballero, C. & Peralta, M. (2015). News and social networks: audience behavior. *El profesional de la información*, *4*(4), 363–370.

McLeod, J. M. (2000). Media and civic socialization of youth. *Journal of Adolescent Health*, *27*(2), 45-51. https://doi.org/10.1016/S1054-139X(00)00131-2

Nabi, R. L., Gustafson, A. & Jensen, R. (2018). Framing Climate Change: Exploring the Role of Emotion in Generating Advocacy Behavior. *Science Communication*, *40*(4), 442-468. https://doi.org/10.1177/1075547018776019

Oakley, R. L. & Salam, A. F. (2014). Examining the impact of computer-mediated social networks on individual consumerism environmental behaviors. *Computers in human behavior*, *35,* 516-526.

Östman, J. (2014). The influence of media use on environmental engagement: A political socialization approach. *Environmental Communication*, *8*(1), 92-109.

Penney, E. S. & Abbott, M. J. (2015). The Impact of Perceived Standards on State Anxiety, Appraisal Processes, and Negative Pre- and Post-event Rumination in Social Anxiety Disorder. *Cognitive Therapy and Research, 39*(2), 162–177. https://doi.org/10.1007/s10608-014-9639-3

Scherman, A., Arriagada, A. & Valenzuela, S. (2015). Student and environmental protests in Chile: The role of social media. *Politics*, *35*(2), 151-171.

Shapiro M. A. & Park, W. H. (2018). Climate Change and YouTube: Deliberation Potential in Post-video Discussions. *Environmental Communication*, *12*(1), 115-131. https://doi.org/10.1080/17524032.2017.1289108

Singer, J. B. (2014). User-generated visibility: Secondary gatekeeping in a shared media space. *New Media & Society*, *16*(1), 55-73. https://doi.org/10.1177/1461444813477833

Skoric, M. M., Zhu, Q., Goh, D. & Pang, N. (2016). Social media and citizen engagement: A meta-analytic review. *New Media & Society*, *18*(9), 1.817-1.839.

Stempel, C., Hargrove, T. & Stempel, G. H. (2007). Media Use, Social Structure, and Belief in 9/11 Conspiracy Theories. *Journalism & Mass Communication Quarterly, 84*(2), 353-372. https://doi.org/10.1177/107769900708400210

Stieglitz, S. & Dang-Xuan, L. (2013). Emotions and Information Diffusion in Social Media—Sentiment of Microblogs and Sharing Behavior. *Journal of Management Information Systems*, *29*(4), 217-248. https://doi.org/10.2753/MIS0742-1222290408

Taddicken, M. & Reif, A. (2016). Who participates in the climate change online discourse? A typology of Germans' online engagement. *Communications*, *41*(3), 315-337. https://doi.org/10.1515/commun-2016-0012

Thorson, K., Edgerly, S., Kligler-Vilenchik, N., Xu, Y. & Wang, L. (2016). Seeking visibility in a big tent: Digital communication and the people's climate march. *International Journal of Communication,* 10, 4.784-4.806. http://ijoc.org/index.php/ijoc/article/view/4703/1802

Van der Wurff, R. & Schoenbach, K. (2014). Civic and citizen demands of news media and journalists: What does the audience expect from good journalism? *Journalism & Mass Communication Quarterly*, *91*(3), 433-451.

La Vanguardia (2017). *Este río ha desaparecido y los científicos culpan al cambio climático*. 19-4-2017. https://www.lavanguardia.com/natural/20170418/421794268373/rio-desaparece-cambio-climatico.html.

Velásquez, A., Renó, D., Beltrán, A. M., Maldonado, J. C. y Ortiz León, C. (2018). De los mass media a los medios sociales: reflexiones sobre la nueva ecología de los medios. *Revista Latina de Comunicación Social*, 73, 583-594.

Villi, M. & Matikainen, J. (2015). Mobile UDC: Online media content distribution among Finnish mobile Internet users. *Mobile Media & Communication*, *3*(2), 214-229. https://doi.org/10.1177/2050157914552156

Villi, M. & Noguera-Vivo, J. M. (2017). Sharing media content in social media: The challenges and opportunities of user-distributed content (UDC). *Journal of Applied Journalism & Media Studies*, *6*(2), 207-223. https://doi.org/10.1386/ajms.6.2.207_1

Weeks, B. E. & Holbert, R. L. (2013). Predicting Dissemination of News Content in Social Media: A Focus on Reception, Friending, and Partisanship. *Journalism & Mass* Communication Quarterly, *90*(2), 212-232. https://doi.org/10.1177/1077699013482906

Whiting, A. & Williams, D. (2013). Why people use social media: a uses and gratifications approach. *Qualitative Market Research: An International Journal*, *16*(4), 362-369. https://doi.org/10.1108/QMR-06-2013-0041

Winter, S., Metzger, M. J. & Flanagin, A. J. (2016). Selective Use of News Cues: A Multiple-Motive Perspective on Information Selection in Social Media Environments. *Journal of Communication*, *66*(4), 669–693. https://doi.org/10.1111/jcom.12241

Wirz, D. S. (2018). Persuasion Through Emotion? An Experimental Test of the Emotion-Eliciting Nature of Populist Communication. *International Journal of Communication*, 12, 1.114-1.138. http://ijoc.org/index.php/ijoc/article/view/7846

Yang, Z. J., Kahlor, L. A. & Griffin, D. J. (2014). I Share, Therefore I Am: A U.S.−China Comparison of College Students' Motivations to Share Information About Climate Change. *Human Communication Research*, *40*(1), 112-135. https://doi.org/10.1111/hcre.12018

Zhang, N. & Skoric, M. M. (2018). Media Use and Environmental Engagement: Examining Differential Gains from News Media and Social Media. *International Journal of Communication*, 12, 380-403. http://ijoc.org/index.php/ijoc/article/view/7650

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