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Research, Literacy, and Communication Education

New Challenges Facing Disinformation

Edited by

Belén Puebla-Martínez, Jorge Gallardo-Camacho, Carmen Marta-Lazo and Luis Miguel Romero-Rodríguez

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Preface to "Research, Literacy, and Communication Education: New Challenges Facing Disinformation"

This Special Issue offers sixteen articles related to Literacy, Communication Education and New Challenges Facing Disinformation or Misinformation. The amount of information that comes through digital media and social networks is increasing. This potential access to almost infinite information makes it difficult to select relevant content with good understanding. For this reason, it is necessary to extensively investigate the phenomenon of communication and information in the digital age. Increased literacy and media education are needed to prevent the existence and spread of fake news. Citizens must know how to deal with disinformation and be able to detect the origin of bad intentions behind the information. Therefore, people must be aware of the new communication challenges to determine what is important, which communication media they can trust, and where information has been misused or manipulated. In short, society must be prepared to face new challenges related to disinformation. A digitally educated and literate society will be able to face these problems and could be prepared to face the new communication challenges, including interaction with social networks, new audiences, new media, fake news, etc.

This Special Issue focuses on the subject area of Communication, New Media, and Educommunication. Therefore, this Special Issue offers sixteen interesting and outstanding articles focused on fake news and disinformation with different points of view about the following topics:

- Fact-checking: a comparative analysis of fact-checkers facing fake news in Spain and the United Kingdom, as well as an approach to the Spanish business model of the service of this fast-growing and global phenomenon.
- Receptors or perception of messages: it is important to establish citizens' perceptions of fake news considering their socioeconomic, demographic, and ideological differences; another study shows whether young Spanish adults identify and spread fake news, analyzing their 'infodiet' to determine their attitude towards disinformation. In the same way, the paper, titled Fake News Reaching Young People on Social Networks, explains that the situation has been exacerbated by the pandemic to an unprecedented extent through social media, with special concern among young people. Another paper related to young Spanish society concludes that disinformation is a variable that causes a lack of personal responsibility among youths in complying with public health expectations.
- Political fake news: we present a study about the relationship between a subject's ideological persuasion with the belief and spread of fake news in Portugal.
- Media credibility: it is relevant to consider the credibility of media among societies. Therefore, one paper focuses on the main problem of misinformation and post-trust societies regarding trust in communications from a European perspective. The importance of rumors in the Spanish sports press—the most read in the country—has been assessed in an article analyzing front-page news appearing in the Spanish newspapers Marca, As, Mundo Deportivo, and Sport over five years. Finally, another study examines a sample of 220 pieces of news related to human evolution, written in Spanish and published for two years, both in digital and print media, to assess the rigor and coherence of the information in the news with scientific knowledge on the theory of evolution.
- Education and Communication: education and the need for literacy to fight against disinformation are vital subjects to explore. Consequently, we present an article about digital

literacy and higher education during COVID-19 lockdowns in Spain, Italy, and Ecuador. Furthermore, there is one study focused on the analysis of video production for massive open online courses (MOOC) from an informative, narrative, and aesthetic point of view.

- Advertising and influencers: social networks are particularly significant in marketing and advertising because they provide platforms that offer interactive network channels to develop consumer brands; therefore, we present a paper exploring the degree of influence between branded content and social media consumer interactions of luxury fashion brand Manolo Blahnik. Another study investigates the use of Instagram by educational influencers to consolidate new audiences for their channel, influence through interaction with their followers, and create their transmedia production, specifically during the period of confinement by COVID-19. Finally, there is remarkable research about the demonization of Islam through social media, with one research piece analyzing the case study of the hashtag #stopislam in the Instagram network.
- Methodological proposal: a methodological proposal is also shown in this Special Issue for the detection of the composing elements of vulnerability regarding disinformation.

The main motivation and inspiration for coordinating this Special Issue are to provide and construct a critical view of disinformation, fake news, and the role of education in the fight against the misuse of mass media today. In conclusion, media literacy is more necessary than ever, but with the added challenge of mistrust; it may be time to rethink media literacy.

Belén Puebla-Martínez, Jorge Gallardo-Camacho,
Carmen Marta-Lazo, Luis Miguel Romero-Rodríguez
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Article

Methodological Proposal for the Detection of the Composing Elements of Vulnerability Regarding Disinformation

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Abstract: We live in a hyper-informed society that is constantly being fed with information stimuli. That information may not be correct, and society may be vulnerable to it. We present a methodological proposal with a mixed approach that allows the learning of the characteristics and weaknesses of news consumers in the face of disinformation. Said methodology moves away from the traditional model, and with it a new, much more complete and complex way of conducting discussion groups is carried out. The qualitative approach is carried out through the creation of an online community in which subjects are encouraged to participate in different activities and tests. On the other hand, in order to obtain quantitative data, a quasi-experimental survey where respondents are exposed to various stimuli created ad hoc, which seeks to measure the interest and credibility of different news items through an orthogonal design, is carried out. The use of this methodology will allow for an expansive and intensive approach to the knowledge of societal vulnerability factors, and with the subsequent results, a solid basis of disinformation can be established, which will allow for the development of a series of strategies to combat disinformation.

Keywords: methodology; online community; questionnaires; fake news; disinformation; vulnerability

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1. Introduction

Social science research evolves over the years, as have the discipline's own objects of study. The rise of social networks, new media, technological advances, and other forms of media consumption, among other transformations, means that the analysis techniques traditionally used have to be updated and adapted to the current moment.

Currently, one of the topics that is arousing most interest in the scientific community is the analysis of disinformation and fake news in its broad spectrum, from its production to the effects it produces on citizens. Numerous authors study the factors that condition a person to be more or less vulnerable to disinformation.

The concept of vulnerability in this context can be understood as the weakness of consumers to identify manipulation (intentional or unintentional) by the media in sharing false or incorrect information (for further development of the concept of vulnerability, please refer to the studies conducted by Menczer and Hills [1], the report from the Council of Europe [2] or the research of the Data & Society group, where it is possible to highlight the one by Paris and Donovan [3]). To achieve this, different researchers use quantitative techniques, such as surveys, and/or qualitative techniques, such as in-depth interviews or focus groups. These types of techniques, which have a long history and a continuous presence in communication studies, have shown over time that they comply with the scientific rigour they are supposed to have if they are used correctly. In the case of surveys, they make it possible to reach a large yet superficial number of the population in an extensive yet superficial way. In the case of interviews or discussion groups, they go deeper into the subject with small profiles of the sample in a significant yet not representative way. As Wimmer and Dominick explain [4], these techniques prevent us from getting to know the individual in his or her different facets, such as his or her values, feelings and emotions

in the face of misinformation. It should not be forgotten that a survey is often presented with closed or scalar questions that prevent the individual's position from being developed more broadly. In the case of the focus group, where in less than two hours individuals have to present their opinions with the disadvantages that this entails, such as the negative effects of "Face-to-Face" group meetings, the monopolisation of the group by one of the members or the complexity of the analysis since, on many occasions it depends on the non-verbal reactions of the participants and also on their communication styles.

This article presents a methodological proposal that aims to make up for these shortcomings thanks to the structure of the tool, which through various aspects, such as anonymity, the iteration of different formulas when posing a problem so that decisions can be modified or argued, feedback with moderators and with the rest of the participants, intragroup homogeneity and intragroup heterogeneity of the participants, ensure the validity of the results. On the other hand, as will be seen below, different activities and processes are used to obtain information from individuals in a holistic way, covering a wide variety of fields and taking into account spatial and temporal dimensions (it lasts more than two months), so that chaos is not formed, and there are no individuals who monopolise the research.

Some works approach the study of vulnerability factors from inductive–deductive processes. Monteiro Borges and Rampazzo Gambarato [5] study the role of beliefs and behaviour on Facebook and their relationship with fake news, using a methodology that encompasses the qualitative conceptual study of Peircean semiotics, focusing on different concepts, such as reality or perception, to investigate the relationship between algorithms, fake news and transmedia journalism. Even within serious games, fake news and disinformation have been the subject of study by Gomez and Carillo [6].

Many authors deal with the study of cognitive skills, attitudes or cognitive biases, among other explanatory elements found at the base of vulnerability, from experimental or quasi-experimental research. This is the case for Saunders and MacLeod [7] in their search for the circumstances related to misinformation and its variation, depending on aspects such as memory, or that of the methodology followed by Dibbets and Meesters [8] to corroborate confirmation bias in children and young people. Although, these authors point out that, among the limitations of the experiment developed, the children who participated in it were forced to select one of the answer alternatives presented.

However, authors who have used the experimental method to study the effects of levels of political competence and media literacy on the detection of manipulated information point out its suitability, due to the need to test cause–effect hypotheses [9].

In these study processes, the use of tasks to assess different skills is common, as in Wineburg and McGrew [10], Wineburg et al. [11] or Nygren and Guath [12]. In some cases, participants are exposed to the evaluation of digital information in sessions conducted by the authors, such as Wineburg and McGrew [10], who recognize that any task that involves researchers creates an artificial environment that can distort what people usually do.

Other researchers combine the use of online and offline assessment tasks, such as McGrew et al. [13] in their evaluation of students' civic online reasoning. In other cases, the use of these tasks is carried out through an online survey, in which the test items are included. Hatlevik et al. [14], to detect the factors that can influence how people navigate new information, facts and digital environments, used a survey with a digital competence test and a self-administered questionnaire. Nygren and Guath [12], in trying to establish the difficulties and abilities in determining the credibility of digital news, used an online survey with evidence elements designed by researchers in education and psychology, in collaboration with active teachers and in line with previous works [13,15], to ensure its internal validity and reliability. Although, they point out as a limitation that the sample is not random, and the survey is collected by teachers interested in signing up for their classes in order to participate. Instead, Kelly [16] in his study of people as biased information processors, conducted a nationally representative survey experiment combining two powerful research tools.

This paper aims to provide a methodological proposal that can be applied in subsequent research to achieve conclusive and profuse results regarding the vulnerability factors to misinformation, combining the validity and scientific rigor of the reviewed research, while increasing the benefits of traditional techniques and reducing the disadvantages that these may present. This methodological proposal has already been applied to the national project, "Study of the conditioning factors of misinformation and proposal of solutions against its impact based on the degrees of vulnerability of the groups analysed", financed internationally by the Luca de Tena Foundation and the social network Facebook, within the framework of the public contest "Academic research on disinformation in Spain and approach to: anthropological, economic and sociological aspects that motivate it, history, expansion and current situation and proposals for solutions", which had an endowment of 62,000 euros.

2. Contextualisation of the Proposal: What Does Disinformation Mean?

In order the understand how the methodological proposal works, it is necessary to explain how it works and what effects disinformation generates.

Disinformation has become a global phenomenon, to the point of talking about the post-truth era and the post-factual world [17]. The rise of social networks and their preponderance in the reconfiguration of public information spaces has led to citizens being overexposed to disinformation. The digital ecosystem in general, and social networks in particular, favour disinformation by increasing the potential audience of these messages and allowing for their re-broadcast [18]. This, together with the increase in connections between individuals and the speed of information transmission, allows an essential factor in its proliferation: virality. In addition, the increasing demand for news focused on emotional aspects, which is in turn more likely to be shared, also benefits disinformation [9]. On the other hand, this context prioritizes the immediacy of the information over reliability, affecting journalistic production routines [19,20] and increasing the difficulty of communication media to contrast much of the information they produce.

The High-Level Expert Group on Fake News and Online Disinformation of the European Commission recommends the use of the term disinformation when referring to bad informative practices [21]. The widespread expression "fake news" usually refers indistinctly to three concepts with different nuances: misinformation, disinformation and malinformation. Malinformation refers to information built on real data that, regardless of its informative relevance, is used as a weapon to attack people, organizations or states [18]. Misinformation and disinformation are distinguished by the intention of the sender in spreading false information, which in the case of disinformation is carried out with the knowledge that this information is disinformation. Misinformation is increasingly recurring with forwarded messages, especially on social networks, which focus on, among other issues, non-existent false public health alerts or simply on erroneous information [22]. On the other hand, an example of disinformation would be the creation of deceptions known as hoaxes [23].

Although there are authors who had not at first considered intentionality as a disinformative characteristic, pointing out only the misleading nature of the content [24], this element was later added, making it a common consideration as an indispensable intrinsic factor [25–28]. Other authors broaden the meaning of the term by also including the lack of information on certain topics from citizens [29,30].

Fallis points out that disinformation continues to be a type of information, misleading and intentional, with the ability to create false beliefs about the world or reality, and characterizes it with, among other things, the following distinctive notes [31]: it is usually a government or military activity; it is often the product of a carefully planned and technically sophisticated deception process; it may not come directly from the source attempting the deception; it can be widely distributed or, conversely, targeted at a specific group or organization. Disinformation, which ultimately produces an abuse of power [32], ends up harming the population by eroding their trust in institutions and the media [31].

The importance of its potential effects has captured the attention of European institutions [33,34], as has the determination of the causes of vulnerability to disinformation, the effects of which differing, among other factors, by educational levels, democratic culture or trust in institutions [33].

The disappearance of the gatekeeping function that was traditionally associated with mass communication has generated as a secondary effect a great difficulty, on the part of the recipients, to discern what is trustworthy and what is not [35]. The ability to assess the credibility of information is related to cognitive skills and attitudes. The lack of knowledge of the digital environment is very high [36], detecting a digital divide that reflects levels of education and social inequalities [12]. Similarly, previous beliefs, the coherence of the message and cognitive ability [12], as well as ideologies, age, memory and personality traits, can affect the evaluation of information [37]. All of which can be increased by the consumption occasion in which subjects may find themselves, perhaps overworked, tired or stressed, making it difficult to undertake effective evaluations [38].

Likewise, the cognitive biases used for the extension of informational disorders [39], such as confirmation bias in the evaluation of fake news, a natural tendency to blindly second messages related to one's own beliefs [40], should be considered. This has been found to be true for all age groups [41]. The consonance of the falsehood with the beliefs and desires of the receiving subject reduces the possibility of questioning their falsehood [42], since beliefs are typically resistant to change. This is the case even in the face of data that contradict said beliefs, especially in cases with a strong ideological association [43,44].

On the other hand, indicators such as people's perception of how often they find false information and their confidence in identifying it show differences when observed through sociodemographic analysis, revealing, for instance, that it is the youngest (between 15 and 24 years) and respondents with the highest educational levels who say they more frequently find fake news [45]. However, this confidence clashes with the position of some authors who have determined that especially young people may find it difficult to assess whether online information is reliable and to recognize disinformation [41,46].

In order to investigate disinformation in Spain, a systematic research methodology was built and endowed with economic resources that allow for articulating this central concern on disinformation. It aspires to contribute significant data to a heated debate with undoubted social impact.

This work presents a methodological proposal for the study of the constituent elements of vulnerability to disinformation. This methodology has already been applied in a research project that analyses the conditioning factors of disinformation and has been partially replicated in other investigations with positive results, which guarantees its validity and replicability.

3. Methodological Proposal

The proposed methodology is capable of shedding light on the characteristics of disinformation, with a special emphasis on the detection of vulnerable audiences and the subsequent formulation of actions whose implementation can help combat the effects of the phenomenon effectively.

The data obtained from the application of this methodology can provide systematic and reliable support for the actions proposed to combat the phenomenon of disinformation. The research design was planned in a way that approaches the problem from complementary methodologies and presents sufficiently broad coverage.

In this way, a work system is proposed to investigate the degree of vulnerability to disinformation concentrated on the independent variable of content consumption. The aforementioned system methodologically triangulates between quantitative and qualitative techniques (surveys and discussion groups in the Sensors online community, respectively) to increase the reliability of the results by approaching the phenomenon studied from different perspectives.

It is understood that the results that will be obtained from the two techniques will not only complement each other but will suggest similar conclusions, as other research has shown [47].

Thanks to the different techniques of the methodology being based on an exploratory approach, they can respond to a wide variety of research objectives. The following are examples:

- Learn the conditioning factors related to the effectiveness of disinformation.
- Study the profiles of the most affected audiences and identify their vulnerabilities.
- Catalogue possible actions that are specifically targeted and adapted to the different audiences identified.
- Determine key aspects in the construction of solutions to reduce the impact of disinformation.
- Establish whether educational level is associated with a greater susceptibility to disinformation.
- Clarify whether age is a factor related to a greater susceptibility to disinformation.
- Identify the incidence of other dependent variables of the subjects, namely:
    - Sociodemographic variables: level of income, social status, area of residence.
    - Intermediate or psychosocial variables: political orientation, strategies and thought patterns, attitude components, social attribution phenomena, cognitive dissonance, stereotypes, vulnerability to rumors, etc.
- Explain the effect of stimulus-dependent variables on susceptibility to disinformation:
    - Influence of the source, support and type of channel on the level of acceptance of disinformation.
    - Role of the information content and level of specificity of said information.
    - The effectiveness of disinformative content enhanced by the presence or lack thereof (along with the accumulation) of news values.

3.1. Methodological Design

A complex study with different phases has been designed to propose a method for a comprehensive study of disinformation. It is based on data production and cross-analysis tools. For this purpose, the qualitative and quantitative approaches are separated into two different studies, whose data can be pooled for validation and new results. Since, as suggested by Morse and Chung:

"[...] simultaneous or sequential triangulation of more than one qualitative method or combining qualitative and quantitative methods provides a more balanced perspective, moving toward holism [...] The use of multiple methods leans toward developing a systematic research program, with one study dictating the direction and nature of the next. In this way, the researcher may carefully identify and encompass the scope of the phenomena or project, with each study being complete in itself [...] With minimal overlap between these projects, but with each project validating and extending the previous, the results may be fit together to form an understanding of the concept" ([48], p. 18).

So that the results are confirmed by this comparison, as Hernandez Sampieri, Fernandez Collado and Baptista Lucio indicate, "the idea is that when a hypothesis or result survives the confrontation of different methods, it has a higher degree of validity than if it is tested by a single method" ([49], p. 789).

The proposed timeframe is as follows:

- Workshop or initial meeting, to agree on data and steps to be taken and to delve into objectives and define the appropriate timing.
- Qualitative phase: field work commencement.
- Quantitative phase: work process from qualitative field production to the launch of a quantitative questionnaire (cross-analysis approach and interphase triangulation).
- Integrated analysis of qualitative and quantitative data. Review of the state of the art in search of psychosocial models that explain the findings and phenomena uncovered.

- Final project meeting: project closing workshop and presentation of the results report.

3.2. Target Study Variables, Field Work and Research Phases

Regarding the sample cross variables, the following decisions are made to better address the susceptibility to being disinformed:

- Factors that condition susceptibility. The design by sample quotas that separately combine educational level, level of income, performance or not of paid work, etc. is suitable for this methodology. It is named social position.
- From here, the variables of age, sex, life cycle moment and social position (as an alternative to the typical social class variable) are identified. The combination of the aforementioned variables offers the necessary data to know the most susceptible categories to disinformation.

Finally, the complex cross-sectional variable of "disinformation effectiveness" is, at least, threefold:

- News values (presence or absence) in the content of the message, valence (+/−) and intensity.
- Effectiveness is understood as making false information credible in the terms set forth above. For effectiveness to be established, there must be, as a minimum, a successful process of established social influence—if not social power directly—and a high enough credibility factor associated with the messages for them to be accepted by individuals. All this is closely related to the elements of communication.
- Identification of the aforementioned elements of the communicative process and their role in the process of establishing influence: sender(s), receiver(s), channel/medium, code, referent, noise and feedback, amongst others.

After the initial workshop, the qualitative phase and the sample design that will best adapt to the object of study are defined, using innovative methodologies, such as web squared (a hybrid device with online and offline moments).

More specifically, the Sensors community and its platform are used together with other ethnographic work environments (mobile groups via WhatsApp).

This device of an online community plus smartphones multiplies the possibilities of traditional qualitative research since it allows:

- Provision of a group space and personal privacy.
- Exploration of motivations and meanings, as well as deep psychological keys (psychometric test application adapted to a private web environment).
- Learning from the informants, guidance of new steps by making activities more flexible and inclusion of objectives that arise in the course of the investigation. Thinking in a "crossed impact" mode with the participants and members of the research team with successive adaptations of the tool and collection of the reality of the participants in their own environment.
- Working both with the reflection of the participants and with the most lively, immediate game of response in group.
- Detection of trends and the according development of proposals.
- Provision of a strategic focus.
- Above all, the allowance of a quasi-experimental structure to be applied throughout the device, through:
    - Firstly, the exploration of the "opinion" of the participants on the matter both individually and as a group, and to encourage the exchange of perspectives, the subsequent elaboration, the reflection (discourse), etc.
    - After a reasonable period of time (a fortnight), begin to present informants with various news items (true or false) for their consideration without clarifying whether the content is true or false, in order to verify de facto, the real vulnerability to disinformation on the part of the sample (the behaviour).

- This allows the contrast of the intentions and theoretical disposition of the sample to canards, errors, fakes, etc., with their actual coping behaviour, observing the inconsistencies between both variables, as well as subsequently guiding a purely experimental methodology in the quantitative phase to verify the first data obtained.

3.3. Qualitative Phase Specifications

The Sensors community is an online tool of reciprocal and multichannel impact that, creatively and continuously in the period that is established, launches different qualitative ways of doing research through different spaces, accessible through various interaction supports on/off: computer/tablet plus smartphone, etc. These spaces include:

- Ethnographic diaries (a space of intimacy/a space of identity): reflection is done intimately, but it is also a projective and symbolic space where participants develop storytelling, personal concerns, etc.
- In this space, stories of experiences are configured, thus encompassing the way in which subjects live and relate to the stimuli, phenomena or processes that are investigated.
- My wall (an intermediate window between the intimate and the private in the appearance of the social network Facebook): each individual has a wall on which they express themselves as they want, and to which the community can freely access and react to these communications.
- It is a space for self-pronunciation, a place for each informant to have a voice. The idea of self-expression before an eco-community is reinforced.
- Agora (community blog as an exploration workshop open to all): a true collaborative workshop on ideas, concepts, projects, communication, etc. In the agorae, experiences and opinions of the subjects' day to day are shared and recreated. A fluid dynamic is constituted: a bonding energy emerges at the same time that content and relationship are shared. Agorae differentiated by segments are constructed each time it is necessary to have a selection of sample variables for specific activities.
- Test (parallel consultation): in this space small surveys, games or confidential tests are proposed where the participants respond individually. It allows the carrying out of specific activities and consultations, providing detailed information on those aspects to be investigated.
- WhatsApp (ethnographic pocket space that allows access whilst on the move, with a highly naturalized chat): through this app it is easy to naturalize a group with the informants; although they are in itinere, it allows a greater implantation and plasticity compared to Sensorsapp.

3.3.1. Implementation Process

The way of carrying out a global investigation involves a progressive blending of the different qualitative elements worked on, which is:

- Data production → continuous analysis of said data → input of learnings in subsequent steps → until the construction of the final quantitative phase.

In fact, the last tasks and qualitative analysis coincide in their final stretch with the beginning of the quantitative field, since they support from the base a strategic definition of the device, its clearly experimental approach, the definition of the variables to be manipulated and the news content tested with the questionnaire used.

Commencement of the qualitative phase is the beginning of field work on the Sensors platform and its continuity through different tasks, supports, channels and challenges:

- Once the qualitative phase is advanced, the data collected from an activity is analysed and guides the approach for the next activity, progressively integrating the different partial results and shaping the information production instruments.
- According to this dynamic, different test are launched in the form of consultations or study activities, many of them with an experimental cut, namely:

- Test on thought patterns, self-completion → it reports thinking patterns and cognitive styles with which individuals deal with news and new data about their environment.
- Agorae of group discussion divided according to different variables/sample segments on news of up to six different topics, including news with a high degree of "disinformation" → this provides group information, shared in small well-organized rooms of people who share a common score on significant variables (political ideology, usually).
- Voluntary initiatives of strategy/voice or appeal to other informants in the intermediate spaces of communication (semi-public) that are the personal walls.
- Here the dragging/summoning capacity of specific topics and people, as well as concerns of the moment which generate echo and contagion, content/topic trends, public opinion thermometer, etc., can be observed.
- Individual information about the private sphere, including dreams, desires, attitudes, personal fears, etc., in a private and absolutely ethnographic space where the participants confess intimate realities that are difficult to access in other settings (as well as values, beliefs, etc.).
- Confidential individual exercises in the ethnographic diaries with, on the one hand, a qualitative phase where an online community has been carried out using the Sensor platform and, on the other, a quantitative phase based on an online questionnaire.

- Progressive and spiral analysis of the data so obtained using the aforementioned tools with a cross or triangulation approach to shed light on the quantitative tools, their structure, design construction and base questionnaire to launch the field work.
- Integrated analysis of qualitative and quantitative data. Review of the scientific literature in search of psychosocial models that explain the findings and phenomena found.

3.3.2. Sample Design of the Online Community

The relevant variables for the sample design of this methodology, which are inspired both by the proposed objectives and the considerations that arise in the initial workshop, are the following:

- Sex: online community (preferably formed by 50% women and 50% men).
- Geographical area: capitals and areas of influence.
- Social class: according to social position, obtained according to income and educational levels (combining these variables with paid or unpaid work). When taking into account social position (disaggregating education level and household income level), we have a greater wealth of nuances, which multiplies the explanatory power.
- Life cycle moment: specific segments with more individuals in the family segments are chosen to collect the different casuistry (with and without children, young and older children, etc.).
  - Adolescents + youths.
  - Young stable couples without children aged 28–34 and couples with young children up to 12, aged 30–45.
  - Couples with children over 12 years of age between 44–55 years old.
  - Empty nest + 55 years old. Different political attitudes: distribution according to subjective statement on political ideology (left, centre-left, centre, centre-right, right and undefined). For the adolescent segment, the distribution according to political ideology is not considered; a group of its own is configured with this segment.
- Different employment situations (paid or unpaid job, pensioner, unemployed).
- Access to technological equipment: mobile phones or smartphones, normal television, computer, tablets, etc. Different levels of access to the internet and the media (on/off)

were distinguished in the segments, as well as people who work and people who do not work.

3.3.3. Selection of Participants

The selection of participants for the community was carried out in three phases:

1. Preselection of informants: First selection with the main segmentation variables. It is the first contact to accept participation in the online community. The participant is strongly involved in the process from the beginning.
2. Interview/personal letter: It delves into lifestyle and key segmentation variables. This provides a prior qualitative knowledge of the participants of great value to the members of the research team.
3. Task development: Preselected candidates will be validated for their expression skills through videos, collage, ethnographic diaries, storytelling, chats, etc. This process will last eight weeks.

From the beginning, participants are informed that there will be two or three dynamics per week.

3.3.4. Activities and Examinations

Some details and elements of the different activities and examinations require further specification:

- Moldes test: through the "test" tab, a test of cognitive/emotional strategies composed of different items is published to the participants where, individually and confidentially, they must answer a series of questions specifying their level of agreement (in a Likert scale from 1 to 5).
- Portrait-story: It is proposed that the participants describe a little more about their personal environment (way of being) and aspects of their reality. Through this activity we can further specify the political spectrum of the participants. It is carried out in the ethnographic diary of the participants; since this is a space of intimacy and identity, it is considered to be the most appropriate space on the platform.
- Different news items: News items from various sources and channels (Twitter, digital press, Instagram, WhatsApp...) are presented. Some of them are canards or false news items. This is done with the intention of knowing and understanding the reactions and attitudes towards possible untruthful items of news. Such pieces are published in the ethnographic diaries, since it is considered that, in this way, the participants can show their perspective and point of view without being conditioned by the rest of the informants.
- Agorae by thematic areas: Different agorae are published through which different topics are addressed (politics, sports, technology, society, environment, science, social networks, amongst others). Through these agorae, news pieces related to the subject in question are raised in order to know the types of channels in which the participants consider that the news piece may appear, the sources, as well as the dissemination of the news and interest in it. The agorae, in addition to being categorized by thematic areas, are also segmented by ideology (based on the data obtained in previous activities in relation to the political spectrum of the participants).
- News items proposed by the participants themselves: Simultaneously to all the proposed activities, the participants publish on their walls those news items that they considered interesting and choose to share with the rest of their peers. Such news pieces allow to better understand the interests of the participants, as well as the usual channels and sources they use when it comes to acquiring information.
- Portable groups via WhatsApp: For the period of a week, groups are held with informants through which issues related to information, disinformation, erroneous or partial information are openly raised. In them, the exchange of opinions and perceptions of the concept of disinformation is raised, as well as their concern and repercussion in relation to it.

- Scale of attitudes on issues related to national security, the progress of the economy, confidence in the future, the vision of human morality, progress, amongst others are used in order to contrast the results with the responses and attitudes expressed towards news items throughout the experience.

3.4. Quantitative Phase Specifications

Disinformation is a broad, complex and multifaceted field of study. However, from a quantitative perspective, it is essential to have concrete, well-defined and operationalizable concepts. Following this premise, the first step is to establish what is possible and what is not possible to measure. This implies, necessarily, leaving out of the scope of the study certain complex (if not impossible to be addressed with guarantees through quantitative methodology) aspects or dimensions. That is, in this phase the field of vision of the study must be reduced to ensure adequate observation.

In order to determine which factors make disinformation more or less credible, it is essential, firstly, to define these factors in order to measure and quantify their effect. In this sense, the qualitative phase helps, among many other things, to establish an exhaustive list of elements that affect the greater credibility of information.

The first task is to specify the possible scope of the quantitative phase by selecting, from the qualitative list, those factors that it is possible to use. Two criteria are taken into account in this selection: importance and measurement. That is, the factors whose effect on credibility are clearer are selected (disregarding others with a more residual weight), and which in turn were transferable to a questionnaire. Analysing the list extracted from the qualitative phase, it is possible to group the factors into three large dimensions:

- Those that have to do with the channel; understanding channel as the way in which an individual learns or finds out about the (dis)informative piece.
- Those that are related to the source. That is, those that are related to who originates/creates the news item (Inside this, we believe it is appropriate to explain the importance of including the ideological line as one of the factors to be analyzed, given that numerous studies have shown its relevance in influencing different groups [50,51], as well as the preference and predisposition to believe certain news if they appear in the media whose ideology is close to one's own, as indicated by the Theory of Uses and Gratifications by Katz and Blumler [52]. The reality is that the reader interprets the news in one way or another according to the media from which it comes. This information is not offered during the experiment, so introducing the ideological line can make up for this lack).
- Those that have to do with content. That is, with what and how the (dis)information is told.

Under this scheme, the following factors are selected:

In total, ten different factors are measured that meet the two aforementioned selection criteria: they are relevant for the message to be more or less credible, and they are measurable.

The list of factors selected has, in turn, additional implications that affect the scope of the quantitative phase of the study. The items of (dis)information used in the measurement must fit said factors.

It is therefore necessary that the pieces used have a clearly identifiable source/origin. Consequently, canards such as the ones that arrive via WhatsApp and that, regardless of the sender, are anonymous, are left out.

In turn, it is necessary that they are (dis)informative pieces that have been (supposedly) published in some written medium (online or paper). Rumours that come from informal comments from the environment or false news from media such as television or radio are left out. To make the news items more realistic, respondents will read the headlines. Expressing television or radio news pieces in writing makes the situation too artificial. Consequently, it is decided to omit these media in order to guarantee a higher quality of

the data. In addition, to achieve certain realism, it will be necessary to create videos and audios of the different news items, which is excessively complex.

3.4.1. Prospective Approach

Once the what (range) is defined, it is necessary to make decisions about the how (focus). From a methodological perspective, two possible paths are opened to face measurement:

- Analysing the past. That is, to analyse what respondents have already done: what news has caught their attention recently, how they have reacted to said news, what degree of credibility they gave it, etc. This alternative has some significant problems: the imprecision of memory, the effect of the theory of the spiral of silence or the prudent lie and, perhaps the most relevant, the lack of control over the specific news items in terms of the factors previously defined.
- Analysing the (possible) future. That is, to analyse what the respondents may do in the face of certain exposure to (dis)information. The main problem with this path is that respondents are placed before a fictitious (laboratory) situation. However, on the one hand, it allows control over the news items to which the interviewees are exposed and, on the other, the harmful effects of resorting to recollection are avoided.

After analysing the pros and cons of the two possible alternatives, it is more convenient to opt for the second path and confront the respondents with an experimental situation: they will be exposed to a series of stimuli (news pieces) and they will indicate, through the questionnaire, what their perception is of these and what behaviour they have before them.

3.4.2. Design of Stimuli for the Questionnaire

The following step, once the approach is decided, is to establish the stimuli that will be used in the measurement. At this point it is important to recall that one of the objectives of this methodology is to learn what factors affect the greater or lesser credibility of a news item. For this, there is a defined list of ten factors with their corresponding levels (Table 1). The stimuli that are used, consequently, must be able to be characterized as univocally as possible in a level of each of these factors.

It is advisable not to resort to fake news already published, given the complexity of finding valid examples for all the necessary options. At the same time, the possibility that some respondents already know the news items is avoided and their spontaneous reaction to it is not measured. Therefore, it is necessary to use fake news ad hoc designed for the investigation. However, how many news items are necessary? All the possible combinations of the factors and the levels used suppose such a high number that it seems virtually impossible to handle them in a single investigation. In this situation, it is recommended to generate a fractional factorial design (Table 2) that, ultimately, reduces the number of possible combinations to a more manageable one.

Table 1. Dimensions, factors and levels used.

Dimension	Factor	Level
Channel	Via	Social networks of popular public figure
		Social networks of non-popular public figure
		Social networks of unknown persona
		Nearby environment
		Direct source
	Repercussion	Much impact (likes, retweets, comments, etc.)
		Little impact

Table 1. *Cont.*

Dimension	Factor	Level
Source	Media	Online
		Traditional
	Track record/reputation	High reputation
		Reduced reputation
	Ideological line	Left
		Centre-left
		Centre-right
		Right
	Scope	Numerous readers
		Few readers
Content	Theme	Politics
		Technology
		Economy
		Health
	Specificity	Specific with data
		Non-specific with data
	Time frame	Breaking news
		Continuity news
	Style	Sensationalist
		Moderate

Source: own elaboration.

Table 2. Fractional factorial design example.

Via	Repercussion	Media	Track Record	Ideological Line	Scope	Theme	Specificity	Time Frame	Style
Direct source	Much impact	Traditional	Reduced reputation	Centre-left	Few readers	Health	Specific with data	Continuity news	Moderate
Social networks of non-popular public figure	Little impact	Traditional	Reduced reputation	Left	Numerous readers	Health	Non-specific with data	Breaking news	Sensationalist
Social networks of popular public figure	Much impact	Traditional	Reduced reputation	Centre-right	Numerous readers	Economy	Non-specific with data	Breaking news	Moderate
Social networks of non-popular public figure	Little impact	Traditional	High reputation	Left	Few readers	Economy	Non-specific with data	Breaking news	Moderate
Social networks of non-popular public figure	Little impact	Online	Reduced reputation	Centre-left	Few readers	Economy	Specific with data	Breaking news	Moderate
Social networks of popular public figure	Little impact	Traditional	High reputation	Right	Numerous readers	Health	Specific with data	Continuity news	Moderate
Social networks of popular public figure	Much impact	Online	Reduced reputation	Left	Numerous readers	Politics	Specific with data	Breaking news	Sensationalist

Table 2. *Cont.*

Via	Repercussion	Media	Track Record	Ideological Line	Scope	Theme	Specificity	Time Frame	Style
Nearby environment	Little impact	Traditional	Reduced reputation	Right	Few readers	Politics	Non-specific with data	Breaking news	Sensationalist
Social networks of non-popular public figure	Much impact	Traditional	Reduced reputation	Centre-right	Numerous readers	Politics	Specific with data	Continuity news	Moderate
Social networks of popular public figure	Much impact	Online	Reduced reputation	Right	Few readers	Health	Specific with data	Breaking news	Sensationalist
Social networks of unknown persona	Much impact	Online	High reputation	Right	Numerous readers	Economy	Specific with data	Breaking news	Moderate
Nearby environment	Much impact	Traditional	High reputation	Centre-left	Numerous readers	Economy	Specific with data	Continuity news	Sensationalist
Social networks of unknown persona	Little impact	Online	Reduced reputation	Centre-left	Few readers	Politics	Non-specific with data	Continuity news	Moderate
Social networks of unknown persona	Little impact	Traditional	Reduced reputation	Left	Numerous readers	Technology	Specific with data	Continuity news	Sensationalist
Social networks of popular public figure	Little impact	Online	High reputation	Centre-left	Numerous readers	Technology	Non-specific with data	Continuity news	Sensationalist
Social networks of unknown persona	Much impact	Traditional	High reputation	Centre-right	Few readers	Health	Non-specific with data	Breaking news	Sensationalist
Social networks of unknown persona	Little impact	Traditional	Reduced reputation	Right	Few readers	Economy	Specific with data	Continuity news	Sensationalist
Social networks of non-popular public figure	Much impact	Traditional	High reputation	Centre-right	Few readers	Technology	Specific with data	Continuity news	Sensationalist
Direct source	Little impact	Traditional	High reputation	Right	Numerous readers	Technology	Non-specific with data	Breaking news	Moderate
Social networks of non-popular public figure	Much impact	Online	High reputation	Right	Numerous readers	Politics	Non-specific with data	Continuity news	Moderate
Direct source	Little impact	Online	High reputation	Centre-right	Few readers	Politics	Specific with data	Breaking news	Sensationalist
Nearby environment	Little impact	Online	Reduced reputation	Centre-right	Numerous readers	Technology	Specific with data	Breaking news	Moderate
Social networks of unknown persona	Much impact	Traditional	High reputation	Centre-left	Numerous readers	Politics	Non-specific with data	Breaking news	Sensationalist
Social networks of popular public figure	Little impact	Online	High reputation	Centre-right	Few readers	Economy	Non-specific with data	Continuity news	Sensationalist
Social networks of non-popular public figure	Much impact	Online	Reduced reputation	Right	Few readers	Technology	Non-specific with data	Continuity news	Sensationalist
Social networks of unknown persona	Much impact	Online	High reputation	Left	Few readers	Technology	Specific with data	Breaking news	Moderate

Table 2. *Cont.*

Via	Repercussion	Media	Track Record	Ideological Line	Scope	Theme	Specificity	Time Frame	Style
Social networks of popular public figure	Little impact	Traditional	High reputation	Left	Few readers	Politics	Specific with data	Continuity news	Moderate
Social networks of unknown persona	Little impact	Online	Reduced reputation	Centre-right	Numerous readers	Health	Non-specific with data	Continuity news	Moderate
Social networks of popular public figure	Much impact	Traditional	Reduced reputation	Centre-left	Few readers	Technology	Non-specific with data	Breaking news	Moderate
Nearby environment	Much impact	Online	High reputation	Left	Few readers	Health	Non-specific with data	Continuity news	Moderate
Social networks of non-popular public figure	Little impact	Online	High reputation	Centre-left	Numerous readers	Health	Specific with data	Breaking news	Sensationalist
Direct source	Much impact	Online	Reduced reputation	Left	Numerous readers	Economy	Non-specific with data	Continuity news	Sensationalist

Source: own elaboration.

The generated design must meet the following characteristics:

- Orthogonality: a design is orthogonal when the number of times that a level of a factor is compared with all the levels of the rest of the factors is equal or proportional.
- Balance: a design is balanced when the different levels of each factor are shown the same number of times.
- Positional balance: there is positional balance when all the levels appear in the different positions a similar number of times.

For the remaindering factors, the information should be included in the most specific way possible and without identifying specific examples (Table 3). In this way, all respondents are provided with the same information. Hence, their interpretation is more controllable and less subjective than when talking about specific media.

Table 3. Final example of a stimulus.

The COVID-19 vaccine is harmful to health. According to a WHO study, the vaccine will have more adverse effects than positive ones for the older population	
In what media is the news item published?	An online newspaper
	Centre-right ideological line
	With a high reputation
	With few readers
Please imagine that you learn about this news item in the following manner:	
Through a popular public figure/many followers share it on any of their social networks	
The news item has high impact (It is shared, retweeted, sent and commented a lot)	

Source: own elaboration.

It is not possible, for instance, to know how each respondent ranks a specific newspaper in the factors that are being measured. However, if it is directly indicated that it is an online newspaper with a centre-right-wing ideological line and with few readers, the information has a much more univocal and less interpretable character.

On the other hand, it is concluded that exposing each of the respondents to all possible stimuli is unwise. The duration of the interview would be longer than is advisable, causing fatigue in the respondent and, ultimately, making the quality of the responses and the information obtained inadequate.

To avoid this problem, it is recommended to expose each interviewee to six different stimuli. Different message rotations are designed for this, ensuring that each of them is composed of different topics and that each respondent sees the greatest variability of messages in relation to the factors being measured.

Additionally, another objective is addressed: to learn what elements influence the degree of vulnerability that individuals have with respect to the (dis)informative messages. To respond to this objective, the characteristics of each of the respondents must be measured in the questionnaire, in order to see how they relate to the credibility granted by the news tested: sex, age, educational level, exposure to the Internet, degree of interest and information with the topics to which the news refers, ideological position and socioeconomic level.

3.4.3. Weight of Factors According to Interest and Credibility

For every visualized stimulus, each respondent is asked their degree of interest, degree of credibility and their behaviour: would you expand on the information/click on the link/read it in full/share it on your social networks/send it to your private contacts/comment on it with your environment (friends, family, colleagues, etc.)?

The Conjoint procedure was used to determine the weight of each of the factors in the credibility and interest of the news. Conjoint analysis is a statistical procedure that allows the determination of the importance of a series of aspects or characteristics (in this case, the ten factors), without asking directly about those characteristics.

Initially, the Conjoint procedure was developed for its use in mathematical models of psychology and its application to marketing. In fact, its use was limited for many years, mainly for two reasons: the complexity when designing, executing and analysing a study of this type, and the low power of computers in the eighties and nineties, which prevented the analysis of moderately complex Conjoint studies.

In recent years, this technique has once again received the attention of researchers because, amongst other reasons, current computers can carry out complex analyses in minutes (or a few hours). The Conjoint procedure results in a utility score—called a partial contribution— for each level of the factors. These scores provide a quantitative measure that expresses the effect of each level on the credibility and interest of each news item.

3.4.4. Design of the Online Questionnaire

Finally, the technique chosen for this phase is an online panel survey. The decision to use this tool responds, fundamentally, to the need to show stimuli to the interviewees. The online interview enables respondents to read all the information with some confidence. In the case of conducting a telephone survey, it is more complex for the participants to assimilate all the stimuli and give quality responses.

At the same time, compared to other alternatives that also allow the interviewees to read the stimuli, the online interview allows a greater geographical dispersion, guaranteeing, in this sense, a more representative sample.

For the design of the sample, the variables that may a priori have a greater influence on the object of study will be taken into account: age and level of studies, namely. The distribution by sex and geographical area has also been controlled.

Therefore, a multistage sample is recommended, based on proportional and stratified random conglomerates, taking into account the idiosyncrasy of the country where the research is carried out that meets the quotas for sex, age and level of studies. This is performed considering the sampling error standards, where a confidence level of 95.5% is sought, presenting a real error of $\pm 5.0\%$ for the entire sample.

4. Discussion and Conclusions

This work provides a methodological proposal for the study of the vulnerability factors contributing to misinformation. The research design approaches the problem from complementary methodologies. The system methodologically triangulates between

quantitative and qualitative techniques providing, as indicated by Hernandez Sampieri, Fernandez Collado and Baptista Lucio ([50], p. 791), greater confidence and validity to the results and greater sensitivity to the degrees of variation not perceptible with a single method.

We have worked with a qualitative technique through the Internet, located between the qualitative panel and the focus group, using an ad hoc qualitative tool, the Sensors methodological instrument, developed by the Analysis and Research group, a digital community subject to different variables, which integrates and represents different social sectors.

At the same time, it is combined with quasi-experimental research, in line with previous work in this field, such as Saunders and MacLeod [7]. The proposed methodology is aligned with the methodological construct followed by many other previous works, such as McGrew et al. [13], Hatlevik, Guðmundsdóttir and Loi [14] or Nygren and Guath [12], in which the use of tasks to evaluate different aspects, such as skills, is common, combined with the use of the survey and, in our case, with a clear bet for its representativeness, such as Kelly [16]. Another fundamental line is that the activity that involves researchers in the process is reduced to a minimum, avoiding creating the artificial environment indicated by Wineburg and McGrew [10].

However, previously existing content is not used, rather it has been developed to offer an ex profeso stimulus in which the specific levels of the proposed study factors are determined, unlike other works, such as the one cited by Nygren and Guath [12], in which the evaluated variables are native ads, unknown comments and scientific evidence. In our case, we design a set of stimuli uniquely characterized at one level for each of the factors. In addition, the established factors have already been used in other work, and some of which has already been published [53].

In short, the application of the methodological proposal results in an integrated analysis whose specification of data, operations, calculations and theoretical models consulted show that what is important for the work process is the following:

- The analysis of results is progressive and continuous during both phases, resorting to the cross-analysis of data of different nature (speech, psychometric tests, scanning of news items, news contributions from informants, spontaneous debates, personal ethnographic diaries, amongst others).
- The exhibition of the sample of fake news and true news is carried out with quasi-experimental criteria so that the stimuli (supports, sources, content and publication scope) are presented through an adequate rhythm and in a rotating model so the results can show construct validity.
- The presentation of results is carried out in an integrated way between some and other inputs.

This has been evidenced in its application to the aforementioned national project, "Study of the conditioning factors of misinformation and proposal of solutions against its impact based on the degrees of vulnerability of the groups analysed", financed internationally by the Luca de Tena Foundation and the social network Facebook, within the framework of a public contest.

In addition to the data reflected in the report presented, the amount of information collected during the investigation is allowing new results to be obtained by crossing specific information from the different variables that show a series of synergies that had not been contemplated in the initial objectives and hypotheses.

The results achieved, and those that are being achieved with this new approach, make it clear that this methodology allows a holistic study of a polyhedral reality, such as disinformation.

Finally, with the results that can be obtained by applying this methodological proposal, some lines of action with which to deal with disinformation can be proposed:

- Create news verification networks in order to neutralize disinformation campaigns between the different social agents.

- Generate and promote the use of technologies based on artificial intelligence to help detect disinformative content.
- Develop media and digital literacy actions, as well as establishing measures against disinformation for the general public, especially focused on the most vulnerable groups in society.
- Instruct the new generations of journalists and media professionals on good praxis, emphasizing the control of factors that can condition vulnerability to disinformation.

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Educational Influencers on Instagram: Analysis of Educational Channels, Audiences, and Economic Performance

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Abstract: Influencers have positioned themselves as opinion leaders capable of influencing large social groups, extending their presence to areas such as education. Instagram is one of the most consolidated social networks focused on the image where citizens interested in educational areas can find information from specialized channels on this topic. The purpose of this study is to analyze, during the period of confinement by COVID-19, the use of Instagram by educational influencers to consolidate their channel in new audiences, influence through interaction with their followers and create their transmedia production. Using a mixed methodological approach, a descriptive analysis of a sample of 810,200 users and a content analysis of 13 profiles of educational influencers is applied. The results show educational influencers as true experts in the use of Instagram, managing visually pleasing and harmonious profiles for new audiences. These influencers reach a large number of users, mostly women between the ages of 25 and 45 with an interest in "motherhood" on the platform. Educational influencers use digital marketing codes in their social networks, with a communicative style adapted to this type of space that seeks to increase the interaction and participation of new audiences and, as a consequence, economic profitability. There is a high number of influencers whose objective is to share educational resources, using their accounts as showcases for their transmedia educational production and for the sale or promotion of their productions and creations.

Keywords: Instagram; educational influencers; communication; social media; new audiences; transmedia production; digital marketing; descriptive analysis; content analysis; social networks

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1. Introduction

Social networks have been consolidated in society, during the COVID-19 pandemic period, as tools for interaction between people from different parts of the world. The study and analysis of the communication and interaction strategies applied by users in these environments are used from the digital marketing sectors to define strategies with which to reach wider audiences and adapt to the new ways in which society consumes information. In this aspect, the figure of influencers has established itself as one of the most important, thanks to its ability to set the trends of the moment, having a fundamental role in the consumption of a large part of the population. In addition to the perspective of digital marketing, in recent years the education sector has made the leap to these digital environments in which to expand its transmedia production, known, as collected by Jenkins and Scolari, as that flow and connection that occurs through multiple distribution channels and platforms [1,2], involving the different social agents (students, families, etc.). The purpose of this work is focused on analyzing how educational influencers use the social network "Instagram" to show their transmedia production to audiences. This study focuses on the analysis of 16 accounts of educational influencers in Spain (characterization of the channels and content analysis), the impact they generate on their audiences and the economic benefits they generate with their activity on Instagram. An exploratory and descriptive study has been applied for the approval of research propositions. One of the main values of this research is the contribution to the scientific community on the figure of

the educational influencers in our society, as well as clarifying what type of activity they carry out and the relevance of their reach on Instagram.

1.1. Instagram as a Social Platform

The post-COVID-19 society in which we live in 2021 is immersed in an uncertainty in which digital technologies govern people's daily lives, generating situations of real instability and dependence in their absence [3]. The communicative model that has been empowered through new media has seen its maximum projection in social networks such as Facebook, Instagram, Twitter, TikTok or Twitch; this fact reminds us once again that human beings are social beings who constantly seek interaction with their peers, thus turning social media into fundamental channels for instant communication and interaction between people in the global village [4]. This fact has disrupted the activity of traditional power (political parties, media and companies) [5], forcing them to make a considerable leap towards citizen participation environments in order to disseminate their productions and influence the social imaginary [6]. In the midst of this media framework, there is a danger of generating disinformation, in this case, fake news being the current hot topic, distancing citizens from the development of critical thinking in the context of so much media manipulation driven by ideological interests.

Whether to generate information or to provoke disinformation, nowadays there are extensive possibilities to interact in social networks, with digital access being quite common among citizens not affected by the digital gap. It is true that some social networks such as Facebook or Twitter have a large legion of users, but Instagram currently enjoys greater success among the younger generations as it is a very attractive social network that allows for production and creation in image, audiovisual and hypertext formats and stands out for being highly intuitive [7]. Instagram in its early days offered a more limited service than the current one, as in recent years the platform has added new functions in response to technological advances and user demands, including: Instagram Stories (24 h stories), the highlights section (space to keep stories on the profile), Instagram Shopping (tagging products in publications) and IGTV (option to upload vertical and long videos) [8]. For these reasons, Instagram is recognized as the leading image-centric social network, offering its users constantly updated content based on the accounts with which users interact, profiles followed, likes, etc., in which static images alternate with long or short videos. Despite its long life cycle, this social network is much consolidated, showing constant growth year after year [9]. The data provided by The Instagram Summary 2021 [10] shows that this social network is in a quite positive situation, showing a growth of 22.1% compared to 2020, reaching 1.221 million active users. Among the profiles created, there is a fairly even distribution of usage by gender, with 51% women and 49% men. In terms of Instagram age group use, the worst results are obtained among 13–17-year-olds (7.3%), 55–64-year-olds (3.8%) and +65-year-olds (2.1%). These data improve in groups between 35–44 years old (16%) and 45–54 years old (18.1%). The population groups that lead the results in terms of the use of this social network are those aged 18–24 (29.8%) and 25–34 (33%), accounting for some 766.7 million Instagram users. Digital natives, or millennials, young people born between the 1980s and 2000s, are the main consumers of social networks, since they perfectly understand the codes that are used in them [11–15]. As children of the Baby Boomer Generation, they have lived in the digital context, conditioned by other social values, and other ways of working and relating. Millennials seek interaction in these environments, feeling interested in the information they find on the Internet in order to update themselves, study, interact, consume and be entertained; it is a hyper-connected generation that still resists trends. This generation shows great social and ethical values, according to a report published by CIBBVA in 2021 [16]. Alsop defines this generation as tolerant, optimistic, restless, civic, team-oriented and conscientious people in the search for a balance between work and leisure [17]. Syrett and Lammiman describe them as individualistic, technological, sophisticated, mature and with a great personal identity [18]. In the social sphere in which Burstein has lived, the economic crisis in which this generation

has grown up stands out, causing an activist and protest profile, although affected by the consumer culture and materialism that has been projected with force through the networks social [19].

1.2. Influencers

Social networks have not only changed the form of participation and interaction of citizens and the creation of a culture of participation [20] but also the possibility of consuming information on the part of new audiences, leading to a change of role to a direct, immediate and purely participatory interaction, going from being passive consumers to being active, critical actors and creators of content as prosumers [21]. Interaction is part of the very nature of human beings in their search for belonging to a group, which in these digital environments translates into the implementation of certain elements such as likes, mentions, comments, hashtags, etc., which favour the loyalty and commitment of audiences and their engagement [22]. This type of interaction favours the growth of Instagram profiles, especially among those who generate the most activity among their audiences: influencers.

Influencers are people who have great power of influence in social networks, with a large number of followers and with great prestige among children, adolescents and young people. The key aspect of a good influencer and the one with the most presence of brands is their engagement power that they enhance with their target. The ability of a product or a brand to establish solid and lasting relationships with their followers is demonstrated, creating a commitment that is established between the brand and consumers and the consumption habits that it develops. The figure of the influencer can be defined as users who are experts in a subject matter and who have a certain power or prestige to make their creations and transmedia productions reach a large number of people, generating a notorious repercussion on new audiences, sometimes even influencing the tastes and trends of society. In this sense, we can understand the transmedia production as the story that each user shares on communication platforms, in this case Instagram, being recorded as their own personal mark, a trace that consumers are responsible for expanding on the network through their actions (likes, shares, etc.). Well-known influencers make constant use of strategies to control their audiences and traffic of channel consumption, to access followers with a certain profile, to organize the content offered on the channel, to manage and schedule publications or to manage the profile's links [23]. Around all these approaches, various theories have been developed that explain the basis for the growth of new audiences on social networks, and which are supported by the various algorithms. Peters et al. [24] argue that the elements that favour user growth on Instagram include the quality of the content and the quantity of posts made, with the former having greater weight. Sánchez-Amboage, Membiela-Pollán and Rodríguez-Vázquez [25] establish five keys for effective communication on Instagram in order to grow a brand: (1) Use the image as the main resource; (2) generate a feed with personal style that acts as a connecting link; (3) include text message in the image description, using a language close to the audience; (4) use humor as a key to entertainment; and (5) be constant in publishing content on the channel. The content generated by these influencers can promote an informed, committed and critical citizenry, although also on occasions, as we have observed due to the COVID-19 pandemic, they have jeopardized an adequate practical implementation of the basic health principles: autonomy, beneficence, justice and non-maleficence [26].

This context has generated a breeding ground for the development and implementation of so-called digital marketing [27], which has to do with the commercial use given to social networks by companies, media and political parties, and of course, also by individuals such as influencers, in order to market their products in the midst of platform capitalism. Digital marketing seeks to take advantage of interactivity and segmentation, immediacy, globalization, quality of impact, accessibility and reduced economic costs to position brands among social network users. Part of the strategies followed by many companies on the Internet are based on influencer marketing, which consists of the pro-

motion carried out by the influencer through their channel, with the aim of generating a positive repercussion among their audiences towards the promoted brand [28]. Social media marketing and the strategies associated with it, however, are not relevant to all generations, with millennials being the group most attuned to the type of advertising and online commerce, a fact known among marketers to establish appropriate strategies [29].

1.3. Educational Influencers on Instagram

Social networks have become essential spaces for interaction and entertainment also in professional life [30], including areas of human development such as education. However, all the areas of interest on Instagram share the same characteristic: They include influencers who use their status on the network to influence audiences [31]. As it can be intuited, the educational world, in its constant search for innovation and adaptation to the digital reality, has sought its own ways to adapt to these new environments in which to share and give relevance to pedagogical aspects that may be of interest to the various educational agents. In this context, educational influencers emerge, who project themselves as leaders of the new audiences and who generate and share transmedia productions and creations related to this field [32]. Within the Instagram social network, different profiles of educational influencers are projected, as they are distinguished by different patterns depending on the type of content they offer on their channels. Studigrammers are characterized as users who share notes, doubts and educational reflections with their audiences [33]; bookstagrammers share content related to children's books or stories with the community, encouraging the desire to read [34]; learning influencers are teachers who use social networks such as Instagram to promote learning situations among their students or audiences, from the perspective of inter-creation and participation [35]. Likewise, in these environments, there are profiles of influencers who share didactic resources with the community, so that they can be applied in different pedagogical contexts [36], becoming a kind of learning mediators. It should not be forgotten, due to the great repercussions they tend to generate, the influencers who, within the educational framework, offer humorous content through memes [37], a format that is widely consumed among the younger generations. Finally, digital marketing has taken over a large number of the publications disseminated on Instagram; educational influencers are part of this mercantilist trend in the media, using their profiles as showcases for companies that request their services or to advertise and sell their own services to their audiences [38].

2. Materials and Methods

The research on social networks, in this case, Instagram, is really relevant due to the large amount of information it offers on large population constructs, providing data related to tastes, self-management or social interaction [39]. The study process addresses how educational influencers use Instagram to consolidate their channel with new audiences, influence the community and make transmedia projections of their productions and creations. In order to achieve this aim, it is appropriate to set objectives that serve as a reference point for the study:

- O1: Study the main characteristics of the profiles of educational influencers;
- O2: Discover the media impact that educational influencers have on new audiences;
- O3: To analyze the communication and interaction of educational influencers with new audiences through their transmedia production.

Likewise, the propositions established for this analysis are:

- P1: The audiences where educational influencers generate the greatest media impact are mostly millennials.
- P2: Educational influencers use a transmedia projection of the resource materials they produce and create for purely educational and non-commercial purposes.
- P3: Educational influencers establish effective channels of communication and interaction with their audiences.

This study is based on the approaches of mixed analysis models, in which quantitative and qualitative method approaches interact, with the aim of establishing the state of the question in depth [40]. In order to move forward in a rigorous and scientific manner, two categories are established, favoring a better treatment of data. The two categories are (a) educational influencers and new audiences; (b) transmedia production. In addition, it should be specified that there are several subcategories that are conducive to a more comprehensive study, knowing that educational influencers and new audiences are composed of: characterization of educational influencers, new audiences and media impact: communication and interaction. The second category, Transmedia production, is divided into: Transmedia image production and creation, Transmedia hypertext production and creation and Economic purpose of transmedia production (Table 1).

Table 1. Categories and subcategories.

Categories	Subcategories
Educational influencers and new audiences	Characterization of educational influencers
	New audiences
	Media impact: communication and interaction
Transmedia production	Transmedia image production and creation
	Transmedia hypertext production and creation
	Economic purpose of transmedia production

The quantitative paradigm allows us to advance in the study of the data obtained through the influencer tracking tools Heepsy and Influencity, as well as certain quantitative data (account type, main image, language of the channel, links on the board, design of the publications, characteristics of the message and codes used) obtained through a check list of the accounts analyzed on the Instagram platform. The use of the SPSS (IBM, Amonk, NY, USA) program in its Windows version has favoured the efficient and orderly processing of the data, making progress in the application of descriptive analyses on some dimensions of our research: characterization of educational influencers and impact on new audiences. The analysis of averages and percentages as descriptive analysis techniques has been applied to the following variables of the two blocks mentioned: educational influencers' characteristics (type of account, main image, language used and links on the board), follower profile (gender, age range and interests) and media impact (number of followers, number of likes, number of comments, number of posts, number of reactions, number of posts per day, comments per post and economic impact).

On the other hand, the qualitative approach has been used to analyze the creation and production of transmedia on the accounts of educational influencers as part of the last category of our research, content analysis. Taking into account the main characteristics of Instagram, we first decided to carry out an analysis of the visual content of the Instagram accounts, and secondly, we analyzed the discourse of these influencers in the written messages they provide as descriptions in their posts. As part of the analysis of the visual content on Instagram, we studied the esthetics of the publications, paying attention to the visual feed offered by the boards of the educational influencers and, secondly, the use of personal images as part of the content. Within the discourse analysis, elements such as the type of hypertext, use of formal or informal language, incitement to audience participation, types of interaction elements used (hashtags, mentions, emoticons, links, etc.) have been analyzed. Finally, as part of the content analysis, we proceeded to analyze the purpose of the publications, systematically recording the purpose for which educational influencers use their accounts: commercial, materials, training, memes, personal, art, etc., and finally to be able to determine what type of influencers we are dealing with.

2.1. Investigation Process

The process of this research is divided into four phases:

1. Data collection period. This phase took place between the months of March and July 2020. In the first place, a list of educational Instagrammers proposed by the Ministry of Education, Research, Culture and Sports of the Generalitat Valenciana [41] was used, thanks to which a total of 13 Instagram accounts of educational influencers were selected. Using "Heepsy" (Berango, Vizcaya, Spain) and "Influencity" (Madrid, Spain) software helped the data collection. The use of direct observation of the accounts and the control lists made it possible to analyze the characteristics of the channels involved in our research.
2. Categorization. Once a first careful reading of the themes found in our sample had been carried out, it was considered important to define some categories of analysis that would contribute to a meaningful and coherent organization of the analysis. Two main categories were established with their corresponding subcategories (Table 1).
3. Analysis of the categories. The previous categories were analyzed through descriptive analysis (means and percentages) where the SPSS (IBM, Amonk, NY, USA) program helped us organize and present the information in an adequate way. Likewise, the content analysis of the analyzed accounts was very relevant where the use of checklists stood out to record each element studied.
4. Study of the results obtained. In this last phase, with the information organized into categories, the results obtained were described through an exhaustive study of de data collection.

2.2. Sample

Following the list offered by Eines Digitals Educatives on its website [28], we find the Instagram accounts with educational content that have been chosen to make up our sample of Instagrammers. The channels involved in this study offer content related to the educational area, sharing educational resources, humorous content or information for future teachers.

The sample included 13 Instagrammers and their 810,200 followers. Table 2 shows the accounts involved in this analysis, the number of followers they have and the first publication date on each channel. The data used in this study has been collected from March to July 2020, coinciding with the closure of the schools as result of the outbreak caused by the COVID-19 pandemic.

Table 2. Research sample.

Account Name	Followers	First Publication Date
@2profesenapuros	63,000	8 March 2015
@3ways2teach	6800	29 September 2015
@applesandabcs	150,000	23 October 2012
@auladeapoyo	41,000	22 August 2016
@clubpequeñoslectores	37,000	17 October 2014
@desdemiaula	13,000	21 December 2016
@educacioilestic	14,000	10 September 2015
@enticonfio	7400	6 February 2014
@entrenubesespeciales	120,000	6 May 2016
@maestradepueblo	130,000	30 January 2016
@maestrosaudicionyl	31,000	3 January 2016
@teachinghumor	67,000	8 January 2014
@thinksforkids	130,000	9 August 2013

3. Results and Findings

The descriptive analysis applied in this study allows us to establish a clear framework for the state of the characterization of educational influencers, new audiences and the media

impact that these influencers generate on their channels, thanks to the results obtained through a statistical analysis of means and percentages applied to the different analysis selected for this research.

The analysis of the visual content and the discourse in these channels offers an identification of the analyzed accounts and the processes followed to reach their audiences. In this sense, we include the Transmedia production category and its subcategories. A descriptive analysis is added on the average earning data of the accounts involved.

3.1. Educational Influencers and New Audiences

3.1.1. Characterization of Educational Influencers

A large majority of the influencers analyzed (85%), as can be seen in Figure 1, use an account that does not have verification, which means that they are not officially recognized as a public image and may be more exposed to account falsifications; the following profiles do have such verification: @maestradepueblo and @thinksforkids. The use of the main image of the account on Instagram is the introduction letter of any influencer on social networks. It can be seen that the majority of educational influencers (69%) have decided to use an identity image in relation to the content that can be found on the channel; however, @applesandabcs, @maestradepueblo, @maestrosaudicionyl and @thinksforkids use their personal image as the main avatar of the account. The language most used in the accounts analyzed is Spanish (62%), followed by English (15%), with some accounts using several languages to have a greater impact on new audiences (Spanish, Catalan and English). Within the account description, 92% of influencers have added a link to a website external to Instagram, and 46% of the accounts analyzed make use of a link manager (linktree, linkbio or linkinprofile) in which the audience accesses a list of web spaces to which they can go via transmedia navigation, proposed by the influencer in question (personal page, personal blog, shopping page, others, etc.). Moreover, 38% of the profiles in this study link directly to their personal website, where they share information about personal productions, materials they have created, training services or sales of other products. Finally, we have only found one account that also screens on the YouTube social network with its audiences and another that has no link enabled. As we can see in Figure 1, a diagram shows the main characteristics that these influencers offer to their audiences in their home profile, compiling information related to the type of account, the main image, the language used or the use of external links. In 100% of the biographies of these profiles, written text has been used in which explicit and concise information is given about the type of content that can be found in the profile, but not about their personal background, academic training or qualifications, thus generating a disinformation bias.

In the analysis of the new Instagram audiences, it is interesting to know, as part of the characterization, the credibility of the users who make up the followers of each of the educational influencers analyzed; Heppsy software has given us some interesting facts about it. Figure 2 shows the percentages of nice followers, which refers to real followers who carry out their activity without the presence of computer programs (Bots). Likewise, the doubtful followers appear on this figure representing those accounts thar present suspicious activity typical of Bots.

In all cases, the percentage of 'nice followers' is above 80%, which means that all influencers have a quality audience. It can be seen that the account with the worst data (@thinksforkids = 83.79% 'nice followers') and the one with the best percentages (@maestradepueblo = 92.03% 'nice followers') are also two of the accounts with the highest number of followers, which is interesting as it may have an impact on interaction levels. To determine the credibility scores of followers, factors such as avatar, biography description, number of posts or number of accounts followed vs. follower ratio are taken into account. Influencers with quality audiences will score 80 or more on the 'nice followers' variable.

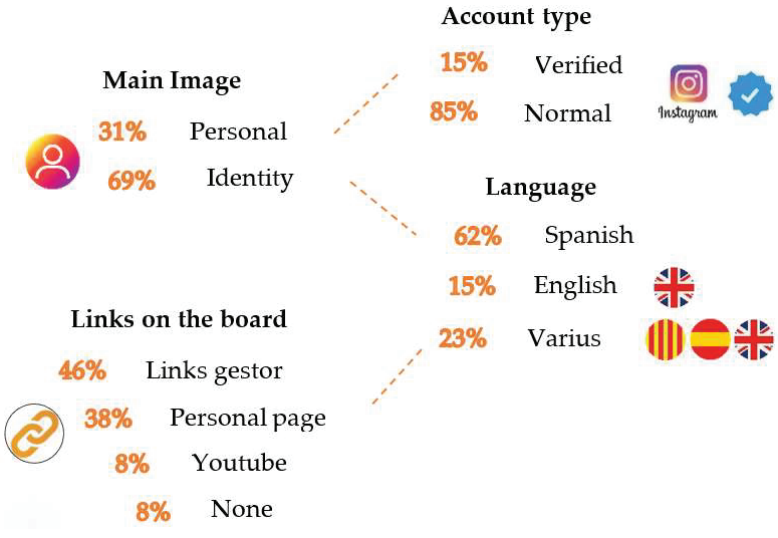

Figure 1. Characterization of the accounts. Source of own elaboration.

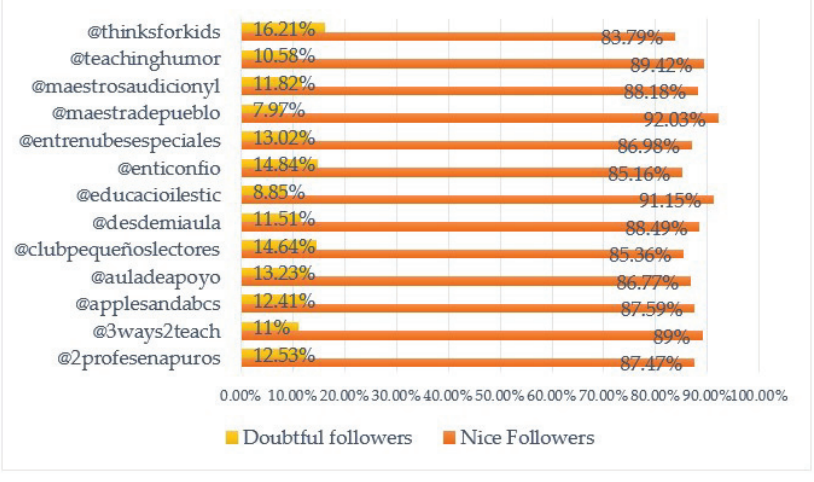

Figure 2. Percentage statistics (Quality of the audience). Source: Own elaboration.

3.1.2. New Audiences

In addition to the initial characteristics generated around influencers, it is appropriate to discover the new audiences that have been generated in the field of education observed since a demographic audience's characteristics point of view. It is interesting to note that of the more than 810,200 users who follow these accounts, 67% of the users (542,834) are female, while the remaining 33% are male (267,366), as shown in Figure 3. This data fluctuates slightly depending on the account we analyze, seeing how, for example, @teachinghumor has the largest female audience, with 73% of the total, while the @enticonfio account is the one with the highest percentage of men, with 43% of the audience being male.

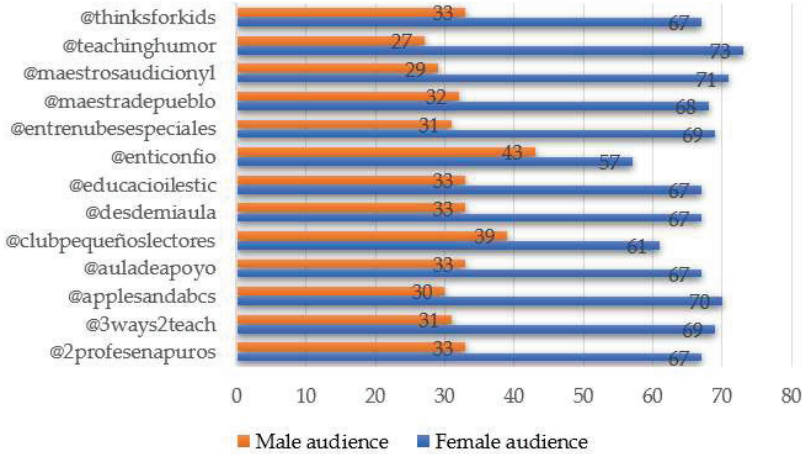

Figure 3. Percentages by gender. Source: own elaboration.

The age of the followers is another element that generates great interest when analyzing the characteristics of these audiences. For this purpose, we have analyzed the data obtained from the Heepsy tool (Berango, Vizcaya, Spain), which presents the audience of each influencer according to age range (–13 years, 13–18 years, 18–25 years, 25–35 years and 35–45 years), as shown in Figure 4. It can be seen that the age range with lower percentages is from the 13 years old to younger range (1.69%). This is closely followed by the audiences aged 13–18 (2.07%) and 18–25 (7.23%). Followers between 35–45 years of age have the best figures, rising to 26.08% of the audience. The age group that is shown to be the biggest consumer of this type of content, with a considerable difference from the rest, is the 25–35 age group, with a percentage slightly above 60% of the total audience, which is quite significant as it represents a total of 490,495 followers.

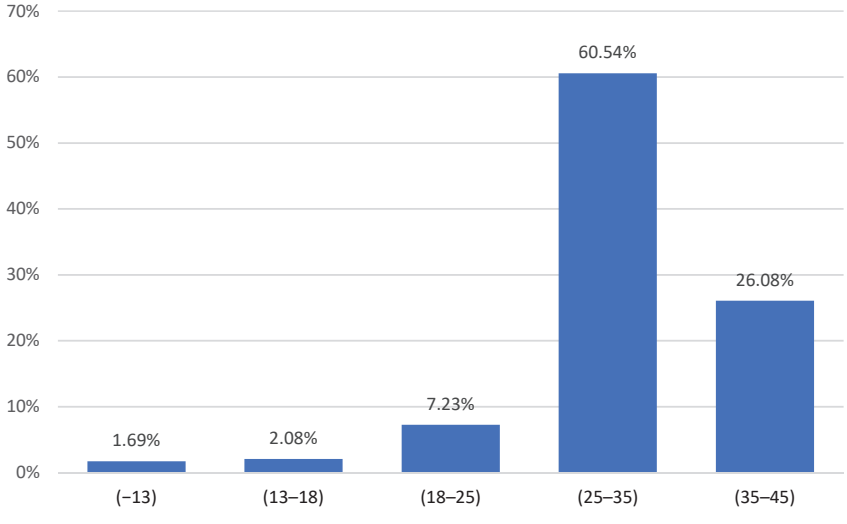

Figure 4. Percentage statistics of the means (Age). Source: own elaboration.

As for the interests of the audiences, as shown in Table 3, it can be said that 25.53% of the followers involved in this analysis show interests related to the category of motherhood,

representing around 207,000 thousand users, a figure that may be related to the age of the followers analyzed in the previous point. Other outstanding interests among the followers of educational influencers are: Pets 14.09%, Healthy Living 8.23% (fitness, sports and food) and Audiovisual Media 8.16% (TV, photography or graphic design). Below, with lower rates, are interests such as: travel 4.9%, beauty 4.08% or DIY 1.92% (Do It Yourself).

Table 3. Descriptive statistics (Audience interest).

	N		Media	Desv. Desviation	Minimum	Maximum
	Valid	Lost				
Maternity	13	0	25.5385	11.93465	0.00	43.00
Pets	13	0	14.0923	9.43102	0.00	35.00
Travels	13	0	4.9615	4.71709	0.00	13.00
Healthy life style	13	0	8.2308	5.99171	0.00	24.00
Bloggers	13	0	2.4615	3.30695	0.00	8.00
Interpretation	13	0	2.3077	5.02302	0.00	18.00
Beauty	13	0	4.0846	3.84184	0.00	12.00
DiY and Crafts	13	0	1.9231	3.79608	0.00	11.00
Music	13	0	2.1154	3.04243	0.00	9.00
M. Audiovisual	13	0	5.0154	8.16954	0.00	29.00
Youtubers	13	0	0.4615	1.66410	0.00	6.00

3.1.3. Media Impact: Communication and Interaction

In terms of media impact, it is interesting to analyze the results obtained, as they offer a clear perspective on the characteristics of the communication model, the movement and interaction that takes place among the audiences of the accounts analyzed, helping to determine values regarding the impact that educational influencers generate on Instagram through the publication of content on their channels. Table 4 shows interesting data on audience ratings, the number of posts made, along with the engagement rate. We see that, as of 31 July 2020, the educational influencers with the highest number of followers are @applesandabcs, @thinksforkids, @maestradepueblo and @entrenubesespeciales, all of them with more than 100,000 followers. With regard to the Followers/Followings ratio, it can be said that there are no significant differences between the accounts with the most followers and those with the fewest followers, with an F/F ratio of around 50; however, we could highlight the high values regarding this ratio by @teachinghumor (F/F ratio = 600), @maestradepueblo (F/F ratio = 460) or @educacioilestic (F/F ratio = 140). The three accounts with the highest number of followers: @applesandabcs (150,000), @thinksforkids (130,000) and @maestradepueblo (130,000) are among the accounts with the highest number of posts, with 2700, 4500 and 1100. It is worth highlighting the high levels of transmedia content production by @2profesenapuros (2100 posts) and @enticonfio (1000 posts), which are at the same level in terms of number of publications as the accounts with the highest number of followers. Likewise, when analyzing the three educational influencers with the highest number of weekly publications (@2profesenapuros, @applesandabcs and @entrenubesespeciales), we can see that they are also the ones that show the highest growth rate, so it could be said that the higher the number of publications, the higher the growth rate of the channel, although this does not occur proportionally.

As part of the analysis of media impact, it is of particular relevance to study the scope of repercussions generated by the publications of the selected influencers. The data obtained show, firstly, that many more likes than comments are generated among the audience, both in photo publications and in those publications in audiovisual format, as shown in Table 5. Although @applesandabcs is the account with the highest number of followers and one of the accounts that produces the most content throughout the week (5.9 posts per week), it is not the one that reports the highest number of likes and comments. This contrasts with educational influencers @maestradepueblo (+130,000 followers) and @thinksforkids (+130,000 followers) who report high likes on image posts, with 3800 and

1600 likes, respectively. We should highlight the account @teachinghumor (67,000 followers) for the high rate of participation it generates among its audience through 'likes', 2600 likes on photo posts and 1000 likes on video posts. As for the comments generated by these influencers' image posts, they remain fairly low, at around 50 comments for those accounts with the most interaction. However, it is interesting to note that the @thinksforkids account generated more comments than likes on its image posts, producing a different communication to the rest of the accounts: 2900 comments for 1600 likes.

In terms of audiovisual productions, not all accounts offer this type of content. In this case, it can be confirmed that the accounts that obtain the most reproductions of audiovisual publications are those with the highest number of followers (@applesandabcs, @maestradepueblo and @teachinghumor), although, once again, it is worth highlighting the account @2profesenapuros, which offers very high reproduction data considering that it has less than half the number of followers of those mentioned above, which speaks of a very active audience. In terms of comments, there is again a low rate of participation, around 50 comments, considering the number of reproductions and likes that these publications generate. In fact, if one looks at the ratio of comments per like, it can be said that there is no direct relationship between a high number of followers and a high ratio of comments per like (Table 5).

Table 4. Interaction of educational influencers.

Influencer	Follower	Following	F/F Ratio	Post	Post/S	Growth Ratio	Engagment Rate	Punt.
@2profesenapuros	63,000	1900	33	2100	7.7	2.9	0.6%	51
@3ways2teach	6800	1400	4.7	280	1.4	0.7	1.2%	61
@applesandabcs	150,000	3600	40	2700	5.9	2.6	0.4%	52
@auladeapoyo	41,000	1100	37	940	1.9	0.2	0.4%	52
@clubpequeñoslectores	37,000	940	39	970	0.79	0.5	1%	53
@desdemiaula	13,000	1300	10	320	1	0.2	0.7%	53
@educacioilestic	14,000	96	140	510	0.21	0.1	4.1%	58
@enticonfio	7400	540	14	1000	28	1.8	0.2%	56
@entrenubesespeciales	120,000	4500	26	970	5.1	5.6	0.7%	54
@maestradepueblo	130,000	290	460	1100	2.4	1	2.9%	55
@maestrosaudicionyl	31,000	410	75	830	3	1.3	0.7%	54
@teachinghumor	67,000	110	600	280	0.9	−0.5	4%	57
@thinksforkids	130,000	1500	86	4500	3.1	1.4	3.5%	59

Table 5. Impact of publications.

Influencer	Likes Pictures	Comment. Pictures	Video Playback	Likes Videos	Comment. Videos	C/L Ratio
@2profesenapuros	360 [a]	10 [b]	17,000	1300	86	2.8
@3ways2teach	77 [a]	5 [b]	730	57	10	6.5
@applesandabcs	540 [a]	21 [b]	11,000	430	44	3.9
@auladeapoyo	170 [a]	9 [b]	-	-	-	5.3
@clubpequeñoslectores	340 [a]	14 [b]	-	-	-	4.2
@desdemiaula	81 [a]	4 [b]	1900	110	29	4.9
@educacioilestic	550 [a]	4 [b]	-	-	-	0.7
@enticonfio	13 [a]	1 [b]	-	-	-	7.7
@entrenubesespeciales	720 [a]	56 [b]	-	-	-	7.8
@maestradepueblo	3800 [a]	56 [b]	26,000	2300	110	1.5
@maestrosaudicionyl	210 [a]	15 [b]	4900	220	4	7.1
@teachinghumor	2600 [a]	49 [b]	17,000	1000	40	1.9
@thinksforkids	1600 [a]	2900 [b]	7600	700	11	175.3

[a.] Total number of Likes on the last 12 photos posted. [b.] Total number of comments on the last 12 photos posted.

3.2. Transmedia Production

Content analysis reveals key information to discover the common practices of influencers in transmedia production on Instagram. An analysis of the accounts involved in our study has been carried out through a checklist. The data obtained provide us with information regarding the design of the publications or the characteristics of the messages and codes used, showed in Figure 5. A first approach is achieved by analyzing fundamental

elements of this platform, such as: the aesthetics of the publications, the characteristics of the productions and the codes used. After the systematic review of these accounts, we have observed main features in the media productions of the influencers that have been used in the development of this analysis, as presented in Figure 5.

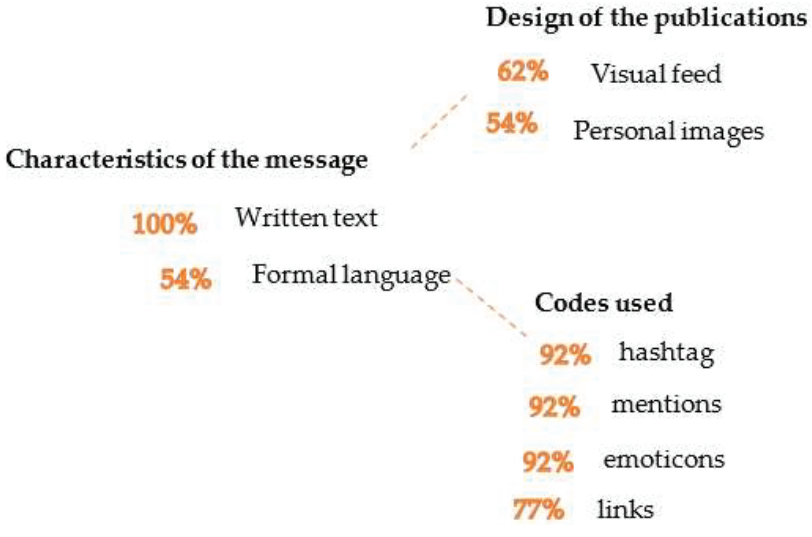

Figure 5. Analysis of publications. Source: own elaboration.

Jointly analyzing the transmedia production of the Instagram accounts involved in this study, allows us to offer a clear vision of the state of the research issue, complementing the data obtained with clear examples of the activities carried out by these influencers in their accounts.

3.2.1. Transmedia Image Production and Creation

The analysis of the images produced or created reveals that 62% of the influencers analyzed have a clear intention to take care of the aesthetics of the images that form part of their feeds, taking care of the quality projected from digital marketing (Figure 5). Some accounts, such as @entrenubesespeciales or @maestradepueblo, make use of a feed based on images with the same type of colour tones and filters, or using standardized frames and letters as part of the composition of the images posted. These types of elements are used as differentiating aspects with which to generate an image of the channel itself, being easily recognizable and pleasant for the audience, as can be seen in Figure 6. The image shows the main board of @entrenubesespeciales, composed of images with clear, clear backgrounds and related to educational resources.

The data on the publication of personal images as part of the content of the accounts is quite divided among the influencers under study. More than half of these accounts (54%) share personal images of the owner, selling his personal life, family members, work environment, etc. Although it should be noted that the production and creation of transmedia with personal images does not tend to be repeated in the media projection of their profile, but has more to do with specific situations in which influencers want to share with their followers highlights of their personal life with a clearly emotional and "hook" purpose, as can be seen in Figure 7.

Figure 6. Example of an esthetic feed. Source: @entrenubesespeciales.

Figure 7. Example of the feed with personal images (@applesandabcs). Source: @applesandabcs.

3.2.2. Hypertextual Transmedia Production and Creation

Analyzing the transmedia hypertext production and creation of the influencers under study, it can be seen that 100% make use of hypertext to support the content of the images uploaded, providing the publication with more information and interest for the audience that consumes it (Figure 5). These hypertexts accompanying posts are often directly related to the image shared. In many of the cases observed, images of resource materials can be found as well as, in their description, a hypertext indicating the steps to create or access

them. Likewise, there is a division in the type of language used (formal and informal), with values very close to 50% in both types of language, between the language used in the educational area and the language used in influencer marketing. There is a tendency for educational influencers to produce and create hypertexts that incite audience participation and interaction, through various formulas: "What do you think?" "Do you know this game?" (@entrenubesespeciales); "Remember to upload it to the wall with the hashtag #tallaresthinksforkids #thinksforkids and tag me so I can share it in stories and make a WORLDWIDE EXHIBITION" (@thinksforkids); Would you like me to do a FREE webinar teaching you how to make 4 board games in Canva? Leave me a comment on the post with your opinion" (@maestrosaudicionyl); as we can see in Figure 8.

Figure 8. Example of the use of text in publications. In this case @thinksforkids interacts with his followers, asking about the content of the channel, and asking for likes on the publication Source: @thinksforkids.

Hypertextual transmedia production and creation projected on social networks have developed new textual codes to generate impact, acting as mechanisms of communication and interaction between users. It is interesting to observe how influencers make use of these codes in their publications to increase the transmedia projection of the published content. Throughout the hypertexts accompanying the productions and creations, we can see the high percentages regarding the use of hashtags, the introduction of mentions of other Instagram accounts and the use of emoticons. These percentages drop when it comes to inserting links in published texts or inviting people to visit other external Instagram pages (77%) (Figure 5). In general, these redirects encourage hyperlinked navigation to the influencer's own blogs or websites where they offer more information about other sales or services they offer to their audience; in this sense, we have observed that 92% of the accounts analyzed have a link to an external Instagram website in the header of their channel.

3.2.3. Economic Purpose of Transmedia Production

Table 6 shows what kind of transmedia production the accounts involved in our research share through their Instagram profile, using an analysis of the textual content of the publications made on their channels, interpreting the type of information that was shared in them between the months of March and July 2020. From the information collected

through a checklist, a categorization was created including the following objectives of publication: material, training, commercial, memes, private life, blog, art, formation, books or educational support.

When analyzing the purpose of the transmedia production that the influencers under study share on their accounts, it can be seen that in most cases they share ideas for material resources so that they can be used in learning contexts by their audiences (@2profesenapuros, @3ways2teach, @applesandabcs, @auladeapoyo, @desdemiaula, @entrenubesespeciales, @maestrosaudiciónyl and @thinksforkids), in some cases introducing a commercial purpose.

Table 6. Influencers' objectives according to the content of their profile.

Influencer	Objective of the Publications
@2profesenapuros	Material/Training/Commercial
@3ways2teach	Material/Memes/Educational Support
@applesandabcs	Material/Private Life
@auladeapoyo	Material
@clubpequeñoslectores	Books/Commercial/Private Life
@desdemiaula	Material/Blog
@educacioilestic	Art
@enticonfio	Formation
@entrenubesespeciales	Material/Books/Commercial
@maestradepueblo	Memes/Commercial
@maestrosaudicionyl	Material/Formation/Commercial
@teachinghumor	Memes/Commercial
@thinksforkids	Material/Educational support/Formation/Commercial

However, analyzing the hypertexts that accompany the production and creation of images, it can be said that some influencers such as @2profesenapuros and @maestrosaudicionyl have a clear intention to generate economic benefits from such materials by selling them on personal web pages, as presented in Figure 9. Other influencers, such as @clubpequeñoslectores or @entrenubesespeciales do not seek to make a direct financial profit by sharing these materials on Instagram, although they do share sweepstakes or discounts on materials and products from other accounts or companies.

Figure 9. Example of publication for economic purposes. In the image @2profesenapuros shares different training programs and materials that are offered to its clients, limited by study places. Source: @2profesenapuros.

In addition to presenting educational materials, some of these accounts offer various educational training possibilities to their users. In the case of @2profesenapuros, they have a business structure through which they offer services for the preparation of competitive teaching exams, using Instagram as a channel for promoting these services. The @enticonfio account is part of a project promoted by the Colombian government to raise awareness and train education professionals in the responsible use of digital technologies at different educational levels, publishing content that gives visibility to the progress of its project and raises awareness of this issue among its audience, as shown in Figure 10.

Outside the perspective of practical approaches to the world of education, other accounts offer transmedia production focused on entertaining users, with themes related to education and children. Photographic art and aesthetic care are two aspects that are closely linked to social networks such as Instagram, following this line we can highlight the account @educacioilestic, whose account is clearly oriented to publications of artistic photographs related to childhood. Finally, other influencers (@teachinghumor and @maestradepueblo) can be observed using their accounts as spaces to share humorous publications about the world of education, using a format that is quite widespread in social networks, such as memes similar to the one shown in Figure 11.

Figure 10. Example of a publication for educational purposes. This image shows the channel @enticconfio sharing with the community the date and online site for a free training session. Source: @enticconfio.

Figure 11. Example of a humorous publication. In this case @maestradepueblo makes a joke about the situation pre-Covid and post-Covid in the educational system. Source: @maestradepueblo.

Taking into account the mercantilist drift affecting Instagram, it is a priority to determine to what extent the influencers studied generate income through their activity on the platform in question. The digital marketing software "Infuencity" allows access to various data on the accounts involved in our study. The total earnings generated by influencers on the Instagram platform are presented by applying a mathematic algorithm developed by said software.

Table 7 shows the average earnings that the educational influencers analyzed obtain through the publications made, which generate mentions, engagements, shares, recommendations, along with other interactions from third parties (other influencers). All of this generates a value of the channel's diffusion, giving rise to the figures shown in the following table. The total value obtained taking into account all the educational influencers studied is EUR 6460.98, with figures that vary greatly from one influencer to another. In this sense, @applesandabcs and @maestradepueblo are the two accounts that offer the best data, EUR 1493.04 and EUR 2205.33, respectively, while @desdemiaula (EUR 14.94) and @enticonfio (EUR 8.54) are the ones with the worst figures, being very insignificant amounts.

Table 7. Average earnings of influencers.

Influencer	Average Earnings
@2profesenapuros	EUR 310.42
@3ways2teach	EUR 44.96
@applesandabcs	EUR 1493.04
@auladeapoyo	EUR 59.76
@clubpequeñoslectores	EUR 167.86
@desdemiaula	EUR 14.94
@educacioilestic	EUR 45.66
@enticonfio	EUR 8.54
@entrenubesespeciales	EUR 434.20
@maestradepueblo	EUR 2205.33
@maestrosaudicionyl	EUR 376.88
@teachinghumor	EUR 608.98
@thinksforkids	EUR 690.41
Average total earnings	EUR 6460.98

These values obtained through Influencity have been calculated through a mathematical algorithm that identifies the quality of user interactions.

4. Discussion

Educational influencers are making great efforts to gain a foothold on Instagram, generating a transmedia production that can be interesting for capturing new audiences, including families and teachers as shown in a recent related study [42]. These communicators differentiate themselves from the rest by designing communication and interaction strategies that are typical of influencer marketing. Their profiles, incorporated in this strategy, offer an attractive first image to audiences, through carefully created profiles, clear hypertext descriptions of the account, hyperlinked navigation, etc. [43].

In terms of audiences, the age ranges that predominate among these new registered audiences are populations between 25 and 45 years old, digitalized generations for whom social networks and digital environments are an essential part of their lives, the so-called millennial generation [44] (+P1); this fully agrees with the intention, detailed previously, that digital marketing follows to enhance the influence on this generation due to its close relationship with these interaction platforms [29]. The prominence of women and their age is significant, as this is a social group that may be involved in teaching or caring for a child, generating interest in the type of content that is shared on these accounts with the aim of improving the quality of teaching inside and outside the classroom, showing greater involvement than male populations and coinciding with the conclusions reached in a recent study by Fernández-Freire, Rodríguez-Ruiz and Martínez-González [45].

The behavior of audiences, through their interactions on Instagram in the COVID-19 pandemic period, makes it possible to know some characteristics of the media impact

that influencers generate through their creations and publications. Most of the accounts analyzed belong to those categorized as microinfluencers, as they have audiences of less than 100,000 followers, covering very specific topics as a strategy to specialize in a very specific audience [46]. The data analyzed reveal that there may be a relationship between the greater number of followers of the channels studied and the number of creations or productions generated by the influencers, following the tendency described by Peters et al. [24]. However, this growth does not occur proportionally among the different influencers, which may be explained by a variable of great importance with respect to social networks, such as the quality of transmedia production, coinciding with the approaches presented by the eCommerce & Digital Transformation Observatory [47]. Following this line, we have seen how the two profiles with the highest number of followers are dedicated to sharing educational material resources as a way of doing business and having an economic return, not with a purely educational and innovative purpose [38]; meanwhile, in third position is a profile focused on sharing comic creations on different aspects of current affairs related to the field of education. From the content analysis, we conclude that most of the profiles studied are focused on sharing material resources rather than other topics [36], with a high proportion of educational influencers using their Instagram profile to generate commercial activities by selling their own services or products or promoting other people's products, taking advantage of the great impact that their publications generate among their audiences (−P2), establishing differences with the results offered by Izquierdo and Gallardo, where a profile of an educational influencer focused on altruistic help to his followers is presented [33].

It should be noted that the data obtained show an audience that interacts more with those accounts whose purpose is to generate transmedia productions related to humor, where the meme format stands out. The high levels of interaction in these profiles is closely related to studies that present memes as outstanding formats due to the high levels of participation they generate and their capacity for vitalization in social networks [48,49]. The most used interaction resource among the audiences analyzed is the Like, consolidating the trend offered in various studies consulted [50,51]. Following the contributions of the Oxford Social Media Dictionary [52] it should be noted that, although the use of the Likes is a relevant element for analyzing the loyalty of new audiences, comments and mentions are the most transcendental communicative elements for producing a higher level of engagement between influencers and followers and, as a consequence, greater economic income from their impact. In this line of research, only the @thinksforkids account shows good levels of engagement, due to its high proportion of comments/likes (+P3).

The transmedia creations and productions shared by the educational influencers in this research show that they are concerned with maintaining a carefully curated and personalized feed, with the intention of consolidating the brand among their followers [25]. This means that, in general, the creations and productions they share have characteristics and styles marked by specific patterns that are recognizable to their audiences. A recent study [53] determines the use of these procedures in globally relevant influencers from other sectors (fashion, sport, celebrities, etc.), and once again highlight the increasingly widespread figure of the educational influencer as an expert and consolidated character in social networks as related studies determine [54]. Although Instagram is known for the great power of visual content, all the accounts analyzed make use of hypertextual descriptions to provide their productions with more information, revealing the importance of generating a digital narrative around the image, as Domenech has already pointed out in previous research [55,56]. In these hypertexts, educational influencers generally include textual elements that help to increase the impact of publications and accounts (hashtags, mentions, tags, emoticons, links to external websites, etc.) [22], fulfilling the dual function of providing information and increasing the impact of transmedia production or Instagram profiles on audiences [57]. Likewise, the use of messages to encourage interaction with new audiences is a fairly widespread practice among the profiles analyzed, in line with recent studies in which similar procedures are observed by influencers to increase participation

among their followers [58,59]. Users who make use of social networks, and in particular Instagram, are exposed to a high level of advertising bombardment, both explicit, with advertisements, and implicit, through the publications made by many influencers who encourage consumption among audiences [60].

5. Conclusions

Instagram is a social network that has one of the most active communities today, where users can find content adapted to all kinds of interests and where influencers look for their niches to spread their productions and transmedia creations. Educational influencers are quite consolidated and adapted to Instagram's own mechanics, with which they generate greater influence among audiences. Educational influencers are characterized by being users who care about the first impression they make on the community, as well as having a consolidated audience led by the millennial generation aged between 25 and 45, where women with an interest in the subject of "motherhood" stand out. The quantity and quality of the content have a significant influence on the growth of the profiles studied, with the use of the like being the preferred option for audiences to interact with the publications. This study has shown how educational influencers are involved in maintaining a careful and striking aesthetic in their channels; it also shows that the use of text in the descriptions is a widespread practice in publications, with communication adapted to the language of the post-digital society and that they implement different formulas to increase participation, interaction and impact on the audience. Despite the fact that the Instagrammers analyzed focus their activity on aspects related to education, it has been observed that digital marketing is becoming increasingly widespread among this type of influencer [61].

Although this study focuses on a fairly limited sample of influencers, it is a starting point for broader analyses in view of the constant increase in this type of profile, both on Instagram and on other social networks with a high social impact such as Facebook, Twitter or TikTok. Educational influencers are becoming new familiar faces and it is important that through their online activity they manage to place education in a relevant position for society as a whole, involving it in the great challenges of the future.

6. Limitations and Future Research

This research provides data of special relevance on the study of the educational influencers, especially during the outbreak period. However, it has certain limitations. The main limitation of this article is the reduced number of Instagram accounts analyzed. This situation has served to achieve concrete results; however, a larger sample would have provided us with a broader vision of the phenomenon of educational influencers.

Secondly, despite the relevance of the selected temporary period, an analysis of the accounts based on a longer time period would provide us with a more complete mapping of the educational influencers' relevance. At this point, future research will be developed, expanding our sample to other accounts (taking into account different nationalities and languages) and including a longer period of time.

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Disinformation and Responsibility in Young People in Spain during the COVID-19 Era

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Abstract: This paper analyzes the main variables that determine the relationship between disinformation and youth responsibility during the latest stage of the COVID-19 pandemic in Spain (from April to June 2021). Are young people keeping well informed during the COVID-19 pandemic in Spain? Are the youth behaving responsibly? This document presents several results regarding these questions. In our introduction, we establish a theoretical framework for the following concepts: disinformation, responsibility, credibility, and youth responsibility variables. Our primary interest is in communication factors. The applied methods are a reference review of the national and international literature surrounding this subject and qualitative opinion research conducted through discussion groups with young university students from private and public communication schools in Madrid. A recent study, held in June 2021, provides valuable material for this paper. The main results and findings are as follows: not being satisfied with the information received about COVID-19; knowledge about the most credible news sources; the connection between information and responsibility; and the solutions that are claimed to more responsible in this context by various youth participants. In conclusion, this paper confirms the first hypothesis of considering disinformation as a variable that causes a lack of personal responsibility among youths in complying with public health expectations. Regarding the second hypothesis, we verify that young people consider communication one of the main solutions for being more responsible. In other words, when presented with more information about COVID-19 they feel more aware of the disease.

Keywords: disinformation; responsibility in young people in Spain; COVID-19; credibility; social effects; communication solutions

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1. Introduction

The COVID-19 pandemic not only affects public health, but it also influences the behavior of young people who have become new victims of this pandemic and vulnerable targets for disinformation. "Social media users have a deficiency in spotting falsehood in specific emotional states and when encountering what is consistent with their values or beliefs disinformation" [1] (p. 7665). Media consumption, access to social media, the immediacy of information, and the sources of information youths use and how they influence their opinions are transformed into irresponsible attitudes towards the disease, resulting in breaches of public health measures imposed by the Spanish government.

COVID-19 has triggered one of the worst streams of disinformation ever experienced. In mid-April 2020, the Coronavirus Fact Alliance database of the Poynter Institute and the International Fact-Checking Network registered 3800 hoaxes related to the coronavirus circulating around the world [2].

Disinformation, on many occasions virilized in group talks on social networks, creates "Hoax messages and rumors on messaging platforms like WhatsApp and Facebook [that] spread like wildfire, and with an increase in smartphone usage, this makes the gullible public treat these false claims as genuine information and accordingly form opinions and

take actions" [3]; disinformation of this nature has negatively influenced public health, creating false information that influences decision making, causes distrust and a lack of compliance with the recommendations made by legislators. As noted, "It is important to differentiate promptly the true epidemic from an epidemic of false claims and potentially harmful actions" [4] that negatively affect the behavior of young people who have been victims of information overexposure, in many cases without scientific evidence, and this has harmed and affected their freedom to move freely, limiting their social life, affecting the economy in Spain, and living with COVID-19 deniers in the face of the pandemic. All this has caused confusion, disbelief, and has negatively affected the behavior of young people: "Fake news has all the more impact because the public likes to believe conspiracy theories. Although disinformation is old, social networks have amplified the phenomenon so much that fake news may have led to tragedies" [5].

The COVID-19 has not only affected public health but also the behavior of some social groups, such as young people. Their new ways of communicating, their opinions about several information sources, and their social interaction needs make them a more vulnerable target, and this needs to be investigated. Young people are not yet vaccinated in Spain and victims of the pandemic are younger than ever. However, their behavior regarding health measures is, in general, irresponsible. Every weekend, most young Spanish people attend street or indoor parties without masks and personal distancing. This paper analyzes the main variables that determine the relationship between disinformation and youth responsibility regarding public health measures.

The research objectives of this paper are as follows: (a) To understand the more credible news sources currently used by young people; (b) to analyze the best sources for young people to be informed about COVID-19; (c) to observe whether they consider themselves well or badly informed regarding COVID-19 information; (d) to research the levels of responsibility exhibited by young people in this pandemic from a a self-knowledge point of view; and (e) to establish the best solutions suggested by young people for being responsible in this pandemic.

The authors identify two hypotheses in this research: (1) If disinformation affects the levels of responsibility in young people, then we attempt to understand the relationship between these two variables, i.e., disinformation and responsibility; and (2) to ascertain whether young people consider communication as a solution to being more responsible in the pandemic.

The connection between disinformation and lack of credibility comes from works by different authors. For instance, Nieves Estévez Delgado [6], in her final bachelor's degree paper (TFG), studied hoaxes and disinformation during the pandemic. She mentioned the creation of *Fact-Checking* initiatives as an institutional solution for searching and neutralizing fake news. These are not the first *Rumor Offices*, as will be explained later. The second relevant paper for this research is one published by Rafael Aleixandre-Benavent, Lourdes Castelló-Cogollos, and Juan-Carlos Valderrama Zurián [7], "Información y Comunicación durante los primeros meses de COVID-19: Infodemia, Desinformación y Papel de los profesionales de la información". These authors focused their study on the different challenges created by this crisis, such as health, economic, political, and social difficulties. Their paper examines the exponential growth of information, the keys to which are dissemination and message veracity. In this context, communication professionals can help to filter out false information using quality resources and the management of scientific information.

The next piece of research was published by one of the authors of this paper, María Elena Mazo Salmerón [8], who analyzed the psychological variables of rumors; this has been her main area of research over the last 20 years. The COVID-19 crisis has generated millions of rumors and pieces of disinformation, but they are not new. A rumor is the best example of an interpersonal and spontaneous message that is, at present, disseminated mostly on social media. It is a peculiar and *insubordinate* type of message. It could be said that, even without an unknown source, it has the role of *being credible*, even as the sender leads, paradoxically, without *credits*. There are a lot of rumor cases throughout

history but, as it has been mentioned before, the first modern *Fact-Checking offices* were created in the USA during World War II—*Rumor Clinics*—in order to neutralize fake news spread by the media. Some years later, Leo Roster [9] directed the O.W.I.—Office War Information—with a new approach: the importance of sender credibility, the quality of information, and the creation of confidence in communication professionals and their media. Another focused are of research related to this work is an article by Mazo, M.E. [10], "Rumor, a metamorphic message creating atypical reactions on the net". Disinformation generated by the spreading of rumors in the digital environment of COVID-19 creates disturbing effects. This verbal process is a metamorphic one, and these kinds of messages are perverse but highly seductive.

Regarding disinformation and responsibility, Piper Lipping Liu's paper [11], "COVID-19 information on social media and preventive behaviors: managing the pandemic through personal responsibility" (2021), outlines the relationship between the consumption of disease information on social media and preventive behaviors, including personal responsibility. He considers that social media provides vital information that might exert a positive influence on people´s preventive behaviors.

Youth responsibility variables are defined in several papers that analyze their environment and motivations. First, Antonia Lozano-Díaz, Juan Sebastián Fernández-Prados, Victoria Figueredo Canosa, and Ana Mª Martinez Martínez [12] presented a study focused on the impact of resilience, online social capital, and life satisfaction among 343 university students. Their main conclusions are that confinement has a strong impact on students, mainly in terms of psychology, and that the important role of the relationship developed between life satisfaction and resilience must be considered. Second, Wendy E. Elis, Tara M. Dumas, and Lindsey M. Forbes [13] state that time spent engaging with family is related to fewer incidents of depression reported by adolescents during the initial COVID-19 crisis. Young people spend their time using social media, with family, friends, and performing physical activities. They spend a lot of time utilizing social media, even more than before the pandemic. Third, E. Power, S. Huges, D. Cotter, and M. Cannon [14] suggest, in "Youth mental health in the time of COVID-19", that the psychosocial effects of COVID-19 disproportionately affect young people. As short-term factors, the authors mention social isolation and the loss of all their structured occupations; as longer-term mechanisms, they state the strong effects of the predicted recession—including mental health—on young people. Finally, Rachel, I. Silliman, and Emily Adlin Bosk [15] analyzed the impact of considering young people as part of the vulnerable public in this pandemic.

Developing on the literature mentioned above, where some main variables are found and discussed, this research attempts to support the confirmation of our two hypotheses as a conclusion: (1) to consider disinformation a fact that provokes a lower level of youth responsibility, and (2) the setting of the general youth opinion that considers communication as a solution to being more responsible.

2. Materials and Methods

The first research material we used in this paper was a reference review of the literature found about this subject. The details are explained in the introduction.

Second, in order to adhere to our research objectives and establish our hypotheses, qualitative opinion research was conducted in seven discussion groups, and focused opinion research was performed among young university students from communication schools in the Madrid community (Spain). Two public universities (Universidad Rey Juan Carlos I and Universidad Complutense de Madrid) and one private one (Universidad CEU San Pablo) were selected as control groups.

The discussion groups were made up of students studying communication degrees from three different universities. The degrees included audiovisual communication, journalism, advertising, and public relations [16–18]; all students had different socioeconomic characteristics but common academic and professional interests. Currently, these young people find all the information they need in digital media, as it is an environment that

allows interaction and information exchange, and it raises a new communicative scenario that breaks with traditional unidirectional communication models [19]. The ZOOM videoconference platform (San Jose, CA, USA) was used to organize the sessions. Each session lasted sixty minutes and was coordinated by the authors of this paper.

The students were presented with four topics for discussion: level of satisfaction among young university students regarding the information they received about COVID-19; knowing the sources that young university students consider most reliable to inform them about COVID-19; the connection between disinformation and a lack of responsibility; and proposals to improve communication tactics to combat disinformation.

This recent study, held in June 2021, provides valuable updated material for this paper.

3. Results

In this chapter, we present the main results of our study. First, the discussion group research will be explained; second, the main findings will be analyzed.

The discussion groups were made up of communication students between the ages of 18 and 25 of both genders. The results obtained correspond to 7 discussion groups with a total of 84 participants. Each session was coordinated by the lecturers who led the research and who were familiar with the four topics that analyzed the main variables determining the relationship between disinformation and youth responsibility.

The main results and findings were as follows: not being satisfied with the information received about COVID-19; knowledge about the most credible news sources; the connection between information and responsibility; and the solutions that are claimed to more responsible in this context by various youth participants. The social decision making of this group included two points of view for analysis: (1) young people's social needs include having relationships with their colleagues, and (2) the communicative frame in which they act daily includes social media.

3.1. Level of Satisfaction among Young University Students with the Information Received about COVID-19

The first question asked to the participants was related to their level of satisfaction with the information received about COVID-19. The fact of them being students studying for communication degrees must be considered, which means that they are more sensitive to the effects of media information. The results showed that a large majority indicated their dissatisfaction with the information received about COVID-19, while a a small minority affirmed their full satisfaction or simply showed indifference. They were asked whether there were any comments they wanted to make, and different reasons were verbalized, most of them revolving around the credibility of the source of the information received. Some participants mentioned that there had been abundant information, but not quite scientific and rigorous enough due to its strangeness and their ignorance of the subject. They questioned the reliability of the information and the lack of guarantee, considering it confusing and not very transparent, and revealed that their most credible sources were those of their relatives against a mistrust of the information offered by their friends and social networks. Here, again, the social decision-making variable reappears. The influence of friends, first, and social media, second, is a constant in youth groups. In Section 3.2 this process is explained.

3.2. Knowing the Sources That Young University Students Consider Most Reliable to Inform Them about COVID-19

In order to establish the vulnerability of young people to the misinformation that the communicative management of the pandemic has generated, and to understand the sources that they look up to stay informed, we have classified sources into three groups:

3.2.1. Official Sources

Young people perceived information received through different institutional organizations dependent on the Government of Spain as reliable. They consider that, at some

points during the pandemic, they have not been very successful, causing certain confusion, although they did not understand the information as fake news. A minority doubted the informative role that official sources had in the construction of media discourse throughout the pandemic. Simplistic messages had a clear ideological orientation that only generated frustration in Spanish society and increased their distrust. For young people in Spain, official information was one more communication source that had to be followed, along with other friends and social media messages.

3.2.2. The Media

A vast majority express confidence in the general media, and some of the main national and international newspapers are cited, such as *El País*, *El Mundo*, and *Diario.es*; these newspapers have a reputation for reliability. Other international newspapers were added, among which the following stand out: *The New York Times*, *The Washington Post*, and the *BBC* television channel. They also mentioned the impact of radio, but they did not identify specific radio stations or programs. The most striking discovery was that television was not pointed out at any moment, and our subjects did not highlight any of the most informative programs that were being broadcast throughout the pandemic, even those with authentic opinion leaders. Again, young people in Spain need to establish their "official" information through the media in conjunction with their own social media accounts and the opinions of their colleagues.

3.2.3. Scientists and Academics of Recognized Prestige

Young university students in Spain lend the greatest credibility to scientist and academics of recognized prestige when it comes to being rigorously informed. The news that comes from health workers, scientists, and academics is therefore guaranteed to be viewed as reliable. In all cases, these were cited as the most reliable sources; however, at no time were any of these professionals named or highlighted, and they are only cited as a collective. It must be taken into account that young people in Spain mostly use social media to obtain messages from scientists.

3.3. Connection between Disinformation and Lack of Responsibility

A clear connection between disinformation and a lack of responsibility in youth in Spain has been found in our results. We identified that young people feel restless about the extensive and inaccurate information coverage around COVID-19, causing confusion, misinformation, and alterations in their behavior that have produced negative effects both individually and socially. Their exposure to false information and the influence it has generates concern, as does the fact that they are often accused of irresponsible behavior. The new communication formats they use (mainly social media) and their need to be socially connected make them more vulnerable to disinformation. More than half of the analyzed group assumes responsibility in this pandemic, but they justify it with reference to their exposure to information and the credibility that they give to the news rather than clearly identifying instances of false reliability. Some of the young people commented that, sometimes, they detected false reliability due to the extravagance of the message or simply because it was massively disseminated on the WhatsApp messaging network (Menlo Park, CA, USA), thus generating mistrust. Most of them associate their irresponsibility in terms of public health (use of masks, personal distancing, etc.) to the misinformation that has existed during the pandemic, and they defend the importance of the credibility of the sender as well as the quality of the information and their trust in communication professionals.

3.4. Proposals to Improve Communication against Misinformation

Another question discussed with the youth groups was their suggestions for improving communication in relation to COVID-19. Our young participants pointed out that the Internet is a channel that amplifies disinformation and makes it spread quickly worldwide.

In this context, young people, called digital natives, are the most affected and they are considered users trained in the use of these technologies. Social media is part of their lives and helps them socialize in new environments. The pandemic has promoted the use of these networks to bring them closer together during moments in which they are most isolated.

They all consider the promotion of awareness as being important. Only then will they have the ability to think critically, to find and correct misinformation, to make rational use of the media and various networks, and to avoid their overexposure to false information. Social networks are becoming the main source of information for an increasing number of people, especially young people, meaning that "disinformation seems to have found a new channel for them."

4. Discussion and Conclusions

After analyzing the results of this research, it is disturbing to observe the degree of dissatisfaction that young people indicate regarding the information that has been generated during the COVID-19 pandemic in Spain (from April to June 2021). The complexity of the pandemic, its origin, evolution, and the impact it has, exponentially multiplied the information with the same proportionality in which the story of disinformation and its spread was constructed [20].

It is true that there has been an overload of information willfully used on numerous occasions. False messages in a major health crisis such as this are influencing people's behavior, which can alter the effectiveness of measures taken by a government (about mask use, personal space, washing of hands, prohibition of parties, etc.) [21], posing a serious health risk. Its virilization is dangerous in a digital society that is interconnected by social networks. It is disconcerting to know that young people distrust and question the credibility of information sources and the lack of quality that the messages have, considering them confusing and not transparent [22]. In this way, young people confirm their dissatisfaction because they express feeling misinformed.

The vulnerability that young people suffer from in relation to disinformation guides an important stage of this work, as knowing the sources they trust and establishing how to stay informed are essential. It should be noted that the participants are students who are majoring in communication studies, so they grant greater credibility to all the information that comes from academics and scientists—their main reference group when it comes to rigorously informing themselves. This selected group is the one that guarantees the greatest reliability in the face of the mistrust they feel towards official sources, such as the Spanish government. This suspicion by citizens, and by extension young people, towards institutions and their failure to manage the pandemic poses a new scenario. We found that this crisis has compounded the problem of misinformation; in this new media and political ecosystem, institutions can lose power and citizens can feel disoriented.

All the results of the research that have been used in the field stage of this qualitative investigation confirm the importance of social networks for the participants, as well as their need to be socially connected. In fact, this social variable explains the relationship between youth media exposure and the perceived credibility of different news sources. This new digital society, where everything goes viral, creates a new phenomenon, namely the immediacy of sharing information; this environment has acquired a new dimension that makes young people participants in both social and political decision making [23]. In this way, young people assume their responsibility in the face of the pandemic and justify it in relation to their exposure to existing information and the credibility that they give to the news, rather than identifying reliability or contrasting the credibility of the sender or the quality of the information. This worrying phenomenon is already being addressed by the European Commission [24], which has created work lines to fight rumors and disinformation.

Regarding the proposals to improve communication in the face of misinformation, students consider themselves capable of using technologies and managing social networks.

They believe that it is vital to develop better and clearer messages in the face of the restrictions that have prevailed during the COVID-19 era (confinement, closure of commercial centers and educational centers, mask use, personal distancing in public areas, etc.). They feel they are victims of a system that takes away their rights (regarding social relationships) and does not train them in critical and social thinking to make them better citizens.

Social networks are the main source of information that young people use, and in the face of this new reality, they suggest some interesting solutions: to manage information properly, to promote clear and reliable communication and, by far, the best solution given by young people is raising awareness regarding the specific public health measures for COVID-19.

Finally, this paper confirms disinformation as a variable that has affected the lack of youth responsibility in Spain during the COVID pandemic, and we have shown that young people consider communication as one of the best solutions for being more responsible.

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Spanish Fact-Checking Services: An Approach to Their Business Models

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Abstract: The proliferation of fact-checking services is a fast-growing global phenomenon, especially in Western countries. These services are the response of journalism to disinformation, that has transformed a common internal procedure of journalistic work in the core of a business directed to the general public, also offered to the companies of mass media and social media. Literature review shows that the research on fact-checking has focused on the origin, funding, relationship with the media, procedures, and experiences related to politics and COVID-19. However, the ownership structure of the fact-checking services has been superficially analysed and the business model of these platforms has not yet been studied in detail and depth. The objective of this article is to identify and analyse the business model of the nine Spanish active fact-checking services through a documentary research of public information sources and the information that these services give about themselves. This paper explains their ownership structure and income provenance, from open information sources. The findings are that the fact-checking services that depend on media groups are no strangers to the trend of opacity usual in these groups, but in the case of fact-checking services that are born as initiatives of journalists, the trend towards transparency is, in the majority of cases, clear. However, the information provided by the Spanish fact-checking services is deficient and does not allow us to discover their business models, except in the case of *Newtral* and, to a certain extent, *Maldita*.

Keywords: fact-checking services; fake news; business model; business key elements; Spain

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1. Introduction

1.1. Context: The Proliferation of Fact-Checking Services

The media participate in shaping the public opinion by means of selecting the facts that they report, the concealment of the reality that they do not report, the approach and the framework of interpretation with which they present the information, and the publication of opinions, deliberately biased or not, on the subjects discussed. The participation of social networks in the processes of creation and dissemination of information has broadened the spectrum of matters reported on, and has facilitated the expression of a greater plurality of opinions. In an ecosystem of social communication where citizens produce, select and disseminate information [1], users can no longer be considered simple recipients, but also consumers and creators, what the referent of the educommunication Jean Cloutier called *emirecs* [2] and visionary sociologist Alvin Toffler *prosumers* [3].

However, this new communication scenario has also led to the dissemination of fake news or information difficult to confirm, under the guise of truth. Fake news is false information which has no basis on true facts and can be refuted through very basic verification mechanisms [4]. It is based on the public trust in the emission source, which is usually the media or has the appearance of being a solid source of information [5]. The fast spread of news through shocking and sensationalist headlines, which act as clickbait, aims

to obtain a quick income from advertising, discrediting people, political parties, companies, or institutions and instilling ideas in society through the use of primary emotions. A significant part of the information disseminated through social networks has been produced without respecting professional procedures or the ethical principles of journalism, among others: the responsibility for accurateness, the verification of information before its release, the contrast and protection of sources, the attribution of origin to the information, the provision of a context of interpretation, the avoidance of stereotyping, and the objectivity in the treatment of the facts [6]. Fake news is produced and disseminated by social, economic, and political agents, generally under the cover of real or fictitious third parties, to create a favourable public opinion to their interests, through the use of disinformation techniques.

In response to the challenges posed to journalism by this new reality, some media corporations and journalists, on their own initiative, have created services to verify the information published on the Internet, due to the mistrust that is produced in the institutions [7,8]. The proliferation of fact-checking services is a fast-growing global phenomenon, especially in Western countries. Their number has increased exponentially since the creation of FactChek.org (USA) in December 2003, launched by The Annenberg Public Policy Center of the University of Pennsylvania, to verify what is said by major US political media players. The directory of global fact-checking sites maintained by the Reporters' Lab at Duke University collected 341 active sites and 112 inactive sites in June 2021, of which 95 are active in European countries and six in Spain [9]. The fact-checking services were 237 in 2020, an increase of 26% compared to 2019 [10]. Simultaneously, with these new companies, a new professional profile has also appeared—the fact-checkers, experts on data journalism, or big data, who perform three different functions: reporters, activists, and experts [11].

At the same time, the main digital content distribution platforms and companies (Facebook, Google, LinkedIn, Microsoft, Reddit, Twitter, and YouTube) signed "a vague joint statement announcing new, combined efforts on fighting COVID-19 misinformation and elevating authoritative content" [12]. Therefore, some of the main fact-checking services not only publish their verifications on their websites and social media profiles but are also hired by the biggest technology companies to monitor the information posted on social media by the users [13].

Fact-checking services not only seek to indicate whether the news is true or false but also to show their work as an effort for journalism to continue to be a prominent actor in the construction of public opinion and to fulfil its social function of strengthening democracy and public liberties. However, in a way, these platforms also aim to maintain the monopoly of the media in the creation of information and, therefore, guarantee the viability of the media business. The public is losing its trust in the traditional media industry due to, among other factors, the effects of disinformation [14]. For instance, the results of Gallup polling show a significant drop in the trust that younger and older North Americans have in mass media. American's trust in mass media has dropped from 53% in 1998 to 40% in 2020 [15]. In Spain, the situation is similar. According to the Digital News Report, 34% of Spanish Internet users trusted the mass media in 2015. In 2021, this percentage increased to 36%. However, since the beginning of the Digital News Report survey, it has not risen above 51%, being lower than that of North Americans [16]. The traditional media industry has been in crisis and transformation for years due to the impact of disruptive innovations linked to the digitalisation of social communication. It must respond to this new disruption of the information ecosystem to restore confidence in the sector [17] and, therefore, recover customers. In a context of mistrust, the audience demands to the media more transparency and credibility concerning the information sources, journalist procedures, data analysis software, and interests of third parties, that is, concerning the verification mechanisms in their newsrooms. The confluence of these elements helps us to understand why the verification of information has gone from being a common internal procedure exclusive of journalistic work, to becoming the basis of a business directed to the general public and offered to the companies of mass media and social media. In fact, disinformation is also

perceived by some media executives as an opportunity for their business because one of the core competences of journalism is the expertise in the verification of information [18]. Some fact-checking services even offer quality seals to news published by the media.

However, fact-checking services cannot guarantee full confidence in the objectivity of their products. One of the main techniques used by fact-checking platforms is the process of automation of data verification using software developed from the previous "triangulation of the work of fact-checkers, programming companies and researchers in artificial intelligence" [19]. Technology companies defend the aseptic and objective nature of these low-cost and easy-to-implement tools, based on automatic procedures and the development of algorithms. Recently, it has been estimated that artificial intelligence tools for the detection of fake news can achieve a 90% success rate [20], but since the creators of these tools configure and program their operation, the ideological bias that they imprint on the selection of sources can condition the results and build inaccurate images [21], due to the well-known problem of selective exposure [22]. As an example, in the absence of an explicit selection criteria, fact-checkers with certain political ideas might select political actors or statements that ratify their own confirmation bias to make them either more credible or more questionable. Furthermore, fact-checkers might pick a certain part of a statement out of context, or combine several claims from a larger statement to obscure its significance and intention [21]. On the other side, people tend to remember information or how that information made them feel, but not the context within they read or watched it. Besides, they tend to accept familiar information as true. Therefore, it is a risk that an individual accepts a piece of false information as true, even in a fact-checking context [22].

It has been denounced that the corrections of information published and the notes by the fact-checking services may be ineffective, and even many of their results may be considered non-neutral [23]. Some of the most popular fact-checking services in the United States and Spain have been accused of "being unfair and biased" [24]. In many cases, these accusations are related to the business links that some platforms maintain with the media, whose influence is manifested in three fundamental aspects: the sharing of the same professionals, the selection of certain content to verify and no other, and the submission to the editorial line of the reference medium or to the ideology of the business group to which the medium belongs. All of this generates in users the perception of a lack of impartiality regarding the work carried out by fact-checking services linked to corporations. For this reason, it has been proposed to improve "the consistency in how different fact-checkers choose and evaluate political claims" because only by preventing political lying, regardless of its origin, fact-checkers will fulfil their "democratically ideal role of the political watchdog" [25].

1.2. Literature Review

There has been a higher amount of academic literature about fact-checking in the past five years, encouraged by the expansion of these services. This issue has been treated from different perspectives: mainly, how the media and information agencies have incorporated verification techniques [8,26–29], the commitment of verification to journalistic quality, and the fight against disinformation [11,30], the analysis of the verification of fake news in the field of politics [5,31,32], and the combating of COVID-19 fake news through fact-checking [33–37]. In the case of Spain, studies have mainly focused on the analysis of the work procedures followed by the verification platforms associated with the communication or independent media that have emerged in recent years [13,38–40].

Fact-checking has also been studied beyond journalism, specifically its influence on the evaluation of political messages [41], and its effectiveness correcting political misinformation, which has already been the subject of a meta-analysis [42] and a review analysis [43] focused on the US context. The application of professional fact-checking tools and procedures in media literacy in schools is another area of interest [44,45].

The discussion of the validity of existing studies on fact-checking and their present limitations has been the aim of a recent review [46] that complements most of the literature reviews on fake news [47–50].

Literature has also paid attention to identifying the various initiatives that have led to the creation of fact-checking platforms and the analysis of the advantages and disadvantages of the different financial means. In the first Global Fact-Checking Summit, held in London in June 2014, five types were identified among the participants: funded by one or more media, by a donor organisation, by a university, by its users' community or individual donors, and by selling corporate social responsibility services [51].

All these types of initiatives have been reduced to two models [11]: the newsroom model, the most frequent [52], where the service is led by professionals and it is integrated as a section of a traditional media or takes the form of an autonomous organisation linked to companies grouping different media, and the NGO model, led by alternative and non-profit platforms. The fact-checking companies that belong to the first model have resources and media support, but at the same time, they are conditioned by the editorial line of the medium. Those of the second model do not receive pressure from publishers, but their resources are scarcer and depend on the contributions of academic institutions and foundations or entities that promote democratic development, with a significant presence in Eastern Europe and Latin America [38]. Within this second model, independent projects have emerged in recent years by the joint initiative of journalists, programmers, translators, and even users of social media financed through crowdsourcing, who collaboratively decide whether or not to give credibility to dubious content, such as, for example, the fact-check tag of Google News. In general, the media and social media projection of some journalists and some managers increases thanks to their personal brands and the popularity of these platforms, generating additional income.

Fact-checking services have been grouped in the case of Spain into three categories, in accordance with the typology proposed by Graves [52]: those promoted by the civil society, those linked to the media, and the autonomous journalistic websites [13]. Other authors have rated these platforms according to company ownership with four tags: "independent", "groups", "media", or "institutions" [53]. In general, active Spanish fact-checking services can be classified into two similar groups according to the origin of their resources: financially dependent or independent on the media or financed by civil and voluntary organisations [38]. It has been pointed out that the latter kind is far from the industrial model with shareholders, common in large communication groups, thus highlighting the entrepreneurial nature of the journalists who promote them [54]. However, the origin of funding sources is often more complex and so no clear borderline can be established. For example, the income of the *Maldita* platform (*Maldito Bulo* and *Maldita Hemeroteca*, among others) comes mainly from three sources: advertising, donations from its community of followers, and selling of commissioned work to communication media such as La Sexta, eldiario.es., and Rac1 [54].

In conclusion, research on fact-checking has focused on the origin, funding, relationship with the media, procedures, and experiences related to politics and COVID-19. However, the ownership structure of the fact-checking services has been superficially analysed and the business model of these platforms has not yet been studied in detail and depth.

1.3. Theoretical Background: The Business Models

A business model is a conceptual proposition, rather than financial, that defines "the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts those payments to profit" [55]. There are multiple business model possibilities, depending on how their elements are structured and related and how the business adapts to the customer's needs and the business environment.

Timmers, one of the first business model theorists, considered that a model included three key elements: the description of the product architecture, the specification of the

different actors involved in the business and their roles, and the definition of the sources of revenues [56]. Chesbrough and Rosenbloom highlighted the value proposition (the description of the benefits that customers can expect from a product or service) as the fundamental elements of a business model, which were accompanied by others that allowed its deployments, such as the identification of a market segment, the definition of the structure of the value chain, the estimation of costs and benefits, the position of the company in the value network, and the formulation of its competitive strategy [57].

Osterwalder, Pigneur, and Tucci, in an already classic article, identified nine elements in a business model from the study of the main reference works in the subject: value proposition (price, novelty, quality, convenience, status, performance, personalisation), target customer (clients and organisations for whom value is created, market opportunity), distribution channel (delivery and marketing), customer relationship (dynamics, brand, and reputation), value configuration (production mode and activities required to good performance and to generate income), capability (core competencies, resources, strategic assets, and infrastructure), partnership (actors that help support the business model), cost structure and revenue model (pricing structure and revenue sources) [58].

The study of the business models of the fact-checking services must be carried out taking into account the ecosystem to which they belong: that of the digital media. Cook and Sirkkunen warned a few years ago that the media should take into account the foreseeable predominance of digital reality when developing their business models [59], which has caused a profound reorganisation of work in the media [60]. Accordingly, most of the verification proposals have been developed within so-called entrepreneurial journalism [61], characterised by the primacy of the digital sphere and the use of the journalist's personal brand as a means of promotion [62]. As they are innovative projects of a digital nature, they use more flexible, permeable, and dynamic models, which have the capacity to adapt to change faster [54].

Digital journalistic companies have experienced different income models [63]: the advertising model, the subscription or payment-for-content model, the mixed model (free and extra paid content are offered), or the e-commerce model (the advertiser offers a commission to the medium based on the clickbait). Carvajal [64] has identified six business models for journalism in the age of platforms: the platform model, based on the design of technological engineering that facilitates discovery, content creation, and community interaction, such as Snapchat or Reddit; the native distributed journalism model, which generates adaptable and integrated content for each platform, network, and distribution channel, as in the case of Reported.ly; the curation model, where revenue comes from the use of sponsorship in newsletters, such as Techmeme; the viral model, which detects trends and responds quickly to edit viral content, such as cases of Buzzfeed or Verne; the focused model, based on journalism with its own agenda, with its own editors and columnists, such as *El Confidencial* or *elDiario.es*; and the global model, which is a combination of the above, such as *Financial Times*. These models are not exclusive or incompatible, which makes it difficult to detect a stable business model. The post-digital ecosystem favours hybridisation and has fostered a mixed journalistic business model, based on journalistic entrepreneurship, which tries to optimise technology (as in the case of the exploitation of the algorithms of verification), does not renounce the creation of its own content [54] and seeks the diversification of income sources.

The fact-checking platforms are digital native media [65], so they are conditioned by the same variables than the rest of the digital media with the aim to generate revenue and benefits sustainably. Therefore, the business models of fact-checking services focus on "horizontality, participation, and compromise", and the structures and human resources must be able "to adapt to a constantly changing environment", that promotes a confluence and a renovation of the relationship of "journalism, alternate media and activism" [66]. The nine elements of a business model proposed by Osterwalder, Pigneur, and Tucci [58] have been used to analyse the characteristics and specificities of the business model of 14 Ibero-American digital native news media [66].

The study of the business models of the verification companies must also take into account that their activity takes place within a sector dominated by large technology corporations. Half of the twenty companies with the highest stock market value are engaged in activities related to information technology, telecommunications equipment consultancy, television services, video platforms, etc. [67]. Companies such as Microsoft, Amazon, Apple, Alphabet, or Facebook have achieved the top positions in the ranking of communication groups in market capitalisation in just a decade, beating companies that dominated the communication business for decades, such as News Corp. or Time Warner. They are very powerful companies in full expansion, which have also displaced corporations that dominate other traditionally thriving industries such as oil, electricity, or automotive from the top positions [68]. To these must be added the presence of investment funds: the top ten shareholders of the five most powerful companies are 17 investment funds that, in turn, exchange shareholders among themselves [66].

This network of economic and financial interests has woven a media web since the beginning of the 21st century [69], dominated by mega-companies that are in the shareholding of all kinds of productive and economic sectors, and at the same time in the communication and information sector [70], and that have a complex global business structure that makes it difficult to discover their links and control their operations. In this sense, the division of Google into several groups, under the name Alphabet, is a consequence of the pressure from investors who want to see and distinguish the different activities of Google according to their present and future profitability [71]. Large technology corporations are at the same time one of the main clients of the verification platforms and own several of them, which, added to their great financial capacity and their position as oligopolies in the business of social networks, determine that their hiring decisions can be decisive both for the success of a company and for changing the ecosystem of fact-checking.

1.4. Objective and Research Questions

In this context, the objective of this article is to identify and analyse the business model of the Spanish active fact-checking services. This research is a relevant case of study because in Spain, we find the two main classes of platforms according to their origin—those integrated into the media and those promoted by groups of entrepreneurial journalists—and at the same time, they offer their products to the three main types of clients: communication companies, social media corporations, and the general public.

The research allows us to validate the following propositions:

Proposition 1. *The fact-checking services are transparent to citizens about their ownership structure and business models.*

Proposition 2. *The information that they give about themselves is in accordance with the values and principles that govern their work, as they declare about themselves.*

The paper is structured as follows: identification of a relevant research problem from a review of literature focused on fact-checking services (Section 1), description of methodology (Section 2), presentation of the findings of the business model of the Spanish platforms to verify news and information on social media (Section 3), and, finally, discussion of the results and deduction of major conclusions (Section 4).

2. Materials and Methods

A desk research has been carried out considering two types of sources: one, the information that fact-checking services offer about themselves on their webpages, social media and statements to the media; two, the information that can be obtained about them through open business information sources. The method and materials selected are consistent with the research questions proposed. For this reason, the idea of conducting interviews with owners and managers has been rejected, as they could have biased the

investigation and so would not have contributed to discovering the public transparency of the Spanish verification companies.

The directory of fact-checking services maintained by Duke Reporters' Lab [9] collects six active services in Spain in June 2021, as indicated above: *EFE Verifica*, fact-checks published by the Spanish news service *Agencia EFE*; *AFP Factual*, a section of the Madrid bureau of the *Agence France-Presse* news service; Maldita.es, a non-profit journalism organisation; *El Objetivo*, a TV programme affiliated with *La Sexta*, a commercial TV network owned by *Atresmedia*; *Newtral*, a start-up owned by the journalist Ana Pastor, that produces other media content, including *La Sexta's El Objetivo*; *Verificat*, an independent, non-profit journalistic acting in Catalonia, and *Poletika.org*, created by a coalition of NGOs such as Oxfam, Greenpeace or Save the Children, Spanish activist groups and the political think-tank Political watch. For this study, it has been decided to join *Newtral* and *El Objetivo* because Newtral currently produces the contents of the latter and the first was born from the team and the experience of *El Objetivo*. *Poletika.org* has been excluded because its focus is not currently on checking news, but on monitoring compliance by political parties with the promises made in their campaigns and electoral programs and on the promotion of social proposals.

Other four fact-checking services, identified through an Internet research conducted in May 2021, have been added to the final list: *Malaprensa*, an independent blog by a university professor; *Hechos*, a blog of the newspaper *El País*; *B de Bulo*, a section of the newspaper *Diario Sur* of Malaga; and *Bendita.eu*, an independent Twitter platform. The final sample of nine active Spanish fact-checking services is listed in Table 1.

Table 1. Active Spanish fact-checking services in May 2021. Source: own illustration.

Name	Foundation Year	Website *	Twitter
Malaprensa	2004	www.malaprensa.com/	@malaprensa
El Objetivo/Newtral	2013/18	newtral.es/	@Newtral
Hechos (El País)	2017	elpais.com/agr/hechos/a	@el_pais
B de Bulo (Diario Sur)	2017	www.diariosur.es/temas/generales/b-de-bulo.html	@DiarioSUR
AFP Factual	2017	factual.afp.com/afp-espana	@AfpFactual
EFE Verifica	2019	verifica.efe.com/	@EFEnoticias
Maldita	2018	maldita.es/	@maldita
Verificat	2019	www.verificat.cat/	@veri_fi_cat
Bendita.eu	2019	-	@Benditapuntoeu

* all websites were accessed on 3 May 2021.

Spanish companies are required by the Commercial Code to register in the Mercantile Registry, which contains their main legal acts, published in the BORME (Official Gazette of the Mercantile Registry of Spain) for public knowledge. Companies are also required to present their annual accounts in the Mercantile Registry and to publish their annual accounts, except for individual entrepreneurs who do not have employees under their charge. The deadline for submitting the accounts, something that must be completed in the six months following the closure of the financial year, is one month after they are approved. The SABI (Iberian Balance Analysis System) database created by Bureau Van Dijk and maintained together with the INFORMA company collects the financial information of 2.7 million Spanish and Portuguese companies, of which 600,000 are inactive, and in the past 25 years, it has collected information from 1.9 million accounts, together with business and company news and information on executives, administrators, and shareholders [72]. Access is free for subscribers.

SABI has been used as the first and main source of information. However, there is only information from *Newtral*, corresponding to the years 2018 and 2019, and from the companies *Ediciones El País SL* and *Prensa Malagueña*, editor of *Diario Sur*, and from the news agency EFE, but without disaggregated information for the news verification sections. This scarcity or absence of information in official sources has made necessary to mainly

call upon the information that the verification platforms provide themselves, which is also not exhaustive.

3. Results

3.1. Malaprensa

Malaprensa is the first project that offers a fact-checking service in Spain, founded in 2004 by Josu Mezo Arancibia, a university professor of Political Sciences at the Autonomous University of Madrid who is now enrolled at the University of Castilla-La Mancha in Toledo [73]. Currently, Josu Mezo is also a professor at the Master in Investigative Journalism, New Narratives, Data, Fact-checking and Transparency, founded in 2021 by Maldita.es and the Rey Juan Carlos University.

The platform *Malaprensa* is directly inspired by FactChek.org (USA): its main concern is to put the focus on the bad practices of the media, and its main objective is to monitor the political information published by the leading Spanish newspapers. The selection of news is based on Mezo's own personal interest, and his verifications are published irregularly as blog posts and tweets [74]. Mezo does not have an established selection criterion, but he rarely posts about local newspapers, since he believes that their lack of resources would make it unfair [13]. Although *Malaprensa* dedicates part of its contents to disprove fake news, its mission is broader: it denounces problems and ethical conflicts in the media's coverage of news events. Because of this, it won the 2014 Bitácoras award for the best journalism blog in Spanish.

Malaprensa is an independent project that is not linked to any institution and does not receive any external funding, not even in the form of advertising. In fact, Josu Mezo has declared that he did not create the blog as a professional or business project, but because he is a citizen concerned about the low quality of the media. He has also rejected offers of collaboration from media such as *El País*, keeping his independence [13].

3.2. Newtral—El Objetivo

Newtral is a media start-up launched in 2018 by the journalist Ana Pastor, who is the only shareholder, as an outcome of her experience in a section called "Pruebas de verificación", within the magazine *El Objetivo* of *La Sexta TV*. This section was devoted to the verification of news and conducted by the journalist since 2013 [75]. *Newtral* is an audiovisual content production that also offers fact-checking services. Its four main business areas are the production of television programs, new narratives on social media, journalism innovation through fact-checking services, and artificial intelligence protocols research.

Newtral is the only Spanish verification service that is a company; it is not integrated into a large publishing group and does not adopt the form of an association. Newtral is politically independent and generates revenue with its production services for communication groups, social networks and other platforms. The main clients of *Newtral* are media groups and social media companies. Its first client is the Atresmedia group, whose main shareholders are Grupo Planeta, a Spanish publishing and media group, and the German communication giant UFA/RTL (Bertelsmann). Atresmedia also counts with several investment funds, and a quarter of its capital is in the stock market. Facebook is another main client of *Newtral*. It is in charge of verifying the information that circulates in user accounts in Spain. The diversification of clients is one of the strategic objectives that *Newtral* declares in its website: there were 11 during the year 2019 and 15 in the first semester of 2020. A new incorporation in 2020 was their collaboration with TikTok. They advise the company on how users should be involved in reducing misinformation and the disclosure of unverified content. Furthermore, in December 2020, they launched their first master's degree in Digital Verification, Fact-Checking and Data Journalism with the San Pablo CEU University [76].

Newtral publishes on its website the name, photography, profession (journalists, computer engineers, analysts, documentalists, graphic artists, television producers . . .) and

the Twitter account of its 83 employees, of which 55 have a permanent contract. The staff costs were 58% of the total in 2019 [76].

Newtral complies with commercial law and has submitted the accounts of 2019 to the Mercantile Registry. As an exercise of transparency, it has published in advance on its website a summary of the most important accountable data of 2019 and 2020. *Newtral* has increased its revenues by 15% in 2019 compared to the previous year, reaching the figure of EUR 4.4 million with a profit before tax of EUR 217 thousand, 4.9% of revenues.

3.3. Hechos—El País

Hechos is a blog of the newspaper *El País,* created in March 2021 after the closure of its fact-checking service *Tragabulos*, founded in 2017 [77]. It is coordinated by the journalist Patricia R. Blanco. *Hechos* has an active e-mail address (hechos@elpais.es) so that readers can participate in the work of counteracting the effect of disinformation and fake news, sending suggestions about news items that they suspect are not entirely true. This reveals a certain conception of verification as a shared process built with the user. Citizen collaboration is also necessary given that the journalists in charge of verification on this blog cannot address the totality of what is published in the Spanish media. This collaboration is part of its business model.

El País belongs to the media group PRISA, which is the largest media conglomerate in Spain and Latin America. PRISA owns radio stations, several newspapers and magazines, an educational publisher, and also has certain presence on television through Media Capital, a Portuguese division [78]. The main investor in PRISA is the US investment fund Amber Capital, followed by the Canadian group Vivendi (Groupe Canal Plus, Universal Music Group . . .) and Telefónica. Rucandio S.A, the holding company owned by the Polanco family, former Spanish textbook editor and founder of PRISA, maintains a small part of the property [79]. Other shareholders are the Mexican real estate group Carso (property of Carlos Slim), the Mexican business group of Roberto Alcántara [80], some banks (Banco Santander, Caixa Bank and HSBC), the British inversion funds and the International Media Group (Aljazeera, Dubai Media INC . . .) [78].

3.4. B de Bulos—Diario Sur

B de Bulo is a section of the newspaper *Diario Sur*, edited by *Prensa Malagueña.* Its printed version is *Sur*, which was founded in 1937, and it is one of the main newspapers in Andalusia in number of readers [81]. *Sur* is owned by the Spanish media group Vocento, which also owns the newspapers ABC, *El Correo*, *El Diario Vasco*, *El Comercio*, and *Diario de Castilla*, and hold shares in television (Net TV) and radio (COPE), as well. An important part of the stock actions of Vocento is distributed among several Spanish business families: Ybarra, Urrutia, Luca de Tena, Bergareche, Aguirre, and Castellanos. These families also participate in companies from very diverse economic strategic sectors (finances, construction, telephony and fuels: Más Móvil, Bankia, Unicaja, Repsol, Agroman or Cepsa). Banco Santander and the Norwegian bank Norges Bank also stand out among the shareholders [82].

Since it is a local media, its resources and scope of action are limited. For this reason, this media outlet uses messaging applications outside its property such as WhatsApp or Telegram to receive possible hoaxes that serve as stimulus for the journalists' work. These applications have become a new and faster source of information, and are very effective channels to connect with the public [83].

3.5. AFP Factual

AFP Factual was launched by the delegation of *Agence France-Presse* in Spain in June 2018, with journalists in Colombia and Mexico. This fact-checking service is a continuation of the project CrossCheck, which was founded during the French election in 2017. Its selection criteria vary depending on the editorial interest, the importance of the information in the public debate, or its dissemination [81]. All the journalists are supervised beforehand

by the chief editor and the director of each delegation. Each verification is edited by at least two members of the team [84].

Agence France-Presse is part of Facebook's global "fact-checking" program. With this verification programme launched in 2016, Facebook pays journalists from different mass media to verify dubious information shared through this social network. At this moment, it also has fact-checkers in several languages in more than 30 countries, including Argentina, Brazil, Chile, Colombia, México, Uruguay, and Spain. The editorial team also oversees the Brazilian fact-checking blog *Checamos*, and the Catalan one *Comprovem*, launched in September 2019 [84].

Agence France-Presse does not have a shareholder structure: its income arises from selling its information services to the media and institutions, mainly to the French State. In fact, the French Republic has a presence on the agency's board of directors. This is an issue that has raised concerns in Brussels about the independence of the agency [85].

3.6. EFE Verifica

EFE Verifica was launched in 2019 as the verification service of the Spanish news agency EFE. As its website states, they respect "the good practices and deontological principles that guide EFE Agency journalists, in accordance with its Editorial Statute and its vocation of public service" [86]. The professional team is made up of four specialised journalists in Madrid and Bogotá, although it draws on contributions from the international network of EFE agency correspondents [86]. The journalist Desirée García is responsible for this verification service. EFE's verification service has been part of the Facebook's external data verification programme in Spain since May 2020 [87]. According to the agency itself, this paid agreement with the social network Facebook "has no impact on the selection of content or editorial decisions".

EFE Verifica is part of the activity of the *EFE Agency*, a state trading company whose sole shareholder is the State Industrial Participation Society [SEPI], attached to the Ministry of Treasury. *EFE Agency* is a multimedia information company that distributes close to three million news items per year around the world. It is the first news agency in Spain and the fourth in the world, and its president is José Antonio Vera Gil [88]. The *EFE Verifica* team is financed from the general budget of the *EFE Agency*. The agency's income comes mostly from information services provided to the State, as well as from the sale of services to clients. In fact, almost 50% of the income of EFE depends on Spanish public entities [89].

3.7. Maldita

Maldita is a fact-checking service founded by independent journalists in 2018 that focuses on disinformation and transparency. The website has different thematic sections, named with a wordplay of the noun of the theme followed by the adjective *Maldita*, and devoted to hoaxes (*Maldito Bulo*), documented flip-flops and political promises (*Maldita Hemeroteca*), health and science (*Maldita Ciencia*), data journalism and open government (*Maldito Dato*), technology (*Maldita Tecnología*), gender (*Maldito Feminismo*), and migration (*Maldita Migración*) [90].

The website maldita.es operates through the *Maldita Association* against disinformation, journalism, education, research, and data in new formats, with CIF G88206487 and headquarters in Madrid and the *Fundación maldita.es* against disinformation: journalism education, research and data in new formats, with CIF G88519038 and identical headquarters as the Association. Both the association and the foundation are non-profit entities. The website maldita.es includes links to the page es.scribd.com, where, after subscribing, it is possible to download both the statutes of the association and the foundation and the annual accounts for the years 2018 and 2019 [91].

In accordance with the association's statutes, the financial resources provided for the development of its purposes and activities are the following: membership fees, periodic or extraordinary; grants, bequests or inheritances received from associates or third parties; and any other "legal resource". As for the foundation, it has two lifetime trustees, Julia

Montes Moreno and Clara Jiménez Cruz. Resources of the foundation are considered income and products of any kind produced by the assets that belong to it; donations, inheritances or bequests; grants or donations of any kind; amounts charged for services rendered as a result of their activities; and any other income received from any title.

Regarding the economic-financial documents, only the Profit and Loss Account for the 2018 financial year is available, and for 2019, there is a Balance Sheet and a Profit and Loss Account. The website provides information on the status of the year 2020 up to December 2020 in percentage terms by categories, but without providing absolute data. The website mentions that in the latter case, it is a budget estimate that is being updated, and that the accounts will be published when they are approved and submitted to the Mercantile Registry. As *Maldita* is a recent initiative, an analysis of the historical evolution of the company's financial statements is not pertinent.

Among its main sources of income, *Maldita* boasts of having more than 40,000 associates, who can subscribe without making a contribution or choose between rates that range from EUR 30 to 50 per year, and of which the associate receives a deduction of 80% in the IRPF (Income Tax on Natural Persons). *Maldita* also receives income from collaborations in the national media, mainly on the radio (Onda Cero, RNE) and television (TVE, Telemadrid, and Cuatro). Different philanthropic associations contribute with grants: Google (twice—Google News initiative and Google.org Impact Challenge), Ashoka Fellowship, International Fact-Checking Network and Open Society Foundation for Europe, member of the international network founded by the magnate George Soros. Again, Google seems, along with Facebook, to be a source of financial resources for *Maldita*, under the heading of "technological alliances". Lastly, *Maldita* receives aid from public competitions and grants, "which never directly affect its editorial content" and from other educational projects and services. In short, the organisation's revenue comes from philanthropic grants, tech alliances, media collaborations, and community contributions.

3.8. Verificat

Verificat is a journalistic project focused on counteracting misinformation in Catalonia, launched in the run-up to municipal elections in Barcelona in 2019. Its main distinguishing feature is that it is focused entirely on the current political and social situation in Catalonia, as a regional service. Six journalists are responsible of this small service.

Verificat provides detailed information on its website about its origin, directors and financing sources. Verificat is a non-profit organisation registered in the *Guide of Entities of the Govern of Catalonia* with registration number 65912, co-founded by the journalists Alba Tobella (president) and Lorenzo Marini (vice president) [92]. *Verificat* is part of the International Fact-Checking Network of the European Observatory of Disinformation SOMA, the Iberifier Observatory for Spain and Portugal, and the Platform for Media Education of Catalonia, promoted by the Consell de l'Audiovisual de Catalunya [93].

On their website, it is mentioned that *Verificat* receives support from the Open Society Foundation, founded by George Soros, and the International Public Policy Hub of Barcelona, a workspace for social enterprise companies. The declared donations received from the Open Society Foundations were EUR 21,741.99 in 2019 (in the balance of accounts, 22,741.99) and EUR 52,892.65 in 2020. It has also received EUR 1000 as a donation from the communication consultancy Ideograma and EUR 1212.5 for the realisation of a university workshop. The expenses declared for the year 2019 were EUR 20,579.6, in supplies and other operating expenses. It does not give information about its strategic business objectives [93].

Furthermore, this fact-checking service usually collaborates with *Newtral* and El Periódico de Catalunya [94].

3.9. Bendita.eu

Bendita.eu is the most recent Spanish fact-checking project, founded in 2019. It has no website and the checked news are posted on its Twitter, Instagram, and Facebook

accounts [95–97]. Apart from their principal Twitter account (@Benditapuntoeu), they have other accounts dedicated to specific topics: Equality (@BenditaIgualdad), History (@B_Historia), Immigration (@BInmigracion), Justice (@BenditaJusticia), Economy (@BenditoDato), Science (@Bendita_Ciencia), International Relationships (@BenditaInter), and Culture (@BenditaCul).

Bendita presents itself as an independent platform created by professionals from different fields, dedicated to dismantling hoaxes and fake news. However, it is not a transparent platform: it does not inform about the members of their team or their professional profile, nor about its sources of funding, nor its selection criteria and verification techniques. Indirectly, it is presented as an alternative to *Maldita*, which it considers with a progressive bias in the selection and verification of news; their names are a wordplay: blessed (*bendita*) versus damned (*maldita*).

Due to its recent funding and its status as a smaller agency, *Bendita* has not yet signed the International Fact-Checking Network's code of ethics.

4. Discussion and Conclusions

The information provided by the fact-checking services does not reveal their business models, except in the case of *Newtral* and, to a certain extent, of *Maldita*. However, not even *Newtral* or *Maldita* provide enough information or have enough history to conduct an analysis based on the model presented for Osterwalder, Pigneur, and Tucci [58], without conducting interviews with their owners and managers. For their part, the services that belong to media groups obviously participate in the business model of the corporation they belong to, but in no case is there transparency on the specific objectives of these services, nor information on how they are expected to contribute to the success of the group's strategic objectives. Finally, other Spanish fact-checking services do not even have the nature of a company, either because they take the form of associations or private initiatives, more or less transparent in their objectives.

However, it is possible to recognise some business key elements in the Spanish fact-checking services that allow seeing the general picture of this market and identifying some clusters (Table 2). The first and most important distinction is found on their legal nature, with the presence of five groups, which indicates the variety of the Spanish ecosystem: the only independent company, a start-up from a previous professional experience in a media company, is *Newtral*; on the other hand, *Maldita* and *Verificat* are registered as non-profit organisations; whereas *B de Bulo*, *Hechos El País*, *AFP Factual,* and *EFE Verifica* belong to media companies or press agencies; and *Malaprensa* and *Bendita* are just personal websites or a social media accounts. Obviously, the promoters of the fact-checking services that belong to media companies or press agencies are those institutions themselves, and the rest are due to entrepreneurs, generally journalists, with the exception of *Malaprensa*, the initiative of a professor, and *Bendita*, which is unknown. The customer profile is a third classification criterion: the general public is the final consumer of the news and analysis published by all the fact-checking services, and for free, but five services (*Newtral, AFP Factual, EFE Verifica, Maldita* and *Verificat)* have commercial clients who pay for their products, trying to consolidate a viable business. The funding sources in the seven fact-checking services with commercial interest are varied: the newspaper sections (*B de Bulo* and *Hechos El País*) are financed by the media company; the press agency services, the two associations (*Maldita* and *Verificat*), and *Newtral* sell their service to media companies and social media; and the associations also accept grants of external supporters. Finally, regarding human resources: in four cases, the owners elaborate their products, two of them (*Malaprensa* and *Bendita*) free of charge, and the other two (*Maldita* and *Verificat*) receiving some type of income as members of the promoting association; however, the services that are part of companies have employees, dedicated exclusively to fact-checking or part-time when doing other journalistic tasks, and two media companies (*El País* and *Diario Sur*) ask for the help of their readers.

Table 2. Spanish fact-checking services: business key elements. Source: own illustration.

		Malaprensa	El Objetivo/Newtral	Hechos (El País)	B de Bulo (Diario Sur)	AFP Factual	EFE Verifica	Maldita	Verificat	Bendita
Legal nature	Company		X							
	Association							X	X	
	Web or social media	X								X
	Newspaper section			X	X					
	Press agency service					X	X			
Promoter	Media company		X	X	X					
	Press agency					X	X			
	Entrepreneur	X	X					X	X	X
Customer	Media companies		X					X	X	
	Social media		X			X	X	X		
	General public	X	X	X	X	X	X	X	X	X
Funding sources	Company resources			X	X					
	Sale of services		X			X	X	X	X	
	External founders							X	X	
Human resources	The owners	X						X	X	X
	Employees		X	X	X	X	X			
	Public contributors			X	X					
Code of principles	International Fact-Checking Network		X			X	X	X	X	

Regarding the validation of the first proposition to verify if the fact-checking services are transparent about their ownership structure and business models, it can be concluded that in relation to fact-checking services that are divisions of other journalistic companies, transparency in terms of shareholding and composition of the management board is the same as that of their main media companies. Opacity is often found in the links between these individuals and companies with other productive sectors outside the communication sector. These links can alter the informative coverage of certain facts and condition the independence of the media. The fact-checking services that depend on these media groups are no strangers to this trend, as shown in the literature review [22,70]. However, in the case of fact-checking services that are born as initiatives of journalists outside other media, we have found that the trend towards transparency is clear, except in *Bendita.eu*. Most of them make public the composition of their companies and non-profit societies and the means of financing used, as well as other issues related to the business model that sustains them.

The Spanish fact-checking services are more transparent in their relationship with other institutions, such as fact-checking initiatives, universities, or social media. It should be noted that five of the nine fact-checking services (Maldita, Newtral, EFE Verifica, AFP Factual, and Verificat) are verified signatories of the International Fact-Checking Network code of principles. The fact-checking service *Verificat* collaborated with *Newtral* during the election campaign in Catalonia. It should be pointed out how in less than a year, two master's degrees related to Fact-Checking, Digital Verification, and Data Journalism have been launched, one from *Newtral* and a private university and the other one from Maldita.es and a public university. As it can be seen, *Maldita* has now a business relationship with *Malaprensa*, since Josu Mezo will be a professor in the recently created Master's. Moreover, *Newtral, Maldita, Agencia France-Presse,* and *EFE Verificat* have a partnership with Facebook.

It could be said that there are two "outliers" who use social media to offer and disseminate their fact-checking services: *Malaprensa* and *Bendita.eu*.

Regarding the second proposition, if the information that they give about themselves is in accordance with the values that govern their work (the search of the truth), it can be concluded that fact-checking services, whether independent or dependent on other media, provide information on their websites about their principles and values. They state these values as the main reasons for their work and the main ways to justify their presence in the media outlook. Some of these values, expressed by themselves, are the fight against disinformation, the fight against dangerous fake news and the loss of credibility in traditional media. This is true for *Malaprensa*, *Verificat*, *Maldita,* and *Newtral*: they are transparent in both their ownership structure and income provenance. We cannot assure this for Bendita.eu due to a lack of information.

The structure of *Malaprensa* is clarified by the sections "about the editor" and "why this webpage". *Malaprensa* is Josu Mezo's personal blog. He claims that although he is not an expert in communications, he wants to observe and comment on the false information provided by the media. Therefore, it is an independent and personal project, and he does not receive any funds. The frequency of his publications is inconsistent, as they seem to be created with personal or intellectual interests. *Verificat* links its website to its account balance and its registration in the "*Guide to entities of the Govern of Catalonia"*. It is a non-profit fact-checking service focused on the political discourse and the education of critical information consumption; in line with it, *Verificat* offers several educational programs under the name of *Verificat Escola*. It also gives information about their verification methodology. As for its values, it claims transparency and neutrality. It tries to use non-anonymous sources and it links them whenever it is possible. *Maldita* has no legal obligation to make its accounts public, but it provides detailed information on its account balance. However, taking into account the professionalisation of its work, it should evolve towards its configuration as a cooperative company and be subject to the corresponding legal obligations. *Newtral*, of all the independent initiatives of the media, is the one that offers the greatest detail of its accounts, in correspondence with the declared values of independence and transparency; its interest in expanding and diversifying clients can help to maintain these principles. Lastly, *Bendita.eu* was not as clear as the previous fact-checking platforms, since it does not provide information about it, even if it claims itself as an "independent fact-checking service". It was not possible to find more information about the platform. An exhaustive research about their tweets would be necessary to declare that there is no bias in their fact-checking activity.

Studies similar to the one presented in this article should be carried out in other countries in order to discover if the deficiencies discovered in the information that independent verification agencies and those that are part of large groups give about their business model is common to other countries. The absence of interviews with the managers of the platforms is not considered a limitation for this study since its objective is to discover whether there is transparency and certainty about the facts that the fact-checking platforms claim for third parties and that they apply to themselves, allowing the general public to know their interests and their business objectives.

Finally, it has been perceived that one of the main challenges for fact-checking services is to find a sustainable source of funding, especially for those born from journalistic or civil society initiatives, independent of the media. The implementation of the recommendation for the short to medium-term of European Commission in 2018 in the report "*A multi-dimensional approach to disinformation"* could be of great help to the member states to provide "funding to research organisations that operate innovation hubs or living labs open to fact-checkers, accredited journalists and researchers from different relevant fields" [93] (p. 36), as well as the support for the private sector media and for the demonstrably independent public service media who "can help to produce quality information, counter disinformation, and increase media and information literacy" [98] (p. 20).

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Fact Checkers Facing Fake News and Disinformation in the Digital Age: A Comparative Analysis between Spain and United Kingdom

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Abstract: The current media ecosystem, derived from the consolidation of Information and Communication Technologies, shows a scenario in which the relationship between the media and their audience is being redefined. This represents a challenge for journalistic practice. In the digital age, the public actively participates in the construction and dissemination of news through social networks. Faced with this loss of control by the media, fake news and disinformation are emerging as one of the main problems of journalistic practice in a competitive business context, and with a high saturation of news content. In this situation, fact checkers emerge as key players in the information verification process. This research comparatively analyses the main fact checkers in Spain and the United Kingdom through content analysis applied to their corporate websites to understand their characteristics and working methodologies. The results underline that they are concerned with the concepts of transparency and honesty, along with showing their funding streams. The rigorousness of the verification process also stands out, as well as the importance of dialogue with the audience in their work. While in Spain they are featured by their non-profit nature and their international coverage, UK fact checkers focus on national information and are sometimes conceived as a business.

Keywords: social media and new challenges; journalism; fact checkers; fact-checking agency; disinformation; fake news; Spain; the United Kingdom

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1. Introduction

Nowadays, journalistic practice is immersed in a context of huge transformations, motivated, among other factors, by the increasingly proactive role of the audience in the production and dissemination of news through the tools provided by Information and Communication Technologies [1]. Thus, the nature of journalism as a profession that has had to adapt and reinvent itself according to the different circumstances of each historical period is once again evident with the Internet and its new tools being decisive in the 21st century in the evolution of information consumption. In the current communication ecosystem, dominated by a hyper-connected society with high levels of information demands, new narratives and new professional profiles are required in order to examine content "critically to build a citizenry that is aware of its role in society" [2] (p. 1).

One of the great challenges facing the practice of journalism today is the spread of fake news through social media, which quickly goes viral if unchallenged and assumed to be the truth [3]. In addition to the necessary education and digital literacy, fact checkers are agents that identify, verify and evaluate the veracity of the news. It is one of the professional profiles required to foster a critical spirit in society in the digital era. It is a subject of research that arouses the interest of the scientific community due to its relevance and pertinence in contemporary society. Previous studies portray the current landscape of fact checkers in Spain [4,5], or in other countries such as China [6] or the United States [7]. However, the originality and contribution of this paper lies in offering a comparative

analysis of the defining characteristics and policies of the main fact-checking agencies of two European countries through content analysis applied to their corporate websites.

Fact-checking agencies from the UK and Spain have been analysed mainly for two reasons. On the one hand, because both countries have different media systems. Based on the relationship between politicians and journalists, there are three media systems: the polarised pluralist model, the corporative democratic model and the liberal model [8]. Depending on the country, and its earliest to latest development of press freedom, the media system will be more or less influenced by the government. This research has only considered two of the three explored models: the polarised pluralist (Spain) and the liberal (United Kingdom). The corporative democratic model was discarded as it is a fusion of the others and, therefore, no major differences between the two systems are expected.

On the other hand, fact-checking agencies in the UK and Spain were considered inte- resting for this research because both countries have been struggling with a growing amount of fake news, mostly related to important political topical issues such as Brexit or Catalonian's sovereignty issues. This situation puts democracy at risk, since it limits the freedom with which citizens shape their own opinions on matters of public interest or even purely political ones [9,10]. This would explain why different governments try to legislate to prevent the dissemination of fake news [11]. It is in this context in which news verification agencies become more important, it should be taken into consideration that a well-informed citizenry makes them free to form their own opinion and to vote without being influenced by false information [12,13].

The general objective is translated into the following specific objectives:

- Explore the particular characteristics of agencies at the level of legal identity and economic transparency;
- Identify the communication channels through which they interact with the audience, as well as the tone or style of communication they use;
- Determine the methodology and policy they apply in the process of verifying the information that they analyse.

This research aims to explore the possibilities and diversity of fact-checking agencies in two countries that are very relevant in this area. The collected data can be used for future creation and implementation of new verification agencies. Given the growing concern about the importance of fake news at a global level, this type of initiative will continue to expand and this research proposal can help to understand how they are constituted, how they work and their methodologies.

As a main hypothesis, it has been considered that these kinds of agencies are not-for-profit organisations in order to guarantee the honesty, quality and independence of their work.

1.1. Social Networks as a Source of Journalistic Information

For a long time, communicative studies have focused on mass media society [14]. However, since digital platforms are a reality, the interest has changed from the mass media to a Net society [15–17]. In this context, traditional journalism has to adapt itself if it wants to survive [18]. The Internet and the Net society appear as a new sphere with concrete characteristics that, to a greater or lesser extent, affect the audience [19–24].

Journalists are looking constantly for new stories to write about. Journalism has always been strongly linked to looking for people's stories and making reports about them. Nonetheless, with the advent of social media, all that has changed is the place to find these conversations and, therefore, where stories are created [25,26]. On social networks, where there are a lot of people telling their stories and expressing their opinions about something that has already happened, they find a source of stories. It is like a "market", where media professionals will find wonderful "ingredients" to "cook" a new "recipe". Nowadays, journalists can obtain enough resources to build a complete story on social media [27]. In fact, social networks are generating such interesting new stories with the huge flow of user activity involved, where otherwise it wouldn't attract media attention.

Currently, journalists not only find sources of information for a story that they are working on, but they also find stories to potentially become a report [28–30]. By using social media, journalists are able to find sources of information that are quite useful to their reports, because "consumers can report immediately on what is going on at any given place on the globe" [31] (p. 306). It could happen that when journalists, reporters or bloggers are assigned a new story by an editor or producer, they may not have the contacts necessary to obtain that information in a quick manner [32]. So, by asking for information about that story on social networks, they can find the information that they were looking for [33].

Before the social media era, "the web [provided] journalists with enhanced abilities for composing accurate and complete stories. Adding in newsworthy material to complete or 'filling-out' a story [became] possible in an intertextual digital media environment, which encourages viewers to explore layers of stories" [34] (p. 543). This is possible because it is feasible to "disseminate an information request to a large number of public relations practitioners" which nowadays, in the social media era, definitely "produces multiple responses which can serve as sources for the story" [32] (p. 258), and also because social media provides a platform where passive witnesses can become active and share their eyewitness testimony with the world, including with journalists who may choose to enrich their reports [35].

Therefore, journalists use the information that is published on social networks to develop their news [36]. For example, to obtain the statements of public figures or ordinary people that are eyewitness to disasters, riots or incidents. Hence, the advent of social media platforms allows journalists to find new sources of information as a consequence of their constant monitoring activities, or also from a request made by news media professionals through social networks, but without forgetting the importance of verifying the authenticity of the obtained information in a story.

1.2. Fake News and Disinformation in the Digital Age

Social networks are framed in the context of consumption motivated by information, entertainment and fun, conceived as digital leisure spaces [37]. In this scenario, the current conversational communication paradigm [38] makes it possible for the user to become the protagonist of content management [39,40]: the user can participate, disseminate or cooperate through the different emerging digital tools made possible by social networks, and all kinds of virtual sites for communication and exchange. Social networks therefore facilitate a participatory culture [41,42], and have a great capacity to influence an individual's behaviour [43]. In this sense, they mark a before and after in human behaviour [44]. Thanks to technology, anyone that has an account on Twitter, Facebook or Instagram is able to publish anything and add any multimedia resources, such as photos or videos. In these digital spaces, citizens freely express their feelings, beliefs, opinions, etc., on certain topics, which are given prominence and visibility due to the amplifying nature of social networks [45]. This clearly implies a change in audience conduct, which also has a direct effect on journalism. A shift towards where the hub of the news is produced has been clearly observed. The increasing importance of the online audience in news production [46] has also meant that by using social networks, journalists are able to hunt for interesting stories and also to publish information with multimedia material due to the cooperation of users that provide that material. In this way, "social media platforms are dominant players in a highly-concentrated online news market" [47] (p. 261). The major advantage of this digital ecosystem is the feedback and interactivity that all these platforms permit [48]. However, despite their intensive use, social networks as sources of journalistic information raise doubts and mistrust [49] as the credibility and reliability of the information is questioned.

In the digital age, the public actively participates in the construction and dissemination of news through social networks, with the consequent loss of control by the media [50,51]. In these circumstances, fake news proliferates [52,53]. It is one of the issues with the greatest impact on public opinion today, due to its special significance in various fields such as politics, science, society, communication in general and journalism in particular.

At the same time, previous studies indicate that this is a thematic area of great impact in the scientific community of Social Sciences, with Communication being the area with the greatest presence of this type of research project [54].

The democratisation of communication, facilitated by the Internet, leads to the spread of hoaxes and lies that undermine democracy in the digital age [55], and young people are intensely exposed to fake news [56]. The immediacy, the desire for new information and the possibility of viralisation of content make fake news a massive international phenomenon, with great persuasive power motivated by the linguistic and visual resources of manipulation that are adopted so that users will share them [57]. Added to this is the importance of the effect of strangers on the Internet. Recent studies show how people mentally represent and perceive strangers online. In this sense, there is evidence that on the Internet we tend to trust strangers more than we reasonably should because we implicitly represent/treat them as having a good reputation [58].

This reality has a significant impact on the processes of information disorder, disinformation and infoxication that leave aside the veracity and contrast of information [59,60]. This makes it increasingly difficult to choose truthful and correct information [61]. Preliminary research shows that fewer and fewer people are checking the information they receive through social media, which contributes to the faster spread of fake news in the digital landscape [62]. In this way, fake news and the processes that result from it pose a great challenge to democracy and journalism [63].

1.3. Fact Checkers

There are various initiatives advocated by journalism from the frame of reference of digital communication, cyber media and the challenges it faces; among these challenges, one of the most important is to fight against misinformation and hoaxes spread through social networks. Thus, there is a need for transversal, general and specific competencies that take advantage of the potential that the Big Data society offers to the profession of investigative and precision journalism [64]. Along with the mastery of new technologies for content production, there is a demand for professional profiles such as the data journalist [65,66], capable of exploring and extracting useful information from the huge amount of data present on the Internet. There is also a demand for new forms of storytelling for multimedia [67], or through virtual reality and immersive journalism [68]. In addition, numerous fact-checking platforms and initiatives have been developed as key figures for data verification [69].

Fact checkers were born in the United States and have spread globally. They are one of the most important trends in journalism in the digital age, arising from technological advances and socio-political conflicts [70]. The rules of the Internet, governed by competitiveness and immediacy, have affected the verification of information circulating on the Net [71]. The task of fact checkers is "to carry out all the necessary processes to determine whether a news item (or piece of information) corresponds to reality, has been manipulated or is outright false" [5] (p. 6). In this way, the role of fact checkers is not limited to being an extension of traditional journalism, but they are agents that even correct some of its deficiencies [72]. Fact checking is conceived as an emerging journa- listic milestone that has the potential to promote healthier public debate in the contemporary media environment [73]. It is argued that fact checkers can only succeed and fulfil their mission if they gain the trust of the audience through the transparency of their practices [74] and their political neutrality [5]. In Europe, the activity of fact checkers is part of the Action Plan against Disinformation presented by the European Commission in 2018, which, among other measures, promotes the work of fact checkers as a reference for obtaining accurate information.

2. Materials and Methods

A descriptive empirical study was carried out with the aim of portraying the picture of the main fact checkers in Spain and the United Kingdom. For this purpose, the technique of content analysis was used as a way of approaching the object of study, complemented

by an exhaustive qualitative analysis of the information contained in the fact checkers' corporate websites.

Content analysis is conceived as a technique that considers the context as the frame of reference in which the message under study is developed, and which can lead to certain objectives or others [75]. It is a sociological research technique that analyses social reality by combining observation and documentary analysis [76]. It is defined as "a research method that allows for the exploration of any type of message" [77] (p. 180) and has special significance for media messages, as is the case in this research. In fact, media message content analysis has a long history in the field of Social Sciences [78–80].

In this way, it made it possible to analyse the form and content of the selected contents through the quantification of different variables related to them, guaranteeing the scientific nature of research in the Social Sciences [81].

2.1. Units of Analysis

The choice of the units of analysis examined was based on the criteria of recognition and prestige from verification agencies; the agencies selected are those that are members of the IFCN (*International Fact-Checking Network*), a unit of the Poynter Institute founded in 2015 to bring together international fact-checking journalists [82]. It is the world's leading organisation of fact checkers, whose core principles are balance, non-politicisation, transparency and honesty. In Spain, *Newtral*, *Maldita.es* and *EFE Verifica* were analysed, and in the UK, the corporate websites of *Full Fact*, *Logically*, *Fact Check NI* and *The Ferret* were examined.

2.2. Variables to Be Studied

Following the objectives defined in the introduction, an analysis template was developed to serve as a data collection instrument to systematise the recording of variables. This dimensional analysis sheet (Table 1), which records and systematises the variables, was drawn up by considering the following categories of analysis:

Table 1. Variables to analyse.

Corporate Identity			
Legal Identity		**Economic Transparency**	
Date of establishment Property Type of ownership Name Professional profile Team		Funding Balances and results Profit motive	
Corporate Communication			
Visibility	**Contact**	**Others**	**Team**
Social media profile Newsletter	Contact details	Tone Design	Who
Fact Check			
Content		**Methodology**	
Thematic focus Subject of analysis Where (media) Formal resources		Consulted sources Citing sources Verification process Information classification Right of rectification option Others	

Source: own elaboration.

3. Results

3.1. Fact Checkers in Spain

3.1.1. Newtral

In terms of identifying the characteristics that make up its identity, *Newtral* is an audiovisual startup whose origins date back to 2018. In terms of ownership, it has a sole owner who is a natural or physical person with great media impact: Ana Pastor, linked to the channel *La Sexta*. Professionally, she has a degree in Journalism. As for the team that surrounds it, the website specifies in detail each of the people who are part of *Newtral*, a team composed of 74 members, most of whom are female (39 women and 35 men). In addition to their names, their positions are specified, and each of them is introduced with a brief, informal descriptive paragraph about their mission on the platform. This section is complemented by photographs of all of them, an aspect that conveys closeness and confidence. These are images with casual clothes and a broad smile, which move away from an excessively serious and rigid vision of their work. It is one of the largest fact-checking companies in Spain. Due to its relevance as a verification agency, it is part of Facebook's data verification programme.

Corporately, this fact checker is non-profit and advocates economic transparency as its hallmark, providing information about its funding and its balance sheets and results. They are independent journalists with no connection to any political party, private lobby or similar organisation. Revenues are generated through the services provided to different customers and therefore the financing of the company is maintained from the own resources generated.

Newtral has a profile on different social networks: Twitter, Facebook, Instagram, YouTube and Telegram. It offers anyone interested with the possibility of subscribing to its newsletter as a way of being informed of its news, and has various tools for contacting them in case you want to send them any information of dubious veracity: email, landline phone and WhatsApp. As indicated on the website, theirs is the first on-demand verification service via WhatsApp in Spain. In all cases, they address their audience with a tone or style of communication that is always personal and direct, but at the same time formal and rigorous.

The website has a Verification Zone. Its verification team is made up of 9 people, again mainly women (6 women and 3 men). The youth of all of them is striking, with an average age of 32 according to their profiles. The main subject of its verification work is the political sphere. Thus, it focuses mainly on verifying the truthfulness of statements made by politicians. These statements are made in a variety of media (press, radio, television and social networks). Formally, the statements appear on the website with the name and position of the politician, the phrase in question in quotation marks and a photograph of the person making the statement. By clicking on the statement, the information is expanded and explained in great detail and the sources for the verification work are cited. At the methodological level, they specify that the sources consulted are of three types: public and official data, experts in the field and the communication offices that advise politicians. In relation to their procedures, in order to try to mitigate the biases of the journalist or verifier, a verification process is carried out that consists of three filters within the team. After this, they classify the information in a traffic light system with four levels of veracity:

- "True" (green)
- "Half-true" (yellow)
- "Misleading" (orange)
- "False" (red)

As part of its policy, it provides the right to rectify the information catalogued as a result of its verification process.

3.1.2. Maldita.es

Maldita.es, together with *Newtral*, is the fact-checking platform with the highest levels of notoriety in Spain. It is a project that emerged from *Maldita Hemeroteca*, a brand that

journalist Clara Jiménez Cruz developed in her spare time, and that would be the seed of this platform. *Maldita.es* was constituted as an association in 2018, and has Clara Jiménez Cruz as founder and director and Julio Montes as co-founder and deputy director. Despite a professional past linked to *La Sexta*, *Maldita.es* has always been featured as an independent and non-profit project. The team is made up of 29 people, 16 women and 13 men, and on their website they state that they do without consultants because they do not use them. The team is distributed among *Maldita Hemeroteca*, *Maldito Bulo*, *Maldita Ciencia* and *Maldito Dato*, each of the subdivisions of *Maldita.es*. Due to the diversity of its contents, the team of professionals of this fact-checking agency respond to varied profiles that complement journalistic work: engineering, computer science, biology, graphic design, etc. In all cases, they present themselves through the website with their photograph, name, position, contact email and a brief CV. As in the case of *Newtral*, the presentation of the team is characterised by their proximity and informal tone.

From an economic point of view, the website has "Our accounts", where they explain the origin and destination of the platform's income. They base their credibility on transparency and this is what they say. Thus, their funding comes from collaborations with media and platforms, workshops, grants, prizes and voluntary donations from the community to maintain the platform. They provide links to their statutes, and specify each of their sources of income and expenses in detail. At the same time, they encourage the audience to ask questions in case of doubt.

In terms of corporate communication, they build brand identity through the word "Maldito", which establishes lexical cohesion between most of the concepts on the website. This word gives a direct and very colloquial tone of communication. These characteristics are transferred to all the words used on its website and also to its graphic design style. The platform is present in social networks such as WhatsApp, Facebook, Twitter, YouTube, LinkedIn, Telegram and TikTok. As a method through which the audience can contact *Maldita.es*, it has an app *(Maldita App)* and encourages audience participation through registration (with or without financial contribution), the sending of dubious news and the "Toolbox" for the public to learn to verify information by themselves.

Its fact-checking methodology depends on the referent of the information, which depends on whether it is a fact or a hoax. Thus, *Maldito Dato* focuses on politicians' statements about documents, statistics or data that are made publicly, through the media, at events or through social networks. In order to verify they search open sources, contact experts and carry out specific searches in ordinary search engines and on the deep web. The person who has made the statement or their team is always contacted. The news goes through three filters or levels of verification and classifies the content as:

- "False"
- "True but..."
- "False but..."

The information analysed is presented in the style of a news item. It has a headline, a photo illustrating the information and a verdict on the information. The resources used for the verification process are indicated and an extensive explanation is given. If they make a mistake, they rectify it and communicate it. *Maldito Bulo*, on the other hand, has a much more complex multiple verification process that involves the collaboration of the entire team, always insisting on teamwork and transparency.

Like *Newtral*, it is part of Facebook's external verification programme.

3.1.3. EFE Verifica

EFE Verifica is the most recently created fact checker of all those analysed in the Spanish context, originating in 2019. Its owner is a legal entity, as *EFE Verifica* defines itself on its website as a tool of the *EFE Agency* against growing disinformation. Thus, it is part of the well-known *EFE Agency*, an important multimedia news company and leading international agency in Spanish. Its team is made up of a small number of people, four journalists in total, with a majority of men (one woman and three men), although the

woman is the head of the team, and has a Latin American background. Despite this small number of members, it is explained that the team is supported by the synergies that come from being part of an international network such as the *EFE Agency*. The presentation of the team is characterised by its seriousness and brevity. There are no photos or e-mails, only the names, surnames and a few lines about the professional profile of the staff members. All of them have journalistic training and an extensive professional career. This design and this description lend rigor and formality to the presentation of the team.

Financially, there is a short explanation of its funding: they explain that the *EFE Verifica* team is financed from the general budget of the *EFE Agency*. The agency receives compensation from the state for providing a Service of General Economic Interest as well as for the sale of services to clients. Some data on turnover figures are given, and reference is made to the annual accounts of *EFE Agency* for any kind of economic information. Specifically, on *EFE Verifica*, it is mentioned that in 2020 it signed a paid agreement with Facebook to fight disinformation on its platform.

Corporately, it builds its brand identity around the *EFE Agency* brand, linking it to its notoriety and its image characteristics, which are positively valued as a journalistic reference. *EFE Verifica* has its own profile on many social networks (Facebook, Twitter, YouTube, LinkedIn, Telegram, Pinterest…), and its main channels of contact with the audience are email, WhatsApp, social profiles on Twitter and Facebook and a form on the website. Their communication style is practical, they use little informative text and always rely on the tone of the *EFE Agency* as the driving force behind their work.

In terms of their working methodology for the fact checking, their principles are rigour, accuracy, transparency, impartiality and independence. They do not focus on a specific type of content but deal with a diversity of topics, such as health, education, politics, science, environment, technology, security or human rights. These contents are identified in videos, audios, photos, texts or memes that circulate on the Internet and that meet at least one of the following requirements: they are widely disseminated, they are a danger to public opinion and/or they provide useful information for the citizen. In the verification process, they contact the original source, use official and public data from alternative sources and consult academic and technical experts if necessary. For each of the aspects to be verified, a sentence is presented as a summary of the news item being verified and a photo. Then, a text answering two questions: "What do we check?" and "Conclusion". At the end are the sources consulted for the verification. The verification is reviewed by at least two members of the *EFE Verifica* team, and an editor from *EFE Agency*. Unlike other fact checkers, *EFE Verifica* does not use labels or verdicts on the facts, as they are considered reductionist, but a conclusion. In case they have to rectify, they publish a correction of the original article with the identification "Correction".

3.2. Fact Checkers in United Kingdom

It should be noted that, although the *International Fact-Checking Network* verifies four fact-checking agencies in the United Kingdom, just two of them check information that might be of interest to all citizens in the UK. The others are focused only on the country where they are located, these are: *Fact Check NI* (Northern Ireland) and *The Ferret* (Scotland).

3.2.1. Full Fact

This fact-checking agency located in the UK was founded in 2008. Surprisingly, they do not deal with information that only concerns Scotland, Wales or Northern Ireland. They assert that they check claims that are of national interest in areas where they have expertise.

They are a registered charity, so they are supposed to be a non-profit organisation. Their CEO is Will Moy, an expert on Marketing. They assure that they are impartial and that their board includes representatives of different political parties and viewpoints.

This fact-checking agency is made up of 41 people: 23 men and 18 women. Any staff member has a photo and a brief and informal description of their background. All photos

are in black and white. In addition, they have a network of volunteers, although their website does not specify who they are.

One of its main values is transparency and, therefore, *Full Fact* publicises their funds. However, although this organisation offers their annual accounts and reports, they do not openly show them on their webpage. All that they share is the shortcut for the Charity Commission website. According to their webpage, their incomes come thanks to the support of people and organisations, and they also add more information about their benefactors. Their main funder is Facebook, with more than £500,000. In fact, they work for Facebook as an independent fact checker under its Third Party Fact-Checking initiative. It is interesting to note that both WhatsApp and Google appear on the list of supporters, even though their donations are not very high.

All their information is free and shared on social media: Facebook, Twitter and Instagram. *Full Fact* also offers the possibility of subscribing to their newsletter in order to be updated on their latest reports. This agency offers two different ways of contact: for the public and for the press. Those who want to contact them as a reader have a section on their webpage with a form, while the media is offered a phone number and an email address.

Full Fact checks statements made by politicians, public institutions and journalists as well as viral online content and news on both the media and social networks. Two things should be noted regarding their methodology. On the one hand, how they check the facts. Firstly, they contact the claimant to ask them about the issue —unless the claim's source is obvious—, then they check that information with a wide range of sources, even with experts if necessary. They assert that they ask people for a correction when they get things wrong, although they do not clearly explain how they achieve this. After doing their research, they publish their information featured by the use of descriptive headlines with a picture. They use a formal language but it is also easy for people to understand.

On the other hand, it should be taken into consideration that while some fact-checking agencies rate the validity of claims or people, *Full Fact* does not. They claim on their webpage that this can be reductive in certain contexts, and do not always fully communicate the nuance behind their findings.

In the event that users consider that a report is incorrect, they can claim for a correction by using a digital form.

3.2.2. Logically

Logically was founded in 2017 and is located in the United Kingdom. *Logically*, together with *Full Fact*, are two of the most important fact-checking agencies in the UK which cover topics of national interest, not just those located in a specific area of the UK, which is the case for *Fact Check NI* and *Ferret Fact Service*. They describe themselves as a technological company which combines human resources with advanced artificial intelligence and machine learning in order to fight against misinformation and disinformation.

The company was founded by engineer Lyric Jain, and is made up of 49 people (23 men and 26 women). Its employees are not allowed to be a member of any political party or even support or be involved somehow in anything related with political parties or politics. It is a fact-checking agency (free), as well as a company which offers their services to others (not-free). They help individual citizens to national governments with the tools they need to identify and disarm damaging and misleading information being shared online. Because of this double aspect, their team is formed by professionals from different fields: engineers, business management, journalists, lawyers, etc.

In short, *Logically* is a company which sells its services as a fact-checking agency to governments, public sector entities or private sector organisations. Therefore, it is a profit-motivated organisation. Their main aim is to identify possible threats and analyse, identify and mitigate the spread of misinformation and disinformation for their clients.

Logically's website states how the company was founded, however, it does not offer information regarding their financial accounts, probably due to the reason that it is a profit-making company.

They focus on politics, public figures statements and news overall. They also research fact checks as a request made by users through *Logically*'s app. According to their webpage, they will investigate, verify and adjudicate any suitable claim submitted by users which is adequate, in consonance with their claim publication policy.

A suitable claim for them to investigate could be any statement made in a public or publicly accessible forum, properly assessed as more or less reasonable, or simply true or false, and adjudicated on the basis of publicly available evidence and commonly held standards of reasoning.

As it has been said before, all their information offered as a fact-checking agency is free, and it is also shared on social media (Facebook, Twitter, LinkedIn and Instagram). Those who want to contact them have a section on their webpage with a form. They use at least two sources of information to confirm a judgement on a claim such as expert consensus, expert opinion, non-expert journalistic investigation, and eyewitness accounts, among others. Their news is featured by being brief and concise, with short and simple grammatical structures, and also by having at least one picture for each news item. It is also interesting to note that every piece of information is rated by five classifications:

- "True"
- "Misleading"
- "Unverifiable" (not enough evidence to judge its veracity)
- "Partly true" (misleading in some insubstantive respects, but is still helpful in understanding the point at issue)
- "False"

Those users who consider that a report is incorrect can claim for a correction by filing out a form.

3.2.3. Fact Check NI

Fact Checker Agency is a non-profit Northern Irish fact-checking agency founded in 2016 by Orna Young and Allan Leonard. *Fact Check NI* is formed of 10 people: five women and five men. On the agency's webpage, each staff member is presented with a brief descriptive paragraph in a formal way about their mission on the platform. This section is accompanied by photos of all staff. They are images with formal clothing and a wide smile.

Although it is not one of the largest UK agencies inside the *International Fact-Checking Network* (IFCN), this agency was awarded a grant from Horizon 2020 (a programme at the European Commission) and also joined Facebook's Third-Party Fact-Checking programme. This agency's funds also come from charitable trusts and individual donations. They claim to be transparent in three ways: about their funders and accounts, their sources of information and how they make their investigation. In fact, in every piece of information they clearly show their sources, and they also publish their financial accounts.

This agency shares their information on Twitter, Facebook or LinkedIn, and also tries to engage its users by using a newsletter. They also encourage their readers to contact them by email, or to submit a claim by email or by using a Google Form available on their webpage. The *Fact Check NI* team decides to verify information by asking themselves these two questions: firstly, "Is it important?" They assess the potential impact of a piece of information going unchecked; and secondly, "Is it fact-checkable?" As it is explained on their website, the claim must be a statement made in public, which can be attributed to a specific person (not limited to politicians nor campaigners) or organisation (perhaps a press release or a report), an assertion or allegation that can be validated or refuted, or based on past or present actions (but not speculative about the future).

The style used in all its communications is formal but personal, brief and concise and very well structured, which makes it more readable. Their webpage has a section called "fact checks" where all the checked information is uploaded. The most topical topics are those related with politics and public issues concerning Northern Ireland. In all their reports they include three sections which allow them to identify clearly if a fact is true or not: "Claim" (here the issue is briefly explained), "Conclusion" (in two or three lines they

cast light on whether or not it is true) and "Infographics" (always used in the same creative style with short information to sum up the investigation).

When possible, they try to contact the person/organisation the claim is about in order to verify the accuracy and double-check the given explanations with any sources of information that the claimant provides, as well as look into reliable statistical information and primary sources. In all of their published articles, they give information about their sources.

After that, the reports are classified in this 5-level rating:

- "Accurate"
- "Accurate with considerations"
- "Unsubstantiated"
- "Inaccurate with considerations"
- "Inaccurate"

If readers need to claim for a correction in an article, they can do it by email.

3.2.4. The Ferret

The Ferret is a Scottish fact-checking agency launched in 2015 and founded as a non-profit organisation by freelance journalist Alastair Brian. Their staff is formed of 12 people: four women and eight men, and most of them are journalists, activist or political writers. This agency has a section on their webpage where they explain briefly, but in a descriptive way, their previous experience. Each description has an informal photo of the employee concerned. This low-sized number of staff might be explained due to the fact that *The Ferret* focused only on information regarding Scotland and its topical issues. They check statements from politicians, pundits and public figures which come from viral claims, hoaxes or memes shared on social media.

The Ferret asserts on their webpage that they are the first agency in Scotland to be regulated by Impress, an organisation who fight for high-quality journalism. In addition to this, none of their directors are members of a political party, and they also are committed to taking a non-partisan approach to everything they do. As they explain, all stories are reviewed by experienced journalists before publication and checked by lawyers, when required.

Their funders are member subscriptions, grant funding, training fees and story sales to other media organisations. They offer their financial accounts on their webpage.

In terms of how they verify information, they decided to investigate the information based on these questions:

- Is it verifiable? They don't check opinions which are subjective value judgements, entirely speculative, or based on moral or philosophical argument.
- Is it likely to be widely seen? They aim to check the veracity of claims which may have an impact on the public debate.
- What is the source of the claim? They are more likely to check claims from those who have a significant voice in public debate, such as politicians and public figures.
- Is it newsworthy? They want to fact check things which are part of the current conversation, so will focus on current issues as they come up.

The Ferret verifies the information found as part of its daily media and social media monitoring tasks, as well as at the suggestion of its readers. Those who want to contact them have a section on their webpage with a form, Telegram, email, post, SMS or by a call. It is interesting to note that they offer an anonymous option to contact them. This fact-checking agency asserts that when they decide on a statement to check, they follow several steps. Firstly, they go to the person or entity who made the original claim to ask for evidence where possible. Secondly, if that person or entity provides them with evidence, they double-check to determine how accurate the statement is. And, thirdly, they look at information on-the-record, publicly available and from authoritative sources. They also claim to speak with experts in the relevant field to help them.

Some of their information offered requires a subscription: standard membership (£3, per month) or Gold membership (£9, per month). However, the information shared on social media (Facebook, Twitter, and Instagram) is free. They use social networks as a way to drive traffic to their webpage and also to create engagement with their current and potential audience. Their reports are written in formal language although with a personal tone, they use descriptive headlines where they also add whether the information is true or not. On all occasions, they seek the participation of their audience, either by requesting donations or inviting them to send the information they want to verify. *The Ferret* also rates their fact checks by using a 7-degree scale:

- "True"
- "Mostly true"
- "Half true"
- "Mostly false"
- "False"
- "For Facts' Sake (FFS!)"
- "Unsupported"

When a correction of a report is required, users can contact *The Ferret* by email or by dropping a message on the agency's Facebook or Twitter accounts.

3.3. Comparative Analysis between Fact Checkers in Spain and United Kingdom

A wide description of Spanish and UK fact-checking agencies has been seen. Although both have their similarities between each other they also have differences. Therefore, a comparison of the most remarkable findings will be made in this section.

Fact checks' ratings. Almost all the analysed agencies in both countries used a type of scale in order to categorise their obtained results regarding an investigated fact. There are two exceptions: one in Spain *(EFE Verifica)* and other in the UK *(Full Fact)*. Surprisingly, both point out that labels or scales are not accurate at all, and can even be reductive in certain contexts.

Free or paid service? While in Spain none ask for subscriptions or other alternative types of payment, in the UK it was found that two out of the four agencies are not completely free. In the case of *The Ferret*, to read all their reports a subscription is needed, and *Logically* offers reports for free but their bigger 'business' is their paid services as a company, which helps individual citizens to national governments to identify and disarm damaging and misleading information.

Team and identity. It is interesting to note that Spanish agencies verify national and international information, while in the case of UK they only focus on topical issues that are of national interest or located in the country where they are settled *(Fact Check NI* and *The Ferret)*. Regarding their staff, with the found information we can assert that in both cases the majority of their members are young (between 29and 44 years old per average) and most of them are journalists, although they have different professional backgrounds inside their teams. Almost all the organisations analysed have been founded in the last five years—which might explain their teams' youth—, except for *Full Fact*, the oldest agency of all (2008) and nearly all of them publish a photo and description of each employee, with the exception of *EFE Verifica* which does not show any pictures of their members. Concerning the level of equality, Spanish agencies tend to have higher parity levels rather than UK ones. In fact, all the fact-checking agencies located in Spain are ruled by women, meanwhile in the UK, only one is co-chaired by a woman *(Fact Check NI)*. With respect to their funders it should be noted that in all Spanish agencies Facebook is an investor, perhaps as a part of its research program regarding misinformation, while in the UK, Facebook is only mentioned in *Full Fact* and *Fact Check NI*.

Financial information. All but *Logically* are non-profit organisations. It should be taken into consideration that it seems this company uses their fact-checking reports as a way to engage with their potential customers. However, all the analyses agencies provide information about their balance sheet and their funders perhaps as a way to prove their

concern with transparency. *Logically* does not offer as much detail as the other agencies, this is probably due to being a profit-making company.

Communicative practices. In all the analysed organisations, the communicative style used is formal but personal and colloquial, with descriptive headlines, photographs and clear explanations of whether a piece of information is true or not (regardless of the use of rankings). Their Web designs are clear and structured, making it easy for a user to navigate them. All of them also have a presence on social media and ask their audiences to participate on them. Furthermore, they offer their users several ways to establish contact with them, except for *Logically*, which only offers a form as a contact option.

Methodology. The comparison between the UK and Spanish cases shows that, overall, these organisations tend to focus on politics and statements regarding political issues, although they also verify other concerns, particularly those involving hoaxes, memes or viral content. All the sources consulted are quoted in their information. Furthermore, they widely explain how they do the fact checking, as well as how they make their conclusions. Almost all of the organisations analysed use a ranking system to determine how accurate the analysed fact is. The only exceptions are: *EFE Verifica* (Spain) and *Full Fact* (UK). Interestingly, all the agencies analysed have an option to request the rectification of information in the event that users consider it to be incorrectly verified.

4. Discussion and Conclusions

The reality of the fact-checking agencies analysed shows the decisive role of this new journalistic agent, taking into consideration the active role of citizens through social networks. Thus, in the digital era, we can speak in terms of the proactivity of the audience, as well as the journalistic profession which, through fact checkers, offers its response to the dissemination, consumption and interpretation of the media by the public in today's society.

The mission of fact checkers and their relevance in the field of journalism transcends the specific events or phenomena they investigate, such as the COVID-19 pandemic [83], to promote themselves as important and necessary actors involved in certifying the veracity of news and facts in different fields of activity, with politics being the most common [84] but not the only one they focus on. It is estimated that the proliferation of fake news leading to disinformation will continue to increase, to the point that half of all the news circulating by 2022 will be fake. This is mainly due to the low cost of producing fake news compared to the enormous cost of making real news produced through rigorous journalistic work [85]. Alongside the fundamental role of fact-checking agencies, other initiatives or solutions have recently been proposed to deal with the problem of fake news. This is the case, for example, with the idea that proposes a computational approach to extract features from social media posts of users to recognise who is a fake news spreader for a given topic [86]. In this respect, it is also worth noting the interesting initiative of providing consumers with a "nutrition facts" style of information for online content as a way of protection from fake news [87].

In this sense, the role of fact checkers goes beyond its understanding as a simple extension of journalism, as they even complete and allow to correct some of its drawbacks [72]. There is even talk of fact checking as a new journalistic genre capable not only of monitoring the information disseminated on social networks, but also of its capacity to transform complex information into knowledge that can be assumed by citizens [88].

These agencies serve as a platform or meeting point between journalistic reality and citizens, with whom they strive to maintain close and collaborative contact. In this way, they aim to promote a healthier public debate in today's media environment [73], and contribute to the development of a critical spirit in the face of information saturation derived from conventional media and social networks, which represents a key educational challenge [89].

At the European level, and in relation to the comparison between Spain and the United Kingdom, news verification agencies strive to show their transparency and usefulness to the public. However, the initial hypothesis is partly confirmed, as although non-profit agencies

are the norm, one of the agencies analysed *(Logically)* is a for-profit agency. Regardless of their profit motive, they base their efforts on combating and tackling the dissemination of false news, with the clear objective of having a free and well-informed society. To this end, all of them work under three fundamental perspectives: firstly, verifying and checking information suspected of not being real and considered to be of public interest based on their founding criteria; secondly, explaining whether the fact analysed is real or not through a clear and concise report; and finally, telling readers where they have obtained the information and offering them the possibility of contact if they consider the result of their investigation to be inaccurate.

A possible limitation of this research is the analysis of two European countries, a circumstance that could be remedied in possible future research with the aim of carrying out comparative analyses between the reality of fact checking in more countries, both European and from other continents, to see if there are significant differences in their journalistic work. On the other hand, possible future research on fake news could delve deeper into the sociological reasons behind the spread of fake news, and its relationship to the belief systems of the communities in which people are embedded, such as membership groups and reference groups.

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Article

Citizen Perceptions of Fake News in Spain: Socioeconomic, Demographic, and Ideological Differences

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Abstract: Although the phenomenon of disinformation and, specifically, fake news has become especially serious and problematic, this phenomenon has not been widely addressed in academia from the perspective of consumers, who play a relevant role in the spread of this content. For that reason, the present study focuses on determining how this phenomenon is perceived by citizens, as the strategies to counteract fake news are affected by such opinions. Thus, the main objective of this study was to identify in which media the perception and experience of fake news is greatest and thus determine what platforms should be focused on to counteract this phenomenon. A survey was conducted in October 2020, among the Spanish adult population and was completed by a total of 423 people (with 421 valid answers). Among its main findings, this study determined that social media platforms are the type of media in which the greatest amount of fake news is perceived, which confirms the suggestions of previous studies. Furthermore, the experienced presence of fake news seems to be primarily affected by age and gender, as there was a higher level of skepticism observed among young people and women. Additionally, the use of media seems to be positively correlated with the perceived and experienced presence of fake news.

Keywords: fake news; disinformation; misinformation; hoaxes; social media; citizen perceptions

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1. Introduction

According to the Trust in News study [1], 46% of news audiences believe that fake news influenced the outcome of recent elections. A Eurobarometer in 2018 [2] showed that 83% of respondents perceived fake news as a danger to democracy, while 53% of Spaniards claimed to encounter fake news daily or almost daily. An Ipsos study [3] further showed that 57% of Spaniards admitted to believing fake news.

Despite the relevance and interest of these observations, disinformation has not been commonly studied in academia from the perspective of citizens and consumers. The few authors who have studied this topic include Tandoc, Lim, and Ling [4]. These authors considered the citizen's role to be key, as citizens are the consumers of fake news and hoaxes. Indeed, understanding the opinions and experiences of citizens is essential to understand disinformation and present effective solutions. Consequently, the aim of the present study was to fill existing knowledge gaps on the perceptions of citizens regarding this problem. More specifically, this study did not analyze the factors influencing the diffusion or credibility of fake content, as this subject has been explored in the past [5–7]. Instead, we sought to discover how this phenomenon is perceived by citizens, given that media literacy and other strategies to counter fake news are affected by these opinions. Due to these potential practical applications, the main objective of this work was to discover in what types of media and social platforms the perception and experience of fake news is greatest, as these media require the strongest efforts to counteract disinformation. To enable a deeper analysis, a further aim of this study was to determine the existence of potential differences due to age, gender, level of education, socioeconomic level, and ideology.

Besides the interest of the topic of study, this article enriches existing quantitative literature by using a deep statistical approach to fake news in a Spanish setting. However, despite not being the most common approach, several works in Spanish academia have applied surveys related to our topic of study, such as the surveys developed by Gualda and Rúas and Masip, Suau, and Ruiz-Caballero [8–11]. Many works have also focused on more specific aspects, including several studies on fact-checking activities [12,13] and media analyses [14,15]. Additionally, many recent works focused on the COVID-19 pandemic [16–18], following an international trend. Building upon these works, the aim of the present study was to increase knowledge of fake news in a Spanish context.

This article addresses and narrows the discussion about fake news, especially in a Spanish setting. First, we detail the process followed to study the perceptions of Spanish citizens on this issue. Then, we explore the obtained results and, finally, discuss the results in connection to the existing literature in the field while also describing the study's limitations and future lines of work.

2. Literature Review

The first challenge in studying disinformation and fake news is selecting and defining the appropriate terms for this phenomenon. The largest discussion surrounds the use of the term "fake news". Authors such as Wardle and Derakhshan [19], in one of the most influential texts on disinformation, rejected the use of "fake news"—first, because this term is inadequate to describe the complex phenomenon of "information pollution", and second, because politicians from around the world have appropriated the term to describe news organizations whose coverage they dislike. Despite this rejection of the term "fake news", other authors have supported the use of this term in contrast to "disinformation"; such authors argue that both are valid but describe different realities. Bennett and Livingston [20] differentiated between "fake news" (isolated incidents of falsehood and confusion) and disinformation (more systematic disruptions of authoritative information flows due to strategic deceptions). Similarly, in a Spanish setting, Tuñón Navarro, Oleart, and Bouza García [21] highlighted the differences between traditional disinformation—the spread of information that is hard to verify and its subsequent use to obtain a variety of benefits—and the more novel concept of fake news—completely or partially fake information designed to look like real news, with the goal of confusing the audience and obtaining a political or economic profit. These authors also noted that fake news is a type of disinformation that has reached a high level of popularity, both in academia and public opinion.

Following this line of thought, the present work supports the use of both terms, as long as each term refers to its respective reality. Thus, our analysis focused on isolated cases where fake content attempts to imitate the format and style of journalistic news, rather than more complex disinformation campaigns. For this reason, we primarily use the term "fake news" (the equivalent Spanish term, *noticias falsas*, was used in the questionnaire).

Beyond a terminological discussion, it is relevant to highlight the growth of the problem of disinformation in recent years. This problem is not new, and much discussion around this phenomenon has focused on this factor [22,23]. Indeed, some of the explanations behind the proliferation of fake news utilize traditional theories, such as confirmation bias [24,25] and selective exposure [26], as well as traditional communication and media theories, such as agenda-setting [27]. However, other more novel elements and theories should also be considered, including the roles of bots [28] and, very importantly, the roles of echo chambers and filter bubbles [19,29]. These factors are strongly related to confirmation bias and selective exposure and have been widely discussed in relation to the social media environment [30].

Thus, despite its long-term existence, the current importance of fake news is unquestionable. Indeed, fake news is not only discussed by academia and professional media but also remains present in all aspects of communication and society [31]. The Spanish journalists surveyed by Blanco-Herrero and Arcila-Calderón [9] noted the seriousness of disinformation in the profession, and several other authors have shown that

this phenomenon has become one of the largest threats to democracy and society as a whole [11,20,32]. Bakir and McStay [33] also added that the situation generated by fake news is socially and democratically problematic: It leads to ill-informed citizens who are prone to remaining ill-informed in their echo chambers and becoming emotionally polarized and enraged due to the affective and provocative nature of fake news.

It should be also noted that, although fake news is usually associated with textual content, such news is also spread through different formats, including images and videos. The emerging technology of deepfakes [34] is one of the most relevant challenges in the current scenario [35]. However, there are already multiple efforts to combat fake news—such as through legislation and media literacy. Among these efforts, the relevance of automatic detection is garnering significant attention due to its already promising results [36]. Alternatives include crowdsourcing detection [37] and the well-established task of fact-checking [38].

Regarding the reasons for the increased importance of this problem, Figueira and Santos [23] claimed that to understand the particularities of present-day disinformation, two structural factors should be explored: the trust crisis in the media [7,39] and the appearance of a new and more complex media ecosystem. One of the most characteristic features of this ecosystem is *infoxication*, which is associated with the prevalence of infotainment, the exploitation of highly attractive topics, a lack of attention to journalistic ethics, and the pursuit of *viralization* [40]. This factor cannot be understood without examining the precariousness of journalism, which other studies [41,42] have already connected to lower ethical and quality standards, thereby contributing to a lack of trust in the media. Bakir and McStay [33], in one of the most complete approaches, explained the current phenomenon of fake news in connection with five factors derived from the ecology of digital media: the financial decay of traditional media; the immediacy of the digital environment; the creation and rapid circulation of misinformation and disinformation created with illegitimate goals or because of ignorance; the growing "emotionalization" of discourse; and the profit generated by the algorithms used in social media and search engines.

Besides these factors, the most relevant feature of fake news today is its broad circulation online. Indeed, during the U.S. Presidential Elections in 2016, fake news survived thanks to traffic on social media, which generated 41.8% of the visits to such news sites, in contrast to only 10.1% among the reference news sites [43]. There are, moreover, no precedents to the spreading capacity of information disorders on social media [26]. Vosoughi, Roy, and Aral [44], in one of the most relevant works in the field, observed that fake news has a 70% greater chance to be reproduced, as well as a further, faster, deeper, and broader reach than true news in all categories of information, mostly politics. Similar observations were made by Mathew et al. [45] and by Allcott, Gentzkow, and Yu [32].

Thus, even though the phenomenon of fake news affects the whole media system, social media seems to play a key role. This allowed us to formulate the following hypothesis:

Hypothesis 1 (H1). *Spanish citizens consider social media to have a greater presence of fake news than other media formats.*

More specifically, Allcott, Gentzkow, and Yu [32] and Silverman [46] empirically observed that during the U.S. Presidential Elections in 2016, Facebook interactions were more common on fake news sites than on reference news media. Bakir and McStay [33] directly blamed Facebook for the appearance of the phenomenon, with the claim that "its seeds were laid in 2010 when Facebook introduced its newsfeed algorithm" (p. 155). This explains the great interest among academics in analyzing Facebook to study fake news and disinformation. However, some studies have already analyzed Twitter's role. For example, Allcott, Gentzkow, and Yu [32] observed that, although still far from the levels of interaction on Facebook, interactions with fake news sites on Twitter have been notably growing. Similarly, and despite the limitations of academic research due to privacy, WhatsApp has been considered a problematic platform for the diffusion of fake news content [47]. In light of these works, we pose the following research question:

Research Question 1a (RQ1a): In what social media do Spanish citizens perceive the greatest presence of fake news?

To obtain a more complete perspective, and due to the possible existence of differences between perceptions and real experience, a secondary question is posed:

Research Question 1b (RQ1b): In what social media have Spanish citizens experienced the greatest presence of fake news?

Finally, to serve as a basis for designing strategies to fight fake news and disinformation, it is necessary to more deeply analyze the possible factors underlying the different experiences related to this phenomenon, such as the use of social media, ideology, socioeconomic or educational level, age, and gender. The most relevant works in this area were conducted in the U.S. and dealt more with the propensity to believe or share fake news [43,48] than the perceptions of different media types. The closest work to ours was published by Masip, Suau, and Ruiz-Caballero [11], who studied the effects of ideology on trust in different media in Spain. Following this line of research, but with a broader approach, we pose the following question:

Research Question 2a (RQ2a): Do gender, age, educational level, socioeconomic level, or ideology affect the perceived or experienced presence of fake news?

Among the factors that might have an influence, the use of social media should be highlighted, as past studies [49] observed that a more frequent use of Facebook correlates with the greatest consumption of fake news. Thus, the following research question is presented:

Research Question 2b (RQ2b): How does the frequency of social media use affect the perceived and experienced presence of fake news?

3. Materials and Methods

This work follows the design of a study by Blanco-Herrero and Arcila-Calderón [9] on the perceptions of Spanish journalists but instead places the focus on the general Spanish adult population. Together with this questionnaire, the questionnaires used in the Worlds of Journalism Study and the Encuesta de Percepción Social de la Ciencia of the Spanish Foundation for Science and Technology [50] were used as models for the design of the questions, alongside the suggestions of experts during the validation process. The survey was conducted in October 2020, using the Qualtrics platform for design and distribution. The questionnaire was validated in two phases. First, validation was performed by a group of experts in the field—mostly members of Maldita Migración, belonging to the Maldita.es foundation, one of the most well-known fact-checking groups in Spain. Second, a pilot test was used to measure the reliability and stability of the instrument. For the pilot test, a subsample of 32 people answered the questionnaire twice, with 10–15 days between each response. This process allowed the removal or modification of items that offered lower Intraclass Coefficient (ICC) values.

Once validated, distribution of the questionnaire took place between the 7th and 12th of October using a subcontracted panel from Qualtrics to ensure the quality and adequacy of the sample. The total number of responses was 423, but two responses were removed as they did not meet the prerequisites of being Spanish and/or an adult. The final sample included 421 people, with 50.1% women and 49.4% men. The mean age was 34.27 years (SD = 12.577). The ideologies of the respondents, although balanced, tended to lean slightly towards the left (M = 4.55; SD = 2.512, with values from 1 (extreme left) to 10 (extreme right)). The level of education was measured with seven categories, with the most common being a university, masters, or postgraduate education (40.6% of the sample). Finally, family income was measured with five levels, with the most common group taking home after-tax family income over (26.3%) or around (33.5%) 1100 EUR per month.

3.1. Measures

The questionnaire used for this study was part of a broader survey that included, in addition to fake news, questions about hate speech and other factors related to the phenomenon. The questions chosen to assess our hypothesis and answer our research questions were grouped into three categories. The first category sought to identify the sociodemographic features of each respondent with questions on gender, age, level of education (no studies; primary school or equivalent; secondary school or equivalent; *Bachillerato* or equivalent; vocational training or equivalent; university degrees, masters, or postgraduate studies; and third-cycle studies (doctorate)), family income (assuming around 1100 EUR as family median income after taxes, the possible answers were very inferior, less than half; inferior; around that amount; superior; very superior, or more than two times higher), and political ideology (between 1 (extreme left)) and 10 (extreme right)). This section also included three questions to determine what type(s) of social media the person uses, as well as the frequency of his or her use of social and other types of media as sources of information. In each case, social media use was measured between 1 (never) and 5 (several times a day).

The second part of the questionnaire included two questions with several items to determine citizens' perception of fake news in different types of media (social media, digital media, blogs, press, radio, television, and interpersonal communication) and different social media platforms (Facebook, Twitter, Instagram, YouTube, LinkedIn, Telegram, TikTok, and WhatsApp). The perceived presence of fake news was measured from 1 (no fake news) to 5 (a great deal of fake news). Finally, the last section measured each respondent's personal experience with fake news on social media by asking whether the surveyed individual had encountered any content on social media that he or she believed to be fake; only previously selected social media platforms appeared as a choice. The reception of this content was measured between 1 (never) to 5 (many times).

3.2. Analysis

The 421 valid answers were anonymized and analyzed using version 26 of IBM's SPSS. First, to confirm that no inconsistencies were present, an exploratory analysis of the data was conducted, and the graphical distribution of frequencies was checked. The central part of the analysis included comparisons of the means using Student's T test for independent samples, one-way ANOVA and repeated-measures ANOVA tests, and Pearson's correlations. Type I errors were determined at 95% ($\alpha = 0.05$).

4. Results

The most commonly used social platform is WhatsApp, used by 87.6% (n = 369) of the sample. It is followed by YouTube (77.7%, n = 327), Facebook (75.1%, n = 326), and Instagram (75.1%, n = 316). These four are also the ones with a greater frequency of use: WhatsApp (M = 4.81; SD = 0.606), followed by Instagram (M = 4.49; SD = 0.903), YouTube (M = 4.11; SD = 1.003), and Facebook (M = 4.01; SD = 1.140). Twitter offered intermediate values, being used by 49.2% of the sample (n = 207) and with a frequency of use similar to Facebook (M = 4.01; SD = 1.140). Far from them, both in terms of users and frequency of use, we can find TikTok, Telegram, and LinkedIn, as Table 1 shows in detail.

Regarding the media used as a source of information, it can be observed that interpersonal communication (including instant messaging services, such as WhatsApp) is the most used (M = 3.94; SD = 1.301), followed by social media (M = 3.67; SD = 1.387) and television (M = 3.66; SD = 1.218). In an intermediate place we find digital media (M = 2.97; SD = 1.377), and with less frequency of use we can find printed media (M = 2.60; SD = 1.284), radio (M = 2.58; SD = 1.331), and blogs (M = 2.16; SD = 1.201). This is relevant because it shows the declining relevance of traditional media in the current information scenario [33], in which, in the context of post-truth [51], citizens trust alternative channels to find information.

Table 1. Most used social media.

Social Media	Users %	Frequency of Use (M, SD)
Facebook	**77.4% (n = 326)**	4.01 (1.061)
Twitter	49.2% (n = 207)	4.01 (1.140)
Instagram	75.1% (n = 316)	**4.49 (0.903)**
YouTube	**77.7% (n = 327)**	**4.11 (1.003)**
LinkedIn	25.2% (n = 106)	3.31 (1.041)
Telegram	23.3% (n = 98)	3.98 (1.140)
TikTok	33.5% (n = 141)	3.85 (1.125)
WhatsApp	**87.6% (n = 369)**	**4.81 (0.606)**

Source: the authors.

4.1. Perceived and Experienced Presence of Fake News

In response to H1, we determined that the media types with the greatest perceived presence of fake news are interpersonal communication (M = 3.63; SD = 1.126) and social media (M = 3.73; SD = 1.031). On the other side, the perception was lowest among radio (M = 2.72; SD = 0.987) and printed media (M = 2.90; SD = 1.093). In between these results are digital media (M = 3.01; SD = 1.013), television (M = 3.28; SD = 1.165), and blogs (M = 3.34; SD = 1.074). These differences are significant [$F(6) = 83.765$, $p < 0.001$, $h^2_p = 0.166$] and show that the greatest presence of fake news is found in the most commonly used media.

In response to RQ1a, we observed a similar phenomenon for social media, as the greatest presence of fake news was perceived on WhatsApp (M = 3.82; SD = 1.034) and Facebook (M = 3.81; SD = 1.060). Fake news has a notable presence on Twitter (M = 3.71; SD = 1.043) and Instagram (M = 3.71; SD = 1.004), followed by TikTok (M = 3.57; SD = 1.097), YouTube (M = 3.52; SD = 1.011), and Telegram (M = 3.38; SD = 1.050), with LinkedIn in last place (M = 3.11; SD = 1.086), as the social network with the smallest presence of fake news. These differences were also significant [$F(7) = 41.902$, $p < 0.001$, $h^2_p = 0.091$].

In response to RQ1b, smaller values were observed when respondents were asked about their own experiences, showing that personally experienced fake news was less common than perceptions of such news. Despite this decrease, the order of the results did not change, except for one case. WhatsApp (M = 3.57; SD = 1.164) and Facebook (M = 3.56; SD = 1.013) again featured the greatest presence of fake news, but these platforms were overtaken by Twitter (M = 3.61; SD = 1.013) as the social network where the most fake news was experienced by the sample. Instagram (M = 3.25; SD = 1.105), YouTube (M = 3.03; SD = 1.116), TikTok (M = 2.93; SD = 1.313), and Telegram (M = 2.87; SD = 1.224) again assumed intermediate positions, with LinkedIn as the social media platform with the smallest presence of fake news (M = 2.29; SD = 1.207). These differences were also significant [$F(7) = 2.966$, $p < 0.01$, $h^2_p = 0.175$]. Moreover, even though the level of significance was smaller (likely because of the few cases on some of the least commonly used social platforms), the effect size was the largest, showing that the strongest differences can be found in experience, rather than perception.

4.2. Differences Based on Personal Features

To answer RQ2a, we must explore the potential differences based on gender. First, the women (M = 30.17; SD = 10.076) in the sample were significantly younger than the men (M = 38.64; SD = 13.484), [$t(381.280 = 7.266$, $p < 0.001$, $d = 0.71$], and the family incomes reported by the women (M = 2.72; SD = 0.912) were significantly smaller than those of the men (M = 2.45; SD = 0.972), [$t(398) = -2.909$, $p < 0.01$, $d = 0.29$]. At the same time, women (M = 4.35; SD = 2.645) tended to be located further on the political left than men (M = 4.76; SD = 2.355), [$t(396.696) = 1.649$, $p = 0.1$].

The use of Facebook also tended to be higher among women (M = 4.12; SD = 1.042) than among men (M = 3.90; SD = 1.074), [$t(322) = -1.883$, $p = 0.061$]. Further, women (M = 4.69; SD = 0.739) used Instagram significantly more often than men (M = 4.20; SD = 1.026), [$t(222.833) = -4.701$, $p < 0.001$, $d = 0.55$]. The same result was observed for WhatsApp, with a significantly higher use among women (M = 4.89; SD = 0.506) than among men (M = 4.73;

SD = 0.693), [t(309.713) = −2.492, $p < 0.05$, d = 0.26]. However, men (M = 4.18; SD = 1.108) tended to use Telegram more frequently than women (M = 3.76; SD = 1.158), [t(95) = 1.805, $p = 0.074$]. In general terms, the use of social media as a source of information was found to be more common among women (M = 4.00; SD = 1.221) than among men (M = 3.36; SD = 1.461), [t(402.232) = −4.859, $p < 0.001$, d = 0.48]. Women (M = 4.21; SD = 1.153) also used interpersonal communication more frequently than men (M = 3.68; SD = 1.386) as a source of information [t(401.657) = −4.295, $p < 0.001$, d = 0.42]. On the other hand, men (M = 2.82; SD = 1.276) consumed printed media more often than women (M = 2.37; SD = 1.248) as a source of information [t(417) = 3.630, $p < 0.001$, d = 0.36]. The same result was observed for radio, which was more commonly used by men (M = 2.87; SD = 1.307) than by women (M = 2.30; SD = 1.295), [t(417) = 4.497, $p < 0.001$, d = 0.44].

The presence of fake news on social media was perceived as significantly higher by women (M = 3.85; SD = 0.918) than by men (M = 3.63; SD = 1.113), [t(400.337) = −2.190, $p < 0.05$, d = 0.22]. Women (M = 3.23; SD = 1.125) also perceived a greater presence of fake news in television than men (M = 2.98; SD = 1.216), [t(417) = −2.198, $p < 0.05$, d = 0.21]. The same result was observed for interpersonal communication, through which women (M = 3.74; SD = 1.110) tended to find more fake content than men (M = 3.52; SD = 1.133), [t(417) = −1.965, $p = 0.05$]. More specifically, women (M = 3.93; SD = 0.966) perceived more fake news on Facebook than men (M = 3.70, DT = 1.141), [t(404.018) = −2.196, $p < 0.05$, d = 0.22].

Regarding personal experience, women (M = 3.65; SD = 1.018) claimed to have encountered fake news on Facebook more often than men (M = 3.45; SD = 1.073), [t(324) = −1.754, $p = 0.080$]. At the same time, women (M = 3.68; SD = 1.159) tended to have encountered more fake news on WhatsApp than men (M = 3.45; SD = 1.161), [t(363) = −1.943, $p = 0.053$], whereas men (M = 3.18; SD = 1.178) encountered significantly more fake content on Instagram than women (M = 2.50; SD = 1.188), [t(95) = 2.813, $p < 0.01$, d = 0.57].

Besides the aforementioned younger ages of the women in the sample compared to the men, age was found to significantly correlate with family income [R(401) = 0.167, $p < 0.05$], which was higher among older people. A significant and negative correlation was found between the frequency of using social media as an information source and age; that is, social media is more commonly used among younger people [R(420) = −0.244, $p < 0.001$]. Similarly, the frequency of Instagram use significantly increased as the age of the surveyed person decreased [R(312) = −0.319, $p < 0.001$]. Moreover, the frequency of using blogs as a source of information significantly correlated in a negative way with age [R(420) = −0.149, $p < 0.01$]. Surprisingly, no correlation was found between age and the use of printed media—something that was observed with the consumption of radio, which was positively correlated with age—that is, older people listened to radio more often to find information [R(420) = 0.179, $p < 0.001$]. Finally, the frequency of using interpersonal communication as a source of information correlated significantly and negatively with age, as younger people were found to use this channel more often than older age groups [R(420) = −0.103, $p < 0.05$].

A negative correlation was observed between age and the perception of fake news on television, indicating a greater skepticism towards this medium among younger people [R(420) = −0.176, $p < 0.001$]. On the other hand, the presence of fake news on Facebook was perceived to be higher among older people [R(420) = 0.104, $p < 0.05$]. The same result was observed for LinkedIn [R(420) = 0.132, $p < 0.01$] and Telegram [R(420) = 0.124, $p < 0.05$]. The correlation between the experience of having encountered fake content on social media and age was significant and negative for Facebook [R(325) = −0.177, $p < 0.01$], Instagram [R(314) = −0.193, $p < 0.01$], YouTube [R(324) = −0.165, $p < 0.01$], LinkedIn [R(105) = −0.237, $p < 0.05$], TikTok [R(141) = −0.167, $p < 0.05$], and WhatsApp [R(364) = −0.214, $p < 0.001$]; the same result was observed, as a trend, for Telegram [R(97) = −0.171, $p = 0.095$].

Level of education was found to correlate significantly with family income [R(399) = 0.229, $p < 0.001$] and political ideology, [R(401) = 0.102, $p < 0.05$]; i.e., people with higher education levels were observed to have higher incomes and a tendency to be located more on the right

side of the political spectrum. The level of education also correlates in a significant and positive way with the frequency of using social media [R(416) = 0.103, $p < 0.05$], digital media [R(416) = 0.179, $p < 0.001$], blogs [R(416) = 0.139, $p < 0.01$], and radio [R(416) = 0.101, $p < 0.05$] as sources of information.

A significant and positive correlation was also observed between the level of education and the perceived presence of fake news on social media [R(416) = 0.165, $p < 0.01$], blogs [R(416) = 0.183, $p < 0.001$], and interpersonal communication [R(416) = 0.125, $p < 0.05$], as well as on Facebook [R(416) = 0.123, $p < 0.05$] and Twitter [R(416) = 0.133, $p < 0.01$]. At the same time, on Twitter, a trend and positive correlation was observed only between the level of education and the experienced presence of fake news [R(204) = 0.125, $p = 0.075$].

Besides significant correlations between level of education and age, as well as the lower family income among women, this economic variable showed a trend and positive correlation with the frequency of digital media use [R(402) = 0.103, $p = 0.093$]. This correlation was significant for radio [R(402) = 0.129, $p < 0.05$] and television [R(402) = 0.110, $p < 0.05$].

Family income tends to negatively correlate with the perceived presence of fake news in digital media [R(402) = −0.085, $p = 0.087$], and this correlation was found to be significant for the perceived presence of fake news on the radio [R(402) = −0.151, $p < 0.01$]. Focusing on social media, this correlation was found to be significant and positive for YouTube [R(402) = 0.114, $p < 0.05$] and WhatsApp [R(402) = 0.117, $p < 0.05$] but was a trend only for Telegram [R(402) = 0.090, $p = 0.073$]. Similarly, a significant and negative correlation was observed between family income and the experience of having encountered fake news on Instagram [R(303) = −0.114, $p < 0.05$] and LinkedIn [R(103) = −0.198, $p < 0.05$].

The last analyzed factor was the influence of political ideology. A significant and negative correlation was found between ideology and the frequency of Twitter use, which means that this social platform is more commonly used by citizens on the ideological left [R(199) = −0.211, $p < 0.01$]. This phenomenon was also observed for Instagram, where the correlation was only a trend [R(305) = −0.095, $p = 0.098$]. On the other hand, the use of blogs [R(406) = 0.101, $p < 0.05$], printed media [R(406) = 0.190, $p < 0.001$], radio [R(406) = 0.107, $p < 0.05$], television [R(406) = 0.148, $p < 0.05$], and interpersonal communication [R(406) = 0.109, $p < 0.05$] as sources of information was positively and significantly correlated with ideology; these media were found to be more commonly consumed by those on the right of the political–ideological spectrum.

The correlation between political ideology and the perceived presence of fake news on interpersonal communication was significantly negative [R(406) = −0.103, $p < 0.05$]. The same result was observed for Facebook [R(406) = −0.110, $p < 0.05$], which indicates that more progressive individuals believe that there is more fake news on these media platforms.

In response to RQ2b, for all types of media, positive correlations seem to exist between the perceived presence of fake news and the frequency of use, although these correlations were only found to be significant for interpersonal communication, social media, and printed media, always with small effect sizes. A similar result was observed for the various social media, among which significant correlations were found for Twitter, Instagram, WhatsApp, and Facebook, where the effect sizes were only slightly higher. In the case of social media, the experienced presence of fake news was also positively correlated with the frequency of use, and these correlations were found to be significant for TikTok, Facebook, YouTube, and WhatsApp; the effect sizes were, moreover, similar to those observed between frequency of use and the perceived presence of fake news. All these values can be found in Table 2.

Finally, positive correlations were observed between the perceived and experienced presence of fake news on social media. This correlation was found to be significant for Facebook [R(326) = 0.345, $p < 0.001$], Twitter [R(204) = 0.323, $p < 0.001$], Instagram [R(315) = 0.265, $p < 0.001$], YouTube [R(325) = 0.308, $p < 0.001$], LinkedIn [R(105) = 0.319, $p < 0.001$], and WhatsApp [R(365) = 0.364, $p < 0.001$]. For Telegram [R(98) = 0.233, $p < 0.05$] and TikTok [R(141) = 0.311, $p < 0.05$], the same result was observed, but the level of

significance decreased below 0.05 due to the smaller number of cases, as these social media platforms have fewer users.

Table 2. Correlations between frequency of use and perceived and experienced presence of fake news in different media.

	Perceived Presence	Experienced Presence
Social media	0.146 **	-
Digital media	0.135	-
Blogs	0.039	-
Printed media	0.131 **	-
Radio	0.050	-
Television	−0.020	-
Interpersonal communication	0.179 **	-
Facebook	0.126 *	0.144 **
Twitter	0.240 **	0.132
Instagram	0.165 **	0.068
YouTube	0.107	0.143 *
LinkedIn	0.024	0.104
Telegram	0.130	0.065
TikTok	0.112	0.221 **
WhatsApp	0.151 **	0.112 *

Source: the authors. * $p > 0.05$; ** $p > 0.01$.

5. Discussion

The study partially confirmed H1 because even though the greatest presence of fake news was perceived in interpersonal communication, most fake news was perceived on social media platforms. This result agrees with previous research [9,19,43] confirming the connection between the problem of fake news and social media. It should be noted that interpersonal communication, which is conducted between peers using a private channel, often takes place on platforms such as WhatsApp and Telegram.

WhatsApp was, in fact, one of the social media platforms on which the strongest presence of fake news was perceived—a result that matches previous observations [47,52,53] and confirms the concerns of previous studies in a Spanish setting [54]. Further answering RQ1a and RQ1b, Facebook and Twitter, together with WhatsApp, were found to be the platforms with the greatest perception of fake news, while Twitter provided the most experienced fake news. This result also matches previous observations, such as those of Allcott, Gentzkow, and Yu [32] noting that while on Facebook "the overall magnitude of the misinformation problem may have declined, possibly due to changes to the Facebook platform following the 2016 election", the increase of the problem on Twitter remains relevant.

Given the existing limitations in accurately measuring the presence of fake news, this study offers an alternative way to evaluate which platforms and types of media feature the greatest presence of fake news. Efforts to counter fake news and disinformation should, therefore, focus on these platforms. Fighting fake news is easier on Facebook and Twitter, which allow the removal of profiles or content, the flagging of disputed content, and links to fact checks. However, this process is more difficult on WhatsApp due to its privacy and infrastructure, although limitations to message forwarding and the introduction of notifications when a message has been forwarded multiple times have attempted to slow the spread of rumors and fake news.

Age and gender were found to be the most relevant factors that affected the perceptions of citizens, with few specific differences based on education level, family income, or political ideology. These differences based on personal features could be related to each other. For example, women tended to be younger and more left-wing, which are characteristics correlated to a more negative perception regarding the presence of fake news. At the same time, the experienced presence of fake news was found to be affected only by age and gender, with even smaller effects observed for the other factors.

The greater level of skepticism observed among young people and women—and, to a lesser extent, among more highly educated and left-wing people—corresponded with the observed factors influencing the credibility and sharing probability of fake news [43,48,55]. To some extent, this correlation could explain the reasons for these previous observations: If a person's perception of a platform is more negative and that person is aware of the potential presence of fake content, he or she is less prepared to believe or share that content [56]. Although further work is needed in this area, our study contributes to the existing literature on the credibility and spread of fake news.

Although not part of the study, some of the strongest differences were previously found not in the perceived or experienced presence of fake news but in the frequency of using different types of media and social media. For example, political ideology strongly influences what types of media or social media are consumed but does not strongly influence the perceptions or experiences related to the presence of fake news. These observations are not surprising: Young people use Instagram and social media more frequently, and people with higher levels of education and/or income consume more media in general. However, these observations also interact with other variables and help to explain people's perceptions and experiences with fake content. For example, when observing the relevance of age, experience was found to be higher among young citizens, but the perceptions were more negative among older individuals, showing that the greater media and digital literacy among young people might help them better identify fake content.

Another relevant aspect could be the influence of frequency of use (which was higher among younger people) in the experienced presence of fake content. Thus, in response to RQ2b, we argue that the use of media positively correlates with the perceived and experienced presence of fake news. The strongest presence of fake news was found among the most commonly used channels (interpersonal communication and social media) and social media platforms (Facebook and WhatsApp), while the experienced presence was highest on Twitter, followed by Facebook and WhatsApp, which are all frequently used platforms. This was also observed in previous works [49]. Moreover, it makes sense that users perceive more fake content in the media they most frequently consume. At the same time, this result indicates that the presence of fake news does not lead to a decrease in the usage or abandonment of a type of media or social platform, something that would be expected were that media not seen as trustworthy or reliable. The decision to ask all respondents (not only the users of the media type or social platform in question) about the perceived or imagined presence of fake news was done to measure whether some types of media or social networks have a generalized negative image that could keep people from using them. This result was not observed. In turn, for this RQ, the use and frequency of use of media seemed to most strongly determine the perceived and experienced presence of fake content. Further studies will be needed to further analyze the causes and implications of this observation.

In general, all the effect sizes of the correlations found in RQ2 were small. Thus, these observations could help design more adequate strategies against fake news, but further analysis is needed. An additional limitation of this work is that the general frequency of media use was not analyzed, as this question was only presented in connection to different types of social media. We chose not to explore this factor in order to ensure the brevity of the questionnaire and to highlight the different types of social media, which are key platforms for the spread of fake news, as the literature and the present study demonstrate.

Lastly, this study did not seek to measure the amount of fake news on social media. Previous studies quantifying online disinformation observed that fake news and disinformation, despite their relevance and potential harm, are only a small part of the conversation on social media and are often connected to partisan media [27]. However, the need to fight this disruptive and dangerous phenomenon is unquestionable. The present study sought to provide more detailed knowledge of the approaches taken by Spanish citizens towards

fake news, with the ultimate goal of helping to design strategies that could reduce the spread of, and belief in, this content.

The observations of this survey are partially limited by the time at which it was conducted (October 2020), during the Covid-19 pandemic, a situation in which the attention paid to disinformation has been strong and might have influenced the answers; for this reason, future works are needed to help study the longitudinal evolution of these observations.

As a conclusion, social media and interpersonal communication seem to be the scenarios for the largest spread of fake news, partially confirming H1; Twitter, WhatsApp, and Facebook seem to be the platforms with a greater presence of misinformation (RQ1); and women, younger people, and, although less strongly, more educated and progressive people seem to perceive a greater presence of fake news; this perception and experience seems to also be higher for people who use more of the media in question.

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Knowledge in Images and Sounds: Informative, Narrative and Aesthetic Analysis of the Video for MOOC

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Abstract: The virtual courses developed by higher education institutions incorporate the video format as one of the most used resources in the delivery of their online training offer. Within the different types of audiovisual productions found in MOOCs, the introductory or presentation video of the courses has become an illustrative piece of the new edu-communicative context of distance education, when articulating, in the same work, informative, didactic, and advertising content. The objective of this research work is to study the triple communicative nature of this innovative format following a specific methodology of audiovisual textual analysis. For this, 420 videos of this type of promotional video, belonging to 105 universities and educational centres that have developed MOOC courses for the Miríadax platform, are analysed. After checking the results of the formal characteristics, content structures, discursive techniques, and audiovisual language components of the videos, it is concluded that they are mostly pieces linked to the staging style of the classroom, but that, by enriching the visual appearance of a master lesson with audiovisual resources, take advantage of the narrative, aesthetic, and creative potential of audiovisual and advertising communication to capture the attention of the student-spectator, inform about the characteristics of the courses, offer valuable educational content, and generate an image of the brand for the institution responsible for producing the course.

Keywords: knowledge; didactic video; storytelling; digital media; YouTube; virtual learning; digital marketing; innovation; high education; information

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1. Introduction

Didactic video has experienced a very significant growth in the field of e-learning [1,2] due to the ease of production and dissemination of audiovisual content made possible by digital technologies applied to the various forms of online training [3–5]. In addition to the translation or reformulation of conventional videographic formats (video classes, tutorials, etc.), which predate the revolution of the knowledge society [6,7], this expansion of the audiovisual universe has brought with it the creation of new types of content that represent the close interrelation that is taking place between training, information, entertainment, and advertising [8,9].

In this sense, research and high-level scientific publications (WoS, Scopus) have also been immersed in this confluence between scientific knowledge and audiovisual dissemination of information [10,11] and, above all, in the permanent search for new ways of disseminating knowledge [12].

During the COVID-19 pandemic, this transformative process has been accelerated, both in the formative character of educational video and in new ways of disseminating scientific information [13,14], exacerbating the relevance of video in distance, remote, or online education [15].

Every day, in an ever-growing trend, search engines are accessed to find videos or podcasts that teach about a wide range of educational and scientific topics [16–18]: in the specific field of higher education, audiovisual resources have been decisively introduced

into university practice. Huge amounts of multimedia content are produced and consumed for both face-to-face and distance learning degrees [19,20], opening the debate on their institutional fit [21], economic viability [22–24], didactic quality, and effectiveness [25,26] or impact on the scientific community [27].

Similarly, these didactic contents demand new ways of creating stories for platforms such as YouTube [28,29], both in the innovative use of audiovisual languages and interactive techniques [30] and in the reformulation of genres and formats of content creation processes for streaming access [31,32]. The deepening interconnections between education and communication are especially evident in newly created formats that respond to the new needs of e-learning [33–35] and its different forms of assessment [36]. Storytelling applied to learning is an outstanding tool for the dissemination of academic [37] or scientific [38–40] knowledge, generating important audiovisual repositories [41,42], even though we are aware of the possible weaknesses and shortcomings of the use of narrative video [43].

One of these types of innovative videos, typical of YouTube broadcasting [44–46], is the so-called introductory, presentation, promotional, or 'about video' that serves as a gateway to most of the Massive Online Open Courses (MOOC) that can be enjoyed on platforms such as Coursera, EdX, or Miríadax, among others. This specific format demands an in-depth analysis from the perspective of audiovisual production or creation due, first of all, to its interesting hybrid nature, both for the heterogeneity of communicative objectives it poses, as well as for the variety of approaches, components, or narrative or aesthetic solutions it offers.

The introductory video is located outside the course's own training content itinerary with the fundamental mission of making the characteristics of the MOOC on offer known and inviting for a potential student to enrol or register for it. This type of video is disseminated both on the course access page itself and on the open internet ecosystem (YouTube, university repositories, educational websites, social networks, etc.) The format, therefore, has a triple function: to transmit an informative message (to publicise the course), to provide didactic content (a preview of the subsequent lessons), and, from the point of view of institutional or corporate marketing, to promote the course in turn in the form of a spot, trailer or advertorial.

2. Materials and Methods

To address the analysis of the video format of MOOC videos, this research formulates three specific objectives: to analyse the content of the videos and the audiovisual languages used; to detect common characteristics, patterns and didactic, informative or advertising trends in the production of these materials; to evaluate and propose guidelines for improvement according to the divergent needs of educational video creators.

The research sample is made up of the introductory videos of 420 MOOC courses of Miríadax (miriadax.net). This Telefónica platform offers one of the world's leading MOOC course catalogues, with more than 100 educational partners and more than 6 million enrolled students. The 420 videos analysed represent more than 95% of the content currently accessible on Miríadax, that contains a video of these characteristics, # uploaded specifically to the YouTube streaming channel.

The proposed analysis model consists of four blocks:

1. Formal characteristics: producing institutions, views, duration and language.
2. Structure: narrative architecture, constituents and opening formulas.
3. Content: subject matter, itinerary, teaching presentation, methodology, operation and advertising communication.
4. Audiovisual production: original genres, modes of production, languages, and techniques used.

The great thematic and formal heterogeneity of the courses on the Miríadax platform makes it possible to address these aspects in order to create a wide-ranging catalogue of audiovisual production solutions that encompass the possibilities of the introductory video.

MOOCs have been produced by 105 different educational institutions, either individually (99), in collaboration with another institution (4), or with two different partners (2). In the top ten, by number of courses, are: Universidad Politécnica de Madrid (64 MOOCs/15.23% of the total); Universidad de Murcia (22/5.23%); Universidad de Navarra (20/4.76%); Universidad de Cantabria (18/4.28%); Universidad del País Vasco (13/3.10%); Universidad de la Laguna (13/3.10%); Universidad de Salamanca (11/2.61%); Universidad ESAN de Lima (10/2.38%); Universidad Rey Juan Carlos (9/2.14%); Pontificia Universidad Católica de Valparaíso (9/2.14%). From a total of 23 institutions, more than 5 productions were analysed, while from 40, only one MOOC was available.

3. Results

3.1. Characteristics of the Format

The aggregate views of the 420 videos reached 6,244,794 views on YouTube, which gives an average of 14,868.55 views per video. The five most viewed contents are 341/Potencia tu mente (UC) with 174,328 views; 097/Development in HTML5, CSS and JavaScript (UPM) with 149,213; 304/Mindfulness to regulate emotions (UMA) with 142,957; 233/Introduction to programming (Telefónica) with 141,802; 152/Statistics for researchers (USAL) with 124,164. It is significant that, among the top 20 positions, in terms of number of views, 8 videos are related to life, personal, and professional development or growth, 7 to the Internet or new technologies, and 3 to education and research aimed at teachers and professors.

On the other hand, 92 videos exceed the threshold of 20,000 views and 190 exceed 10,000, while a total of 132 videos do not exceed 5000 and 17 do not reach 1000.

In total, the 420 videos have more than 6 million views. The main characteristic of this data is that these materials can go viral individually on YouTube or other social networks, reinforcing the brand image of each institution and of the Miríadax platform itself, without having been accessed exclusively from the course website, but from many different potential windows (search engines, websites, etc.)

The average length of the videos is 3:07 min. The length of the videos analysed varies mainly according to the type of genre to which they belong. Thus, the three longest videos, 280/Lexicografía didáctica española (UM) at 19:20, 334/Pena de muerte y Derechos Humanos (UCLM) at 13:46 and 288/Madrid, History, Architecture and Urban Planning (UPM) at 12:55 (among 7 other videos in the sample that exceed 10 min in length), assume a basic structure of a theoretical classroom lesson, with the teacher(s) playing a leading role, and therefore belong to the didactic genre that reproduces the staging of a master class.

At the other extreme, the 3 shortest videos, among 20 other pieces that do not exceed one minute in length, 345/Preparation for the PMP certification (UM) of 0:31, 88/Comparative civil law with a gender perspective (ULL/UCC) of 0:42, and 71/Create and publish a video game in Unity 3D (ITT) of 0:43, are limited to the format of a spot or advertisement, highlighting its promotional function above other narrative or didactic aspects.

On the other hand, between 2 and 5 min there are 254 pieces, 60.47% of the total. In this range of durations, the videos analysed articulate varied proposals with a clear tendency towards hybridisation of formats: although the educational component, indebted to the lecture, is also present, the audiovisual forms and styles of the report, the animation, or the interview are closer to television formats than to conventional didactic or scientific video proposals, such as the recording of video lectures or the recording of academic activities (conferences, workshops, etc.) The large amount of information contained in the videos analysed, together with the marketing communication elements they introduce, fit in well with these average lengths (Figure 1).

In terms of language, Spanish is predominant with 377 videos (89.76%), followed at a great distance by English with 22 (5.23%), Portuguese with 14 (3.33%), and 3 language combinations: Spanish/Portuguese in 5 MOOCs (1.19%), and Spanish/English and Spanish/Basque in only one occasion each (0.23%).

Spanish is clearly the most widely used language in these productions, most of which are produced by Spanish-speaking institutions, within a platform that is also aimed at a Spanish-speaking target audience. However, it is possible to glimpse the possibilities of translation and subtitling that some proposals present in order to expand their potential audience and their interaction with other academic or institutional contexts.

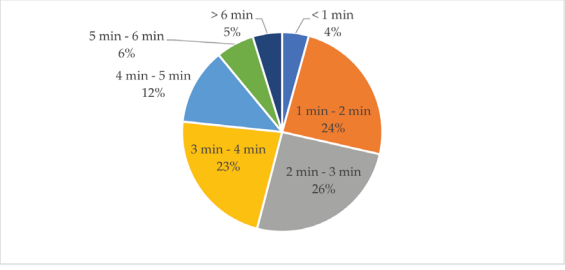

Figure 1. Duration of videos.

3.2. Structure

As it is a hybrid and complex audiovisual format, first of all, the structural analysis of the introductory video is considered. This section includes:

- Constituent parts: blocks, segments, or units.
- Beginning: standardised formula for the beginning. A classification has been established according to four generalised types: welcome or presentation, thematic, interrogation, and story.

Regarding the number of differentiable units, the overwhelming majority of videos are composed of a single block without explicit divisions (286 pieces, 68.10% of the total). Nevertheless, of the length of the video in this typology, the content is not fragmented into sections that combine several audiovisual sequences (for example, a video lecture with archive inserts or a dramatised scene). They are, therefore, recordings that are recorded in single takes or that opt exclusively for a particular audiovisual format (animation, interview, etc.), without taking advantage of other synergies between genres. Thus, videos with 2 blocks (56/13.33%), 3 (42/10%), or 4 (19/4.52%) show complex structures that organise the different parts in a heterogeneous way in order to order, hierarchise, or enrich the content.

With regard to the ways of starting the videos (Figure 2), the welcome to the course modality stands out (258 pieces, 61.43% of the total). In this typology, the teacher addresses the camera, reproducing the usual dynamics of a face-to-face class in which the student attends directly to the teacher's verbal presentation on the blackboard.

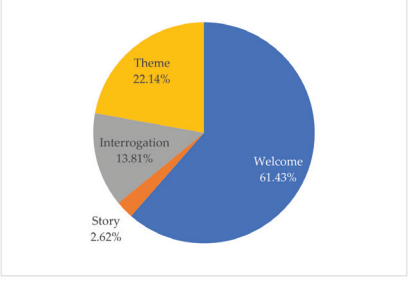

Figure 2. Start-up typology.

Secondly, the videos that begin by showing the MOOC's subject matter in images account for 93 units (22.14%). This is a start more typical of the report or documentary genre, formats that highlight the intrinsic value of the subject matter taught as opposed to other methodological or procedural aspects.

This is followed by videos that begin by asking the viewer one or more questions. Of these, 58 videos (13.81%) opt for this modality, considered to be one of the most effective for quickly connecting with the viewer by demanding their immediate attention.

Finally, 11 pieces (2.62%) start by telling a story, anecdote, or particular example. It is striking that this narrative procedure does not have a greater presence in the exhibition. The different types of narrative mechanisms that can be included in this section (flashback, in media res, practical demonstrations, exercises, problems, games, etc.) are powerful ways of beginning by capturing interest and creating expectations.

In addition, a total of 13 examples (3.09%) opt for a joint alternative: combining several different beginnings. For example, combining a welcome to the course with a game/problem/question to be solved before revealing the subject of the course.

On the other hand, only 11 videos (11.19%) start with recorded or archival images to capture attention with a quick or sensory-appealing montage. It is also significant that only 6 videos (1.43%) introduce a summary or table of contents to preview or synthesise the contents that will be developed later.

3.3. Content

For the specific study of the messages conveyed in the videos, six categories have been established:

1. Thematic: object, subject of knowledge, or general frameworks.
2. Formative itinerary: specific contents (modules, lessons, epigraphs, etc.)
3. Teacher presentation: information about the persons responsible for teaching the course, such as curriculum, affiliation, or other relevant personal and professional data.
4. Methodology: aspects concerning teaching strategies and techniques (flipped classroom, PBL, etc.), materials (videos, forums, etc.), or other explicit ways of approaching learning.
5. Operation: dynamics of the course, such as assessment criteria, tutoring schedules, or the different types of certificates offered at the end of the course.
6. Promotional communication: marketing messages about the course itself, complementary degrees, research groups or projects, or the academic institution responsible for or co-funding the MOOC.

It was found that 419 productions (99.76%) report directly on the subject of the course. This is not very significant because the general content, the subject matter, or the object of study are one of the most basic and necessary appeals when signing up for a MOOC, and it is logical to refer to them explicitly (Table 1).

Table 1. Content included.

Content	Vídeos	%
Theme	419	99.76%
Itinerary	375	89.29%
Teacher	227	54.05%
Methodology	178	42.38%
Promotional	152	36.19%
Operation	107	25.48%

Secondly, 375 pieces (89.29%) specify the course content, in terms of modules, subdivisions, or headings. Leaving aside the videos that already include, in this introductory video to the MOOC, a first master class that forms part of the complete course, this is the section to which most effort is devoted in terms of length. Listing or describing the contents, in the form of an index or itinerary, which will be covered throughout the weeks of the course takes up most of the video's time.

On the other hand, the teachers are presented directly in the video or are referred to as being responsible for the course in 227 pieces (54.05%). Teachers, research groups, professionals, academic managers, or students from other editions of the MOOC highlight their knowledge or experience.

As for the methodology, it has a specific section or mention in 178 productions (42.38%). Consequently, aspects such as innovative ways of teaching, the description of the types of multimedia content available to students, or the way of disseminating them that characterise MOOCs (virtual classroom, email, mobile devices, etc.) do not have the same relevance as the theoretical and practical knowledge covered by the course.

Even less is the presence of data on the internal functioning of the MOOC: only 107 videos (25.48%) include information on procedures, requirements, or tests for the correct development of the course. These messages, due to their temporary or changing nature from one edition to another, because they are provided in other MOOC materials or because they are already considered part of the internal dynamics of the course, appear as brief mentions or appendices in the video.

Finally, 152 videos (36.19%) introduce marketing messages. Taking into account the advertising nature of the format itself, as a sample or audiovisual showcase of the course, the following stand out as promotional values: the acquisition of theoretical-practical knowledge, the exclusive or differential content with respect to the competition, the prestige or quality of the university or training centre, the number of editions, the number of participants who have taken the course previously, the trajectory of the teachers, or the advantages or virtues in terms of employability and use, among others. Likewise, certain academic institutions choose to introduce a series of coinciding resources in all their productions (slogans, bursts of images, headers, etc.) to highlight a common brand identity and a comprehensive corporate marketing strategy.

Considering the combined presence of the types of content that have been differentiated, only 15 videos (3.57%) incorporate all six. In 7 examples (1.66%) only reference is made to the subject matter, while in 78 (18.57%) only one other category of content is added: content (59/14.04%), advertising (12/2.85%), teaching (4/0.95%), methodology (2/0.47%), and operation (1/0.23%).

Finally, the variety of specific content that can be introduced is noteworthy: a test of prior knowledge; specifications on specific profiles at which it is aimed; definitions of concepts by way of a glossary; thanks to other institutions or people; summary of competences acquired on completion; interventions by lecturers or students contributing points of view; advertising of postgraduate or other courses; prizes or job opportunities; proposals for university-business collaboration; dissemination of results of research groups or projects; geographical scope; cliffhanger-type endings ("to be continued...") or conclusions in the form of questions to be answered in future videos, among others.

3.4. Analysis of Audiovisual Production

In the section on audiovisual resources and production techniques, the proposed analysis model is subdivided into three blocks. Firstly, the educational video format used is classified, differentiating between video lecture (on location or on a virtual set), television format (report or fictional) or animation video (Table 2); secondly, the use of titles/headers, key words on screen, or insertion of Power Point presentations is analysed; finally, the expressive resources used in the video are analysed, such as motion graphics, moving image, still image, music, or voice-over.

Table 2. Formats of the videos.

Format	Videos	%
Video lecture	372	88.57%
TV	57 (31 video lecture)	13.57%
Animation	21	5%

The video lecture is shown as the most used format: 372 productions (88.57%). This type of prototypical design of educational audiovisuals is basically characterised by the fact that it presents a teacher on screen, addressing the camera directly. In terms of staging, therefore, it is very similar to a face-to-face master class; however, it is notable for the large number of different specific manifestations, in terms of creative recording and post-production resources, which can be introduced into this usual general scheme. The video lesson combines the expository, verbal, and sequenced nature of the conventional classroom with a battery of audiovisual resources and techniques that modify and enrich its discourse, effectively adapting it to the current language of digital media: the different modalities of "YouTuber" styles, based on a character speaking without intermediation to viewers, or the use of videoconferencing procedures are two types of formats that set trends on virtual platforms and which, in various educational contexts, share narrative strategies, communicative intentions, and audiovisual production solutions with the video-classroom.

In second place are formats that contain elements of television origin (57 productions, 13.8%) such as dramatisations, spots, or reports. More than half of them, 31 pieces, also show features of video class (7.38%), so that, in addition to being included in the two previous sections, they indicate to what extent the videos analysed are closer to the classroom than to fictional, advertising, or informative television genres.

Finally, the animation format accounts for 21 videos (5%). Motion graphics or 2D or 3D animation have a clear didactic potential due to their ease of visually conveying specific content. Despite their relatively small weight in the sample as an exclusive genre, a large number of videos of the other two modalities introduce animated techniques extensively, as will be shown below.

In the video-classroom format, 210 pieces have been produced on virtual sets. These are productions recorded with a chroma key background that is replaced in post-production by various resources (3D environments, animated graphics, etc.), highlighting the idea that, starting from the classroom as the original reference point, visual effects technologies are used to significantly improve the narrative content and the visual quality of the videos.

A "sub-genre" with its own entity within this category of virtual set production is the use of Power Point or Keynote presentations. In other words, a background of slideshows such as those projected in a classroom. There were 90 of the 210 productions incorporating virtual scenography, 42.85%, transfer this visual resource typical of face-to-face teaching to the screen.

In terms of audiovisual resources and languages (Table 3), the first of these is the presence of still images: 154 pieces (36.67%) include some kind of photograph or illustration of a static nature. In today's media, the introduction of images without movement in an audiovisual montage is not considered suitable from an aesthetic point of view, unless these materials are animated in some way in post-production. Again, this is a translation of conventional didactic resources (textbook, slides, etc.) without taking full advantage of the dynamic possibilities of the medium.

Table 3. Audiovisual language resources.

Audiovisual Language	Video	%
Music	219	52.14%
Keywords	161	38.33%
Still Image	154	36.67%
Action Image	149	35.48%
Voice Over	117	27.86%
Motion Graphics	87	20.71%

Similarly, there is also a strong presence of videos with moving images (149 videos, 35.48% of the total). In this case, they are inserts, shots, or recorded resources that are added to the video lesson sequences.

The presence of motion graphics resources is lower. Only 87 videos (20.71%) include some kind of 2D or 3D animation, predominantly diagrams or simple visual compositions. On the other hand, the overprinting of labels with the name of the teacher (Lower Third) is more numerous: 230 videos include this text, 54.76% of the total.

Similarly, the use of keywords (text superimposed on the image to visually emphasize a concept on the screen) is found in 161 videos (38.33%). Of these, in 52 (32.30%) they are incorporated at a rhythm in keeping with the visual or sound content of the video, in 85 (52.80%) there are only a few key words highlighting fragments or specific motifs, and in 24 (14.91%), they are introduced with a much more accentuated frequency that makes them structure the verbal discourse almost exclusively around them.

Finally, in the sound section, music has been added to 219 videos (52.14%), while there is the presence of voice over (conventionally known as voice off) accompanying the images as audio narration in a total of 117 pieces (27.86%). The music (most of the compositions come from archive libraries) is used more as background music, as an almost automatic complement to the discourse of the image, than as soundtracks with technical-expressive, narrative, or emotional capacity. Similarly, the voice over is used with an informative or expository character (sometimes redundant with the graphic elements or with the image itself) rather than with a creative sense that explores the possibilities of locution to provide other meanings or anchors (complementarity, antithesis, etc.) to the discourse shown visually on screen.

A joint analysis of the audiovisual production resources listed leads to the following conclusions. Firstly, the use of these fundamental visual and sound elements of television narrative is somewhat scarce. With the exception of music, none of the techniques or resources mentioned are found in more than 50% of the pieces studied. The scarce use of animation or moving images is surprising, given that these two elements are so predominant in the contemporary audiovisual aesthetics of YouTube.

Secondly, the resources are mostly introduced in a subordinate way to the main discourse, which, as we have pointed out, largely follows the "theatrical" development of a class. The plastic and aural sensation is that still images, signs, or music are incorporated as additions, as complements, and sometimes as superfluous fillers not entirely congruent with the visual language of the main narrative thread.

In this sense, thirdly, a very weak aesthetic connection is detected between the resources found in the same piece: animated forms, archive images, or post-production decisions do not follow a coherent or complementary formal pattern between them, that is, the unity in intentions, developments and results expected of an audiovisual work is not perceived: in the same video, very varied styles of illustrations can be found, music not in accordance with the theme, several different typographies, or even editing techniques that respond to divergent or incoherent editing patterns.

Finally, if the use of audiovisual resources is meagre and not very homogeneous and integrated, many of the most important techniques of audiovisual language do not stand out either for their presence or for the concrete way of articulating them: the scale of shots, camera movements, or the potential of photography or music to tell a story are not used; nor is a narrative progression achieved through the use of the techniques and grammatical conventions of image and sound that allow the complete development of the sequences of a story to be detected.

However, it is worth highlighting a considerable number of particular pieces which, as prototypes or outstanding models, show the creative possibilities of the video presentation format, not only when it comes to using audiovisual resources and techniques with a professional finish, but even going a step further when it comes to innovating in the didactic field of this type of production. Namely, on the one hand, they introduce expressive codes and audiovisual production procedures from cinema or television, but on the other hand, they take advantage of the opportunities for visual and sound innovation offered by video teaching: the heterogeneous narrative and staging resources that allow a face-to-face class

enriched with texts or animations, an online forum energized by the community, or an interactive multimedia product, among others.

The analysis of these specific productions requires a different methodological approach to the one used in this work, one that focuses on the particular micro-analysis of the most outstanding elements of audiovisual content and form. A study based on the search for, comparison, and evaluation of the difference, beyond the common features or patterns that have been addressed in this research.

4. Discussion

The results of the analysis carried out highlight the potential of educational video for online learning due to its complexity, variety, and creative possibilities. Informing, educating, and entertaining are inseparable objectives of these audiovisual formats for MOOCs.

However, according to the research carried out, e-learning through video should be studied and criticized from a broader perspective that puts the use of audiovisual content for learning in context. That is to say, as this work has shown, most of the videos analysed follow writing and production guidelines that resemble the development of the staging of a conventional classroom lecture: there is a long way to go in order to generate content that does not merely attempt to transfer the language or structure of the classroom to the screen.

In this sense, two fundamental questions need to be considered: Are MOOCs effective and, consequently, do MOOCs, and online learning as a whole, have a future in university higher education?

Evaluating performance in MOOCs, as in this specific case at the Universidad Politécnica de Valencia [47], is therefore a fundamental task. Similarly, measuring the performance of each audiovisual piece, through metrics, surveys, etc., is an unavoidable challenge. Several studies address these core issues [48,49], with an emphasis on relating learning outcomes to new forms of audiovisual consumption.

The various sections studied in this research in terms of subject matter, structure, communicative strategy, or audiovisual production, show that the essential question to ask is whether a student who plays a video or enrols in a MOOC acquires the necessary competences [50] or, despite the feeling that they are learning, that they are being trained, they are not actually achieving the previously established learning objectives.

In this sense, a very interesting debate about the function of about videos opens up: Are these introductory videos representative of the rest of the videos of a particular course? As seen above, when they include didactic functions (anticipating the course content) or when they advance narrative or branding values. Although introductory or presentation videos do not have a direct didactic function, they are a fundamental component of the overall design of the MOOC, since they serve to illustrate to the student what the fundamental curricular components of the course are, and they are too a basic asset in the decision to take the course or not.

Moreover, in an increasingly complex and saturated space, these videos allow the course to stand out from the rest of the offer. Certainly, on many occasions, the videos respond to a design based on the logic of marketing messages, but this fulfils a basic function of differentiation, while, at the same time, allowing some fundamental elements of the narrative aesthetics of the rest of the course videos to be shown.

The COVID-19 pandemic and the subsequent explosion of e-learning [51] have only reinforced this idea. In this sense, video is a privileged medium for disseminating and sharing knowledge, but the MOOC, as an educational format that contains these audiovisual productions such as the about video, is giving way to other forms of online learning that are more open, less rigid and indebted to face-to-face courses, such as the content disseminated on social networks or the training materials that do not belong to formal education and that flood YouTube or Twitch channels.

The debate, therefore, should be about producing quality audiovisual content that truly disseminates educational and scientific knowledge and adds value to education,

rather than flooding face-to-face or online education with content that consumes students' time without providing them with systematic, deep, and long-lasting learning.

5. Conclusions

Teaching methods, using audiovisual content, are experiencing a clear boom due to the unstoppable development of learning society technologies. Whether as resources that form part of a MOOC, or as independent pieces shared on YouTube or social networks, educational video is reinventing itself both in the established academic contexts of higher education and in the heterogeneous paths of autonomous or self-managed learning.

The introductory video of MOOC courses on platforms such as Miríadax is an example of an audiovisual resource that articulates, in a relatively innovative way, several different types of audiovisual content and resources: video lectures, video notes, screencasts, videoconferences, reports, interviews, animations, and advertising spots. In this sense, their open and inclusive nature makes this type of production a remarkable vehicle for advertising the course (informing), providing valuable educational content for the student/viewer (training), introducing teaching into the audiovisual leisure universe we inhabit (entertaining), and communicating the brand values of the institution responsible for the project (advertising).

According to the analyses carried out, this type of format still has a long way to go from a didactic, narrative, and aesthetic point of view, but it is already possible to appreciate very satisfactory results in terms of offering an educational, communicative, and entertaining experience of manifest quality for the user. The use of the attention span of the student/viewer; the incorporation of the universal languages of image and sound to achieve significant and lasting learning results; the connection of audiovisual content with our daily routine of using computer or telephone devices or the possibility of sharing or reworking the materials in increasingly open academic contexts (virtual courses, university YouTube channels, social networks, etc.), are some of the potential advantages of these teaching resources.

Therefore, how should these audiovisual materials for e-learning be produced? Based on the analysis of trends in both content and discourse, an overview of the style of video currently being produced can be composed, but above all, there can be an open discussion about what kind of videos can be created in the near future: short pieces (around three minutes); less influenced by the staging of the explanatory lesson and closer to other genres such as animation or fiction; more heterogeneous in terms of content (introducing relevant information on methodologies or the functioning of the course); taking advantage of audiovisual narrative techniques (providing storytelling mechanisms in the plot structures, for example); that make use of more varied, current and, above all, aesthetically interrelated audiovisual production procedures in the editing and that take advantage of the opportunities offered by digital technologies in terms of free access, the creation of different versions depending on the devices used (productions for computers, mobile phones, television, etc.), dubbing or subtitling, etc., and the use of the latest technologies in the production process), the dubbing or subtitling of the same video in different languages, or the incorporation of multimedia, interactive, or collaborative elements.

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Information about Human Evolution: An Analysis of News Published in Communication Media in Spanish between 2015 and 2017

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Abstract: The present study examines a sample of 220 pieces of news related to human evolution, written in Spanish and published over a period of two years, both in digital and print media. The aim of this study is to assess the rigor and coherence of the information in the news in our sample with scientific knowledge on the theory of evolution. To this end, errors and the incorrect use of concepts related to biological evolution are identified, classified according to criteria resulting from the review of previous studies, and finally, the frequency of errors identified in news published in print media is compared with that identified in digital media. The results presented allow us to highlight the significantly high frequency of errors in the news analyzed and the most frequent error categories. Results are discussed within the frame of the important role that scientific journalism plays in the processes of knowledge dissemination, in this case, related to human evolution.

Keywords: science education; human evolution; communication media; Spanish media; science communication

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1. Introduction

The evolutionary theory lies at the core of current biological knowledge and allows us to make sense of biological diversity and its change over time [1]. Unsurprisingly, evolution education is worldwide pointed out as one of the crucial ingredients in the biology curriculum [2]. As a consequence, the examination of how people give meaning to evolutionary concepts is attracting increasing interest in the field of education [3,4], as well as in the area of public understanding of science [5,6].

On a separate but not unrelated issue, the influence that communication media has on shaping public opinion toward science-related issues has been widely recognized [7,8], along with the role that it plays as a source of learning [9,10]. This fact has inspired an increasing number of research projects with the objective of examining how mass media covers scientific knowledge on topics such as health [11,12], energy [13,14], technology [15], food and agriculture [16], and climate change [17], to mention just a few relevant examples.

In this context, significant research projects have also emerged to analyze media coverage related to the evolutionary theory, for instance, to examine the accuracy that media affords to evolutionary concepts [18], to study the influence that mass media has on the dissemination of Darwin-skeptic ideas, and to look into the impact that celebrities' claims have on shaping public opinion about evolution [19]. Nonetheless, little attention, if any, has been awarded to the analysis of the journalistic content linked to the issue of human evolution.

In this respect, it should be noted that the notion that the human being is not alien to the evolutionary theory is not a minor matter. On the contrary, it is an essential point of current biological understanding; firstly because it leads us to an in-depth grasp of human's nature, their culture, behavior, and multilevel social organization [20] and secondly because

current research indicates that a pedagogical emphasis on human examples is an effective procedure to teach essential notions of evolution [21].

In sum, considering together, on the one side, the significance of human evolution for comprehending evolutionary concepts and, on the other side, the crucial role that communication media plays as a driving force for understanding science, it seems certainly relevant to tackle the study of the information appearing in media related to human evolution, particularly due to the lack of previous research.

Accordingly, the present study examines the information that communication media in Spanish disseminated on the particular issue of human evolution over two years (2015–2017). More specifically, the objectives posited for the present research project are as follows:

1. To identify errors and inappropriate usages of scientific concepts linked to the topic of human evolution in the news texts consisted of the sample;
2. To classify the errors identified in accordance with the categories derived from previous research to analyze their prevalence and conclude the influence that these errors may have on the correct understanding of issues related to human evolution by the public;
3. In line with the methodological procedures that previous research employs to examine media information about evolutionary theory [18,22], this study will try to distinguish the pieces of news published in digital media and those published in print media in order to relate the errors detected with their publication source.

Ultimately, the present study seeks to provide evidence for the scientific community to assess the rigor of the news disseminated through the communication media regarding human evolution, which is information that might be useful to improve the processes of dissemination of scientific knowledge in our society.

2. Materials and Methods

2.1. Sample

A total of 220 pieces of news published in Spanish in different communication media between 1 December 2015 and 1 December 2017 were analyzed. The pieces of news were collected through the digital periodical library MyNews (https://www.mynews.es accessed on 1 December 2017), which offers press material from a wide range of communication media [23], especially within Spain [24]. In a language that presents so many communication media, the sample size became enormous in a relatively short time. A period that allowed the collection of a significant amount of news was delimited following the example of previous studies [11,18].

This platform "MyNews" is a digital search engine that returns a collection of PDF files in which the informative pieces that fit the search criteria are included. It has been previously used in investigations that conducted content analyses [25,26]. The procedure utilized to select the sample was initiated with the search of news by using the following combination of keywords and Boolean operators: evolution AND homo OR human OR man (in Spanish: evolución AND homo OR humano OR hombre). The result of this search yielded 599 pieces of news found in the analysis of 607 printed sources (491 newspapers and 116 magazines) and 795 digital information resources. Afterward, those pieces of news that were unrelated to the topic of human evolution were discarded. Moreover, only the latest release of the news items was included in the sample, when repeated versions of the same information were found. As a consequence, the final sample consisted of 220 pieces of news. Most of the news items came from Spanish media communication (80.9%). The remaining news pieces were from media in four Latin American countries—Argentina, Mexico, Chile, and Colombia.

The complete list of the pieces of news analyzed in the present study is available in the Supplementary Materials.

2.2. Study Variables and Coding Procedure

Each piece of news in the sample was coded according to the following variables:

(a) Accuracy of the news: nominal variable with two possible values: correct or incorrect. This group includes those pieces of news containing at least one error related to misconceptions associated with scientific knowledge on the theory of evolution;

(b) Number of mistakes per incorrect piece of news: discrete, continuous variable that can have an integer value starting from 1;

(c) Communication medium: nominal variable with two possible values—digital communication media or print media;

(d) Category of conceptual error: qualitative nominal variable referring to the ascription of the errors found in the sample to the categories of improper uses of scientific concepts about human evolution considered in the present study. Table 1 presents a description of each category, together with the most habitual incorrect uses in each category and the references of the studies where these types of conceptual errors are previously cited.

Table 1. Description of the categories of conceptual errors used for the analysis of improper uses of scientific concepts related to the theory of evolution. Together with this, the references of the studies used to substantiate the definition of each category are also indicated in the third column.

Category	Description	Types of Errors Associated with the Category
Linearity	Evolution as a one-way process, developed in one unequivocal sense toward the development of more evolved species.	References to missing links and evolutionary events circumscribed to very limited geographical contexts [27]. Reference to a radical species extinction with the purpose of giving room to other more modern species [28]. Reference to the existence of more advanced or evolved species.
Finalist	Evolution pursues an ultimate aim or purpose, providing evolutionary changes with intentionality.	Reference to supposed benefits, aims, or aspirations guiding evolutionary processes [29,30]. References to an alleged intentionality of biological functions [30,31]. Mention of the existence of a plan, design, or project seeking the best-adapted individuals [32]. References relating evolution with adaptations of specific individuals within the species, disregarding the concept of population [33]. Evoking individual phenotypical characteristics as if these were inheritable per se, independently from their genetic basis [27]. Statements that suggest that certain phenotypical traits are lost due to lack of use or function [34].
Anthropocentric	The human being as the end and objective of evolution. Evolutionary processes are justified by the sole existence of human beings and present these as the ultimate purpose of evolution.	References to the fact the human beings are the object of evolutionary processes [35]. Arguments that justify the evolutionary changes based on the existence of human beings. Statements implying that the natural environment and the changes taking place in it are subordinated to and at the service of human beings [36,37].
Conceptual errors	Incorrect use of biological concepts and notions with the goal of explaining evolutionary changes.	Taxonomic mistakes when explaining phylogenetic relations of humans with other species, including errors such as describing Homo sapiens as apes and not as hominids. Statements attributing evolutionary capacities to certain organs, such as the brain. References to social conducts and habits as inheritable. Overestimating the role of random processes in biological evolution [27,28].

Table 1. *Cont.*

Category	Description	Types of Errors Associated with the Category
Human race	Use of the term race as a synonym of species and/or with the goal of dividing human groups on the basis of certain hereditary characteristics	Explicit mention of the existence of races or subspecies within the Homo sapiens species [38]. References to the human race instead of the human genus [39].
Science fiction	Speculation about future scenarios in which certain evolutionary changes, consequences of scientific or technical development, or human activity in the environment are considered inexorable.	Statements extrapolating the current knowledge related to evolutionary processes to future scenarios, often predicting catastrophes, extinctions, or radical changes in the biological environment with no scientific evidence [40,41]. Unreal descriptions of changes in living beings or their biological environment as a consequence of scientific and technical development [42,43]. Fantasy explanations of future evolutionary processes
Other errors	Errors not classifiable within the previous categories.	Excessive interpretations lacking a theoretical basis or abusive simplifications [44].

2.3. Analysis Procedure of the Pieces of News

The pieces of news in the sample were examined according to the variables mentioned above. To this end, the seven categories of conceptual errors presented in Table 1 were first established using a bibliographical revision. The investigations that were followed to develop the set of categories are those cited in the third column of Table 1. Later, two members of the research team (a doctor in Zoology and a teacher with a specialization in science education) jointly classified 20% of the pieces of news in the sample.

Then, both researchers completed the error classification of the remaining pieces of news in the sample independently, and finally, the level of agreement between the resulting classifications was analyzed. It is worth noting that in relation to the cases where various errors belonging to the same category were identified in the same piece of news, these counted as one per category.

2.4. Statistical Procedures

The study of the level of concordance between the two researchers who assessed the errors detected in the pieces of news that make up the sample was carried out using Cohen's kappa coefficient [45]. Furthermore, the differences between nominal variables were tested using the Chi-square test, estimating the effect size by Cramer's V [46,47]. The level of significance considered in the study is 0.05, and statistical procedures were carried out using a spreadsheet.

3. Results

The results of the present research project are presented below in two sections. In one section, the analysis of errors detected for the whole sample, with a detail of the frequencies for each of the seven error categories considered in this study is presented. In the other section, the study of the proportion of pieces of news with errors, together with the possible relationship existing between the frequency of pieces of news with errors and the type of communication medium, is shown.

3.1. Review of Errors Found in the Entire Set of News Pieces in the Sample

A total of 448 incorrect uses of scientific concepts related to the evolution of human beings were found in all 220 pieces of news comprising the sample analyzed. Table 2 presents an overview of illustrative examples found in the pieces of news for each one of all seven error categories, together with the relative frequency of each category, compared to the total errors, and the level of concordance between the two reviewers (Cohen's kappa coefficient).

Table 2. Illustrative cases of errors corresponding to each category, along with the relative frequency of cases classified in the error categories (n = 448). The last column shows the level of agreement between the two reviewers of the pieces of news (Cohen's kappa).

Category	Case Examples	%	*k*
Linearity	"In this way, Piltdown, and transitively the island, was transformed into the cradle of humankind" [48]. "The human being went from being a vulgar ape to dominating the rest of the natural world. On its way to the summit of the Universe, it invented gods, nations and limited companies." [49]. "They had descended from walking apes, who eventually evolved into more advanced human beings" [50].	19	0.95
Finalist	"Our ancestors didn't eat meat, [. . .] As they had too much intestine, they gradually lost it, which allowed more energy for the brain to grow" [51]. "To address the lack of resources and premature deaths, the pygmies' bodies developed faster and are smaller" [52]. "Our body is designed to ingest sugar and fat, this meant survival in the past" [53].	23.2	0.99
Anthropocentric	"It does not add up for such primitive beings: this behaviour is supposed to be restricted to more advanced species, such as modern humans and Neanderthals" [54]. "This circumstance would imply an important challenge for homo sapiens, who would have to control their own creation and ultimately ensure the species' survival." [55]. "Humans are not so exposed to natural selection anymore, but this is an anomaly in the species' story." [52].	19.2	0.97
Conceptual errors	"20.000 years ago there were five species of hominids on the planet; today there is one, Homo sapiens." [56]. "We are almost the same as the Cro-Magnon and Homo sapiens, genetically there is no difference" [57]. "Indeed, evolution had until now been random" [58]. "Evolution depends on two fundamental aspects: mutations in the genes and environmental changes. Human beings will continue to experience mutations and most of these will make individuals non-viable", the scientist asserts." [59] "Cavemen beat their own kind to death, as much as great apes did, therefore it is very likely that we have inherited this violent conduct from our common ancestors throughout evolution." [60]	22.1	0.95
Race	"The Ramapithecus, who became extinct about 8 million years ago, but left the genetic seed of our current human races." [61] "Greed and ambition are represented in the creation of global empires with white man predominating as the superior race." [62] "This illustration of the evolutionary stages from primate to Homo sapiens appears from it, therefore a black man is little more than a macaque." [63]	2.5	0.99
Science fiction	"In the same way that the triumph of Homo sapiens entailed the extinction of Neanderthals, the success of Robo sapiens will mean an evolutionary leap and will make the current human being obsolete." [52] "...like with the creation of machine-men: hybrids that will give way to Homo sapiens 2.0 in the perspective of replacing man for a robot." [48] "Scientific and technological advances have allowed humans to escape the effects of natural selection." [64]	11.8	0.98
Other errors	"Smartphones make us millions of times more intelligent than humans of just 20 years ago." [65] "Scientists can quickly, cheaply and surprisingly precisely fix nature's grammatical errors." [66]	2.2	0.83

3.2. Review of the News Comprised in the Sample

With regard to the analysis of the proportion of news with concept misuses, 79.1% (n = 174) of pieces of news composing our sample presented at least one conceptual error in discussing notions linked to the evolution of human beings. Among these pieces of

news with errors, 51.7% (n = 90) had two or three errors, and 24.1% (n = 42) presented four errors or more. None of the pieces of news analyzed presented more than six errors.

Besides that, 67.7% of the entire 220 pieces of news were published in digital media and 32.3% in print media (newspapers and magazines). Among the pieces of news published in digital media, 77.2% (n = 115) had at least one information error and presented 2.6 errors per piece of news on average. In the case of print media news, at least one error was found in 83.1% of them, and the average was 2.5 errors per piece of news. The differences between digital and print media regarding the presence of incorrect pieces of news were not significant (χ^2 = (4, n = 220; $p < 0.1$) = 1.12), and the effect size of the comparison indicated a weak association between variables (V de Cramer = 0.07).

4. Discussion and Conclusions

The media have an essential educational role [10,67], especially in the field of science, since once formal education is completed, the public acquires new scientific knowledge mainly through the media [68,69]. Therefore, to fight the spread of scientific misinformation, rigorous content must be shared with the public [70]. As a consequence, studying the rigor of communication media in disseminating scientific knowledge is a matter of undeniable social relevance [11,18,71]. In this sense, research studies have been carried out aimed at analyzing the properness of information disseminated by communication media with scientific knowledge [72] in matters such as climate change [17], energy [13,14], and food and agriculture [16]. However, research examining the rigor of journalistic dissemination of scientific knowledge with regard to human evolution happens to be much less frequent, in spite of the influence that the media news may have on this area of knowledge in particular.

In this context, the present research studies information published in 220 pieces of news in digital and print communication media in Spanish, between the end of 2015 and the end of 2017 about biological evolution, with the aim of assessing the level of consistency with scientific knowledge.

The evidence presented is structured around three aspects: error frequency in the pieces of news, the categories of errors found, and the relationship between these and the type of medium.

With regard to the first aspect, almost 8 out of 10 pieces of news analyzed showed at least one error in the information they disseminate on human evolution, and among these, three out of four presented two or more errors. The significant prevalence of errors in the news examined is consistent with the persistence of errors linked to the comprehension of evolutionary processes [27], on the one hand, and, on the other, with the significantly high rate of confusion or inaccuracies that can be found in the information that media spread about scientific and technical matters [73].

With regard to the types of errors observed in the pieces of news analyzed, the most frequent happened to be either those referring to the supposed intentionality or purpose of evolution (finalist category), or those making a mistaken use of biological concepts with the aim of explaining evolutionary changes (category of conceptual errors). This tendency is consistent with the results presented by previous research analyzing the presence of finalist-type understandings related to the evolutionary processes [29] and also with studies examining conceptual errors related to the theory of evolution [28].

Moreover, almost 2 out of 10 errors presented assertions that induce readers to think that human beings are the ultimate end of evolution (category of anthropocentric errors), which is a fact that concurs with previous studies revealing a tendency to give human characteristics and even shape to natural processes during initial stages of comprehension [74].

Mistaken expressions suggesting that evolution is a one-way process toward the development of more perfect species appeared with a similar frequency (errors included in the category linearity). This frequency is similar in previous studies [27,34].

The errors linked to fictitious scenarios as in consonance with scientific evidence on the evolution of humankind (category Science fiction) showed a lower prevalence than the previous categories, but were still relevant, as they implied slightly over 1 out of

10 errors found in the sample. Previous studies also indicate an increasing tendency in the appearance of these types of contents, precisely for their simplicity and for being effectively suggestive [42,75].

With regard to the frequency of errors related to the use of the concept of race, it was certainly lower than the frequency for other categories. However, the qualitative importance that this type of error represents cannot go unmentioned [76,77], nor can the gravity of the errors in some of the evidence found in the sample. Thus, it is relevant to underline the role that communication media should play in avoiding the propagation of conceptual errors, such as using the term "race" to refer to phenotypical variations in the human being that can contribute to the persistence of beliefs with no scientific basis but with important social-type implications.

Finally, regarding the differences found among media, the percentage of correct pieces of news were higher in the case of digital media, compared to print media (22.8% compared to 16.9%), and the frequency of pieces of news with only one mistake was lower in digital platforms (16.8% in digital media, compared to 24% in print media). These differences, however, did not seem to be significant in the sample analyzed, which reinforces the idea that there is uniformity among the contents of both types of media. These observations seem to be in line with the case made in previous studies, in the sense that digital news has its origin in the traditional print press news [78].

To sum up, this set of evidence indicates that the pieces of news analyzed have ample room for improvement regarding the information they communicate about evolutionary processes related to human beings. However, the need to complete the observations in this study with new research that can confirm or disprove the tendencies observed in this research project cannot go unmentioned. To accomplish this task, research studies should be carried out with samples from different contexts, including different language and cultural contexts, a line of research that can help avoid impaired quality in the research disseminated by scientific journalism [79,80]. In addition, this paper omits the analysis of the connection between the journalistic genres and the occurrence of conceptual errors in the news about human evolution, which is an issue that further research should ponder for its examination.

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Fake News Reaching Young People on Social Networks: Distrust Challenging Media Literacy

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Abstract: Current societies are based on huge flows of information and knowledge circulating on the Internet, created not only by traditional means but by all kinds of users becoming producers, which leads to fake news and misinformation. This situation has been exacerbated by the pandemic to an unprecedented extent through social media, with special concern among young people. This study aims to provide significant data about the youngest generation in Spain (Generation Z) regarding their media and information consumption, their social network use, and their relationship with fake news, all in relation to the feeling of reliability/trust. Focusing on a convenience sample of 408 young Spanish students from Generation Z aged 18 to 22, a descriptive exploratory study is presented. Data collection was performed with an adapted questionnaire. Results show that young Spanish people use networks for information, showing a surprising lack of trust in social networks as the media they consume the most. The content they consume the most since the occurrence of COVID-19 is related to politics, entertainment, humor, and music. On the other hand, distrust of politicians, media, and journalists is evident. The conclusion is that media literacy is still more necessary than ever, but with the added challenge of mistrust: maybe it is time to rethink media literacy.

Keywords: misinformation; fake news; social media; media; consumption; Generation Z; young people; media literacy

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1. Introduction

Since COVID-19 was first detected in December 2019 in Wuhan (China), the entire world has struggled with an unprecedented crisis affecting all orders of human life: social relations, economy, labor market, industry, entertainment, journalism, and education [1,2]. Economies around the world have been affected, and stock markets in all countries have suffered losses. In this situation of precariousness and uncertainty, the need for information is growing disproportionately and is overwhelmed by an exponential growth of different types of disinformation flooding the networks. It is generally accepted that this situation has exacerbated existing problems related to misinformation and fake news, with a new phenomenon developing that the World Health Organization (WHO) has called an "infodemic" [3]. Current societies are based on huge flows of information and knowledge circulating on the Internet, created not only by traditional means (media communication) but by all users becoming producers [4,5]. Since social networks emerged at the beginning of the present century, the status of information and knowledge has been transformed, experiencing a remarkable change that has implied a wider online environment enhanced by all users. This new information ecosystem [6,7], providing more freedom in a communicational manner, has presented from the beginning a major problem: allowing people to spread misinformation without surveillance has promoted an information disorder that is difficult to manage and control [8,9]. The implications of these changes can be highlighted from two different perspectives: (1) referring to democratic societies in terms of trust not only in politicians and institutions but also in media and journalism [10] and (2) in terms of digital literacy necessities that have arisen from media literacy, since the high-speed

information free-for-all on social media platforms and on the Internet has emerged as the main environment for information to circulate [11]. On one hand, the first issue demands specific actions from policy-makers and media outlets trying to fix the problem, firstly through new regulations and secondly through the practice of trustworthy media discourses engaging citizens in order to tackle distrust and democracy erosion [12]. On the other hand, focusing on audiences/citizens, it seems important, more than ever, to provide them with the suitable digital literacy that enables people to interpret and evaluate received information.

Besides this framework, of an intensive spreading of information on social networks, whether it is trustworthy or not, it is important to note a generational aspect: the youngest generations find their natural habitat in social media. Social networks have emerged as the prevailing setting for socialization, information, and entertainment, including education [13]. Their proliferation among the youngest population emerges as an unprecedented social phenomenon (penetration data), so the problems arising from the growth of misinformation and the lack of adequate digital literacy are further accentuated among this population, which spends most of its time interacting on social networks [14].

This framework justifies the main objective of the presented research: to provide significant data about the youngest generation in Spain (Generation Z) concerning their media and information consumption, their social network use, and their relationship with fake news, all in relation to the feeling of reliability. The research aims to contribute from a media literacy training perspective and a media transformation perspective, both contributing to tackling the challenge of misinformation undermining democracy.

2. State of the Art

2.1. Fake News, Infodemic, Media, and Social Media

The concept of fake news itself is nothing new; as Burkhardt wrote in 2017 [15] (p. 5), "the ability to have an impact on what people know is an asset that has been prized for many centuries". The particular issue regarding fake news in the 21st century is the large possibility of impact and spread offered by social networks. This phenomenon has been defined using different terms and from different perspectives: fake news, misinformation, information disorder, disinformation, and post-truth. The European Commission [16] defined the word "disinformation" as "false, inaccurate, or misleading information, presented and promoted to obtain revenue or intentionally cause public harm", while other authors [17] point out that "fake news" has been chosen as word of the year in British dictionaries such as Collins and Oxford, which define it as false, often sensationalist, information disseminated under the guise of news. The proliferation of this type of news is a problem that affects all citizens, but particularly young Spaniards, who tend to rely on social networks to keep themselves informed, as indicated by Mendiguren, Pérez-Dasilva, and Meso-Ayerdi [18].

On 31 March 2020, the Director-General of the World Health Organization (WHO), Tedros Adhanom Ghebreyesus, stated "we're not just fighting an epidemic; we're fighting an infodemic" [19], referring to news that spreads more easily and faster than the virus. Although this phenomenon has usually been linked to misinformation, the concept indeed has a wider scope. The WHO has defined "infodemic" as "an excessive amount of information about a problem, which makes it more difficult to identify a solution". The WHO's definition outlines one of the major problems of misinformation: an excessive amount of information, true or false, that is all equally reachable. Social networks have frequently raised the level of noise, and in this sense, some studies point out that in critical situations such as the current one, traditional media offer more trust and credibility [8], although new digital media provide a more rapid response to information queries. The digital media in which we are immersed have allowed any citizen to become a speaker of current affairs, due to the great ease with which users generate and distribute content on different platforms as previously studied by Adoni et al. [20]. The traditional media are no longer the only channel for obtaining information [21]; social networks have become

perfect ally for users to quickly find the useful information they need. The consolidation of the Internet and the incorporation of social networks have even modified the traditional agenda-setting theory where the media were the only ones to select the most important news of each day [22]. In the new digital environment, social media have entered the scene, and Facebook, Twitter, or Instagram determine, in many cases, the rundown of a news item or the page composition of a newspaper.

In this sense, social networks, due to their horizontal, multidirectional, simultaneous, and unfiltered nature, pose a challenge for the traditional media, as there are now more actors capable of producing and disseminating content. For the first time in history, journalists and citizens have the same tools at their disposal [13,14,22].

According to Nielsen et al.'s report [1] from 1 January 2020 to 7 June 2020, the Spanish media published 1,138,364 news items, 90.4% of which were published during the months of March, April, and May. Faced with such an avalanche of information, a confused and anxious society is generated, where citizens were forced to set filters that allowed them to access a volume of content that was more digestible for them. However, these same filters also make them potentially more vulnerable to misinformation [23,24]. Public broadcasters were quick to provide a full schedule of content on the pandemic crisis, which translated into public trust. The International Fact-Checkers Network (IFCN) verified more than 6000 fake news during this period [25], acknowledging that the biggest problem for users was that they did not realize they were consuming or sharing fake news. In this regard, a research study from the Washington Post, the New York Center for Social media and Politics, and the Stanford Cyber Policy Center confirmed that readers had difficulties identifying if news content was true or false [26].

2.2. Focusing on Generation Z

In this framework, the previously described media consumption seems a relevant issue, focusing on the youngest, who are considered the population more exposed to digital media [4]. Generation Z, also known by different names (centennials, post-millenials, iGen, Gen Zers) has been the subject of growing interest for some time now, mainly because it is considered the authentically digital generation given that it was the first to be born in a fully developed technological environment. This population niche is composed of young people born between the mid-1990s and the early years of this century, although demographers, sociologists, and academics do not quite agree on the years that this generation exactly comprises.

This generation shares many similarities with the so-called millennials (born between the early 1980s and the mid-1990s). Both generations are part of globalization and the dawn of the digital society. They also share the massive use of devices connected to the Internet, which has affected the way they learn and access knowledge [11,27]. However, there are differences between the two generations derived from the socio-economic context and technological advances in which they were born and socialized [28]; changes that, according to published studies, are affecting the perception of the environment, the prevalence of certain values and their relationship with work. Regarding the differences between millennials and centennials derived from the technological context, research points to the explosion of the Internet, which occurred in 1994, as a milestone separating the two generations, as it transformed the practices of digital interaction. There was an exponential increase in the number of information sources, and a more flexible, shared, and mobile organization and transmission of information. Millennials saw the birth of social networks and some of them came of age during this period, so they are considered the first digital migrants [14]. Generation Z, on the other hand, have never known a world without social networks and in which mobile connectivity is the order of the day (recall that the iPhone was launched in 2007). They are therefore young people "shaped" by these new communication technologies and with the capacity to orient their use towards innovation and the design of their professional lives.

Therefore, the Generation Z is the first generation to have been radically affected by digitalization [29], to the point that, according to Isaac Lee, president of Univision News, it has affected them more than cultural, identity, race, or language aspects, which, on the other hand, makes them the most homogeneous generation of the modern era [30]. They lack a pre-smartphone memory, are on social media more constantly [31], and have had Internet 2.0 technology embedded into their lives. Deliberately false information (fake news) is in itself a source of permanent concern as it is rapidly and extensively disseminated due to the strategy of provoking responses of indignation, fear, and surprise. However, it is of particular concern in the case of young people; on the one hand, because they are the most vulnerable and most exposed to social networks, where this type of information circulates unchecked; on the other, because media literacy is part of the educational curriculum for young people. Many publications have dealt with this issue [18,32,33].

2.3. UNESCO Media Literacy Response

The United Nations Educational, Scientific, and Cultural Organization, generally known as UNESCO, has been a pioneer in expanding and developing media literacy and media education as a key issue in current societies. From the Gründwald Declaration (1982), where the main framework was established, and then the Alexandria Declaration (2005), which implied a systematization and more precise definition, through the Conference in Vienna (1999), which considered the digital advances and the new communicative era and, to the UNESCO Paris Agenda (2007), the UNESCO has been a pathfinder to media literacy [34,35]. In 2008, the organization presented the ICT Competency Framework for Teachers focusing on ICT in Education as the result of the "mainstream rollout of computers in schools", introducing Technology Literacy as an essential stage of teacher development [35]. After that, in 2011, UNESCO went further with the AMI Curriculum, combining media and information literacy as prerequisites in the Networked Society for all citizens, but focusing on teachers as leaders in media education. The framework established in the AMI Curriculum introduced nine core indicators to be developed from five key elements:

- Understand the role and functions of media and information in democratic societies.
- Understand and access media contents and their uses, in terms of consumption.
- Critically evaluate media content in the light of media reliability.
- Engage with media for self-expression and democratic participation.
- Review skills (including ICTs) needed to produce user-generated content

From the perspective of media and fake news, UNESCO provided a holistic view of the different developments of misinformation with their International Programme for the Development of Communication (IPDC) "encouraging optimum performance and self-regulation by journalists, as an alternative to the risks of having state intervention to deal with perceived problems in the freedom of expression realm" [36] (p. 11). Earlier in 2007, UNESCO published the "Model Curriculum on Journalism Education" and disseminated it worldwide in nine languages. This general concern continued in the publications from 2013, "Model Curriculum for Journalism Education: A Compendium of new Syllabus" and in 2015, "Teaching Journalism for Sustainable Development: New Syllabi". Since 2015, the UNESCO asked media outlets and journalism to be aware in adapting discourses to the new era, being able to [36] (p. 108):

1. Understand how social media have affected the role and profile of journalism.
2. Understand how social media have changed the process of news production and dissemination and the relationship between journalism and audiences.
3. Explore new business and entrepreneurial models for media industries.
4. Discuss ethical challenges and considerations within this new media ecosystem.

Bringing together this state of affairs, we find the context for our study: the "infodemic phenomenon" and the intensive use of social networks by young people. This study is focused on providing significant data on media consumption, social network use, and fake

news relationships associated with media reliability of the Generation Z. In this regard, the following research objectives (RO) were addressed according to the media literacy key elements established by the UNESCO:

- RO1. Determine young Spaniard´s media and information access and consumption
- RO2. Describe media and social media habits in order to discover good or bad practices.
- RO3. Analyze the level of reliability awarded to media by this population.
- RO4. Outline the Spanish young´s relationship with fake news in terms of reception, distinction, and perception.

3. Materials and Methods

3.1. Study Design: Variables of Study and Instrument

To answer the research objectives, a quantitative, descriptive, and exploratory methodology was chosen. Data gathering was arranged with the design of an instrument adapted from the report *Media Use in the European Union* [37] and *Digital News Report.es 2020* [38], both focused on media and social media consumption and fake news. The questionnaire was considered as the most appropriate ad hoc design-adapted tool to collect the necessary study variables [39] using the Google Forms tool for this purpose. The definition of the study variables was based on three research constructs related to research questions and according to the previous study by Couldry, Livingstone, and Markha [40]: (1) media consumption, (2) consumption of social networks, and (3) disinformation and fake news. The final questionnaire was the result of a twofold process: (1) first, the team designed an adapted questionnaire in which four different blocks were established: (a) sociodemographic variables, (b) variables related to media consumption, (c) variables related to social network consumption, and (d) variables related to disinformation and fake news (see Table 1); and (2) second, it was sent to a panel of experts for validation (n = 5) in an attempt to seek internal coherence and clarity for the studied constructs. After this phase, in which seven items were eliminated and eight were rewritten, the questionnaire comprised 81 items organized into the abovementioned constructs. The distribution tool for the questionnaire was Google Forms, and consent was collected from each individual before the survey was freely taken.

Table 1. Study constructs, variables, and number of items. Own elaboration.

Study Constructs and Research Objectives (RO)	Variables of Study	Number of Items
C1. Media and information consumption (RO1 and RO3)	V_1. Source of information	8
	V_2. Reliability on sources	8
	V_3. Media type	5
	V_4. Since COVID-19 information consumed	8
	V_5. Average time	1
C2. Social media consumption (RO2)	V_6. Social media used	8
	V_7. Level of engagement	1
	V_8. Favorite social media	7
	V_9. Since COVID-19 information received	8
C3. Misinformation and fake news (RO4)	V_{10}. Fake news reception and distinction	2
	V_{11}. Content more related to fake news	8
	V_{12}. Media spreading more fake news	8
	V_{13}. Source reliability	6

Regarding the type of variables used, it is important to note that all of them were qualitative and categorical, divided into ordinal and nominal ones. The ordinal ones were designed with a Likert scale, with a range of responses from 1 to 5, where 1 means "none or never" and 5 means "always, all, absolutely, or constantly". The statistical analysis was descriptive, based on frequencies and percentages, and conducted with the SPSS package version 24. The internal consistency of the test had a high/good reliability with a Cronbach's Alpha of 0.911, 0.831, and 0.802, respectively, for each construct of the study.

According to Vilches [39], when the Alpha coefficient is >0.90, we can say that the reliability of the instrument is excellent, and if it is >0.80, we can say that it is good.

3.2. Sample

The sample, conceived as the set of elements of the population that are asked to participate in the investigation [39], corresponded to undergraduate students from different parts of Spain as shown in Figure 1. The study did not intend to be representative; thus, the snowball sampling technique was applied, achieving a total sample of 408 students aged between 18 and 22 years old (M = 20.94; SD = 3.28). The sample composition was as follows: 30.9% of the sample (N = 126) was male, and 69.1% (N = 282) was female. The distribution was as follows in Figure 1, with most of the sample being from Madrid (N = 145; 35.3%), Valencian Community (N = 60; 14.7%), and Cantabria (N = 56 13.7%).

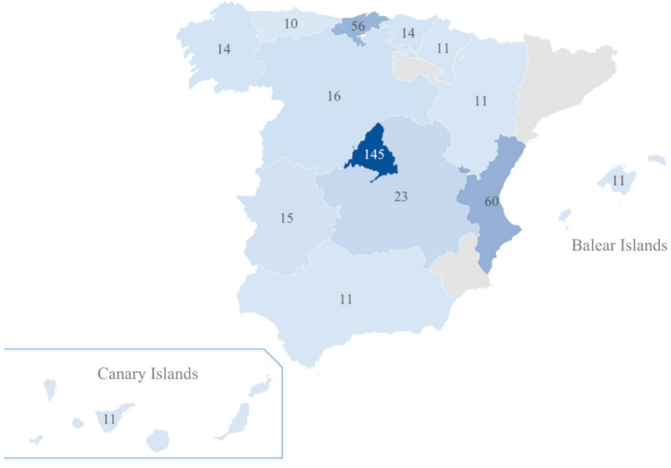

Figure 1. Sample frequency distribution. Own elaboration.

The non-probabilistic snowball method used for the sample selection was considered the most suitable for only reaching individuals from Generation Z [41]. The current pandemic situation due to COVID-19, in which the researchers had no possibility of mobility and the students attended schools from home, made this technique the most suitable one. The results were taken from November 2020 to February 2021. It is important to note that the nature of the study, descriptive and merely observational, was appropriate as well, taking into account that no sampling error could be determined and no inferences could be performed from this sampling. However, in order to guarantee the quality of the descriptive research design, the appropriate steps were taken as explained in the previous section.

4. Results

The results will now be examined to answer research objectives, corresponding to the three different constructs of study. It is important to note that due to the number of data gathered within the 81 items, only some of the results obtained were analyzed. To present the descriptive analysis results, the data distribution, means, standard derivation, frequencies, boxplots, and crosstabs are used to show the results of the descriptive-explorative study.

4.1. Media and Information Consumption

The results found for the first construct of study—media and information consumption—corresponding to four different variables and 29 items in our study, are presented partially

with V_1 and V_2. The variables were qualitative, categorical, and ordinal with a Likert scale, as can be observed in the following tables. Table 2 shows the results for V_1: "I usually get informed with . . . ", where eight different media could be chosen: radio receiver, online radio, press, digital press, TV set, online TV, webpages, and social networks.

Table 2. Basic statistics for media normally consume to be informed by Generation Z. Own elaboration.

I Usually Get Informed with . . .	Mean	DT	Never	A Little	Occasionally	Frequently	Always	N
Radio	1.71	0.877	50.5	34.3	10.3	3.9	1	408
Online radio	1.58	0.855	61.5	23.8	10.3	4.2	0.2	408
Press	1.79	0.896	46.8	33.3	14.7	4.7	0.5	408
Digital press	3.42	1.083	4.7	14.5	32.6	30.4	17.9	408
TV	3.5	1.145	5.6	14.5	25.7	32.6	21.6	408
Online TV	2.2	1.23	39.2	23.3	21.6	9.8	6.1	408
Web pages	3.62	1.04	3.9	9.6	27.7	38	20.8	408
Social networks	4.25	0.961	1.7	4.2	13.7	27.7	52.7	408

The results for the first variable showed us the first insights about media consumption of the Generation Z, with larger differences found for the radio, with a percentage of 50.5 (M = 1.71; DT = 0.877), and the students declaring never getting information from this medium. The same was found for online radio, with a percentage of 61.5 (M = 1.58; DT = 0.855) of the participants; the press, with a percentage of 46.8; and online TV, with 39.2% (M = 2.2; DT = 1.23) of the sample never getting information from it. The opposite was found for the consumption of digital press, reaching 48.3% (M = 3.42; DT = 1.083), in which respondents stated that they frequently or always obtained information from this media; the same was found for webpages, with a percentage of 58.8 (M = 3.62; DT = 1.04) and social media with the highest percentage, 80.4 (M = 4.25; DT = 0.961). It is worth noting that the TV was the only traditional medium that was still utilized by young audiences. In this regard, we found that 54.2% (M = 3.5; DT = 1.145) of our sample declared that they frequently or always used it to become informed.

The second variable analyzed in this construct of study was related to the reliability of the media used to become informed. As shown in Table 3, the results were opposite from the results for the first variable.

Table 3. Basic statistics for reliability perception in media consumed by Generation Z. Own elaboration.

Perceived Reliability of . . .	Mean	DT	Never	A Little	Occasionally	Frequently	Always	N
Radio	3.46	0.823	1	12.3	32.4	48.3	6.1	408
Online radio	3.26	0.798	1.5	15.2	41.2	39.7	2.5	408
Press	3.59	0.879	1	11	28.4	47.1	12.5	408
Digital press	3.35	0.868	1.2	15	39.2	37	7.6	408
TV	3.28	0.976	3.2	19.9	31.1	37.7	8.1	408
Online TV	3.04	0.942	4.9	23.5	38.5	28.9	4.2	408
Web pages	2.66	0.831	4.7	41.4	38.7	13.5	1.7	408
Social networks	2.41	0.862	11.8	47.3	31.1	8.1	1.7	408

The data obtained for this variable showed that the media that was more appealing to the Generation Z were indeed those which they considered to be less reliable. As shown in Table 2, more than a half of the sample considered the radio (54.4%; M = 3.46; DT = 0.823) and press (59.6%; M = 3.59; DT = 0.879) to be frequently or always reliable media, followed by the TV (45.8%; M = 3.28; DT = 0.976), digital press (44.6%; M = 3.35; DT = 0.868), online radio (42.2%; M = 3.26; DT = 0.798), and online TV (33.1%; M = 3.04; DT = 0.942). Lower rates of reliability were found in the most consumed media by the Generation Z: webpages and social networks. Only 15.2% (M = 2.66; DT = 0.831) and 9.8% (M = 2.41; DT = 0.862), respectively, perceived these media as reliable, with these results being certainly surprising, taking into account these were the most used for being informed. If we address these two

variables together in a graphical distribution, the results are very interesting as shown in Figure 2.

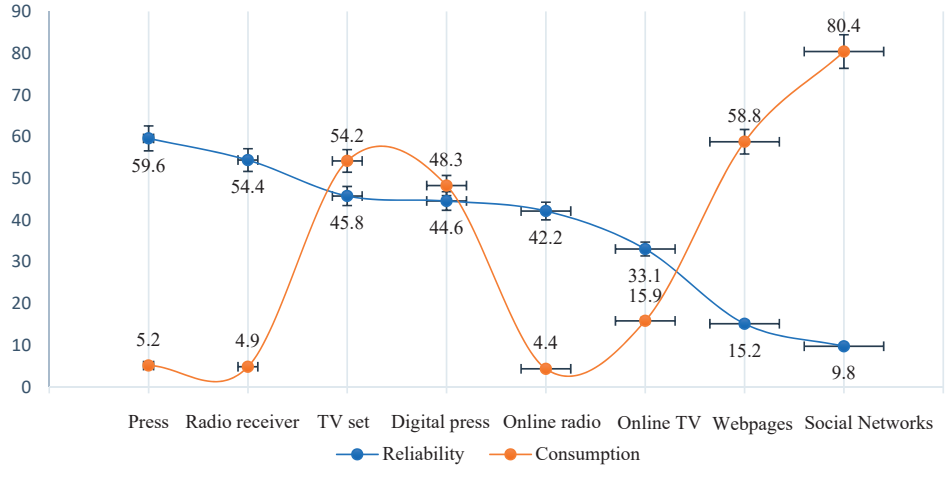

Figure 2. Graphical distribution for media consumption and media reliability for Generation Z. Own elaboration.

It can be observed that the less consumed media—the press, radio, and online radio—were perceived as the most reliable, and on the contrary, the most consumed media (webpages and social networks) seemed to be perceived as the least reliable media. To complete an analysis of the media consumption results, it makes sense to ask our sample which kind of information they preferred to become informed about, as observed in Figure 3.

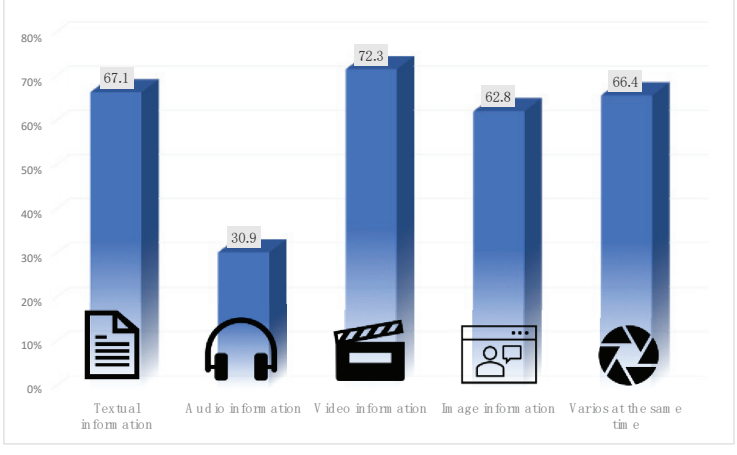

Figure 3. Graphical percentages for preferences in data types for information consumption. Own elaboration.

The last variable in the first construct was related to what kind of information was more consumed since the COVID-19 pandemic began. The results are as shown in Table 4, as follows.

Table 4. Basic statistics for (V_4): what kind of information have consumed the most since COVID-19 occurred? Own elaboration.

	Mean	DT	Never	A Little	Occasionally	Frequently	Always	N
Healthcare	3.43	1.162	4.4	19.4	27.3	26.5	22.4	408
Alternative medicine and self-help	2.45	1.163	21.6	38.6	19.7	13.5	6.6	408
Politics	4.09	1.016	2.2	5.4	18	30.3	44.1	408
Entertainment and Culture	3.15	1.224	7.9	27	24.8	22.6	17.7	408
Food and care	2.86	1.134	12.3	29	26.3	25.8	6.6	408
Sports	2.88	1.221	15	25.3	27.3	21.6	10.8	408
Sexuality and privacy	2.2	1.065	28.7	38.8	20.4	8.1	3.9	408
Humor	3.83	1.183	4.4	11.8	17.9	28.3	37.6	408

We found that there were two specific topics that were most consumed: politics were always consumed by 44.1% (M = 4.09; DT = 1.016), which totals 74.4% if we consider the responses "frequently" and "always"; the other topic with the highest results was humor, always consumed by 37.6% (M = 3.83; DT = 1.183) of the sample and frequently and always consumed by 65.9% of the sample.

4.2. Social Media Consumption

We now present the results for the second construct of study—social media consumption—corresponding to four different variables and 17 items in our study. Regarding the first variable—average time spent in social media per day—which represents one of the key aspects when measuring media literacy (access and use), the results are shown in Figure 4.

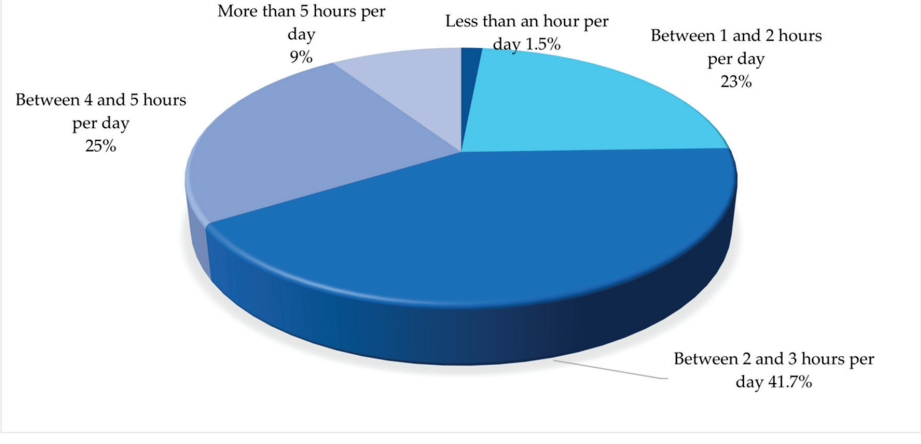

Figure 4. Graphical representation average time spend in social networks per day. Own elaboration.

As can be observed, 41.8% of the sample spent between 2 and 3 h per day in social networks, a quarter of the individuals (25%) declared surfing digital media between 4 to 5 h per day and 9% more than 5 h per day. The smallest average was for "Less than an hour per day": only 1.5% declared this range, which indicated that virtually all the individuals in the sample spent time in the social networks. For the next variable of study (V_6), we analyzed basic statistics and correlations between the average time spent in social networks and specific social networks, as shown in Table 5.

Table 5. Basic statistics for variable (V_6) "Define your level of usage for social networks" and correlation with average time of social networks use. Own elaboration.

State the Level of Use for . . .	Mean	DT	*p*	Rho	Never	A Little	Occasionally	Frequently	Always	N
Facebook	1.5	0.914	0.240	0.057	69.6	18.4	6.4	3.7	2	408
Tik Tok	2.26	1.418	0.000 *	0.222	45.3	18.4	12	13.7	10.5	408
Twitter	2.96	1.5	0.000 *	0.242	23.3	22.1	13	19.1	22.5	408
Twitch	1.47	0.905	0.459	0.037	72.1	16.4	6.4	2.9	2.2	408
YouTube	3.26	1.073	0.249	0.057	2.2	25.7	31.1	25.5	15.4	408
Instagram	4.12	1.02	0.000 *	0.422	2.2	6.1	15	30.9	45.8	408
WhatsApp	4.32	0.943	0.003 *	0.349	0.2	6.6	12.3	23	57.8	408

* $p < 0.05$.

From Table 5, it is worth noting that Instagram and WhatsApp were the most used among our sample, with 45.8% and 57.8%, respectively, declaring they used it "always". Regarding correlations between social networks that were most used and average time spent, significant correlations ($p < 0.05$) were found for Tik Tok, Twitter, and Instagram. However, it is important to point out that this correlation is weak in all cases, except for Instagram, showing moderate results ($p = 0.000$; R = 0.422).

According to Voorveld, Guda, Muntinga, and Bronner [42], one of the most interesting issues in the study of social networks consumption is related to engagement as a psychological state of user's motivation, determining different roles adopted when using social networks. As shown in Figure 5 the level of engagement in our sample was different depending on the digital platform. To address this issue, five different levels of engagement were established as defined by Barger and Labrecque [43].

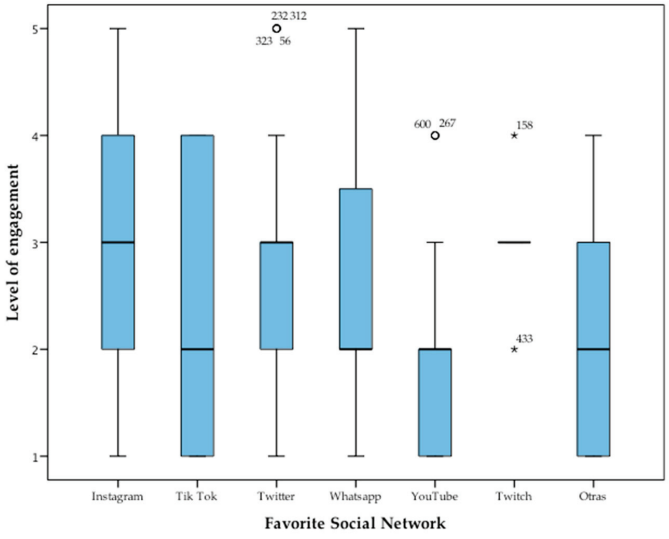

Figure 5. Boxplot for distribution of favorite social network and level of engagement in social networks. Own elaboration. Small circles and star values are outliers. Small circles, "out values", and star ones, "far out values".

The levels of engagement were established as follows: (1) I only consume without any participation; (2) I consume and participate by sharing content that I find interesting or that I have created myself; (3) I consume and participate by sharing and commenting; (4) I consume, participate by sharing, comment and seek to mention others; and (5) I consume, participate by sharing, commenting, and seeking controversy/dispute.

The last variable in this construct of the study referred to social media content consumption since COVID-19 began. The results shown in Table 6 for this variable allowed us an in-depth understanding of the variables analyzed.

Table 6. Basic statistics for variable (V_8): Social media content consumption since COVID-19 occurred. Own elaboration.

Type of Content	Mean	DT	Never	A Little	Occasionally	Frequently	Always	N
Entertainment and culture	4.16	0.918	0.2	5.6	16.9	32.4	44.9	408
Fashion and beauty	2.91	1.407	21.1	22.3	18.6	20.1	17.9	408
Information and current issues	3.38	1.045	2.7	19.1	31.1	31.6	15.4	408
Humor and memes	3.7	1.157	4.2	13.2	21.3	30.6	30.6	408
Food and care	2.36	1.183	27.5	34.3	19.6	12.5	6.1	408
Sports	2.58	1.322	25.6	30.2	15.5	18.4	10.3	408
Trending topics	2.55	1.177	20.1	33.7	24.3	14.5	7.4	408
Music	3.69	1.179	4.2	14	22.4	27.3	32.2	408
Cars and motor	1.52	0.99	72	13.8	6.9	4.9	2.5	408
Video games and gamers	1.97	1.291	54.3	18.4	8.8	12.5	5.9	408
Politics	2.63	1.24	21.6	28	25.1	16.2	9.1	408
Challenges	1.81	0.98	47.7	32.4	13	4.7	2.2	408
Healthcare	2.53	1.199	23.3	29.2	26.3	13.8	7.4	408
Technology	2.38	1.185	28.5	29.5	22.6	14.3	5.2	408

It is worth noting from these results that the most timely issues in social media consumption for our sample (more than a quarter declared consuming it "frequently" or "always") were "Entertainment and culture", with 77.3%; "Humor and memes", 61.2%; "Music", 59.5%; "Information and current issues", 46%; "Fashion and beauty", 38%; "Sports", 28.7%; and "Politics", 25.3%.

4.3. Misinformation and Fake News

The results in the third construct of study—misinformation and fake news—correspond with four different variables and 29 items in our study. The first results addressed were related to fake news distinction and reception, as shown in Figure 6.

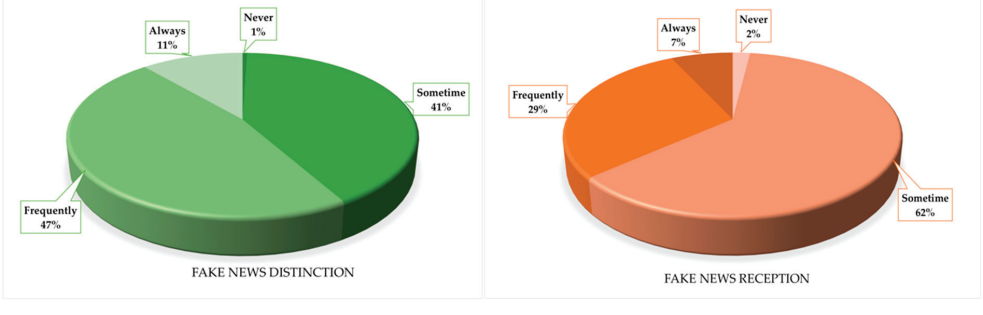

Figure 6. Fake news distinction and reception. Own elaboration.

Subsequently, these variables allowed us to analyze, on the one hand, which content was perceived to be more related with fake news (V_{10}), and, on the other hand, which media were spreading more fake news (V_{11}). Topics for V_{10} were taken from responses obtained in V_8: social media content consumption since COVID-19 began. Considering responses from "frequently" and "always", a percentage of 38.9 showed that "Academic content" spread fake news to some extent, and similar results were obtained for contents such as "Sports" with 38.8%, "Beauty and fashion" with 24.4%, "Entertainment" with 33.2%, or "Videogames and gamers" with 27.3%. The results for "Politic content", with

a percentage of 98, and "Humor and gossip" with 83.5%, obtained the highest averages. Regarding variable (V_{11}) the results were as follows in Table 7.

Table 7. Basic statistics for variable (V_{11}): Which contents do you perceive to be more related with fake news? Own elaboration.

	Mean	DT	Never	A Little	Occasionally	Frequently	Always	N
Academic	2.34	0.867	11.1	57	21.1	8.6	2.2	408
Politic	4.18	0.823	0	2	20.6	35.1	42.3	408
Humor and gossip	3.69	1.09	2.9	13.5	21.1	36.1	26.3	408
Health and diet	3	1.109	7.6	27.8	31.9	22.1	10.6	408
Fashion	2.13	0.858	20.1	55.5	17	5.7	1.7	408
Sports	2.44	0.953	12	49.1	24.8	10.6	3.4	408
Entertainment	2.27	0.933	19.4	47.4	21.9	9.8	1.5	408
Videogames and tech	2.13	0.837	21.4	51.4	20.9	5.7	0.7	408

As shown in Table 7, results coincided with the perception of distrust and reliability studied in the first construct of the study. It is important to note that the results for Facebook and Tik Tok were not significant as they were already analyzed and our sample did not consume them. At this point, feelings associated with fake news were explored in the next item, as shown in Figure 7.

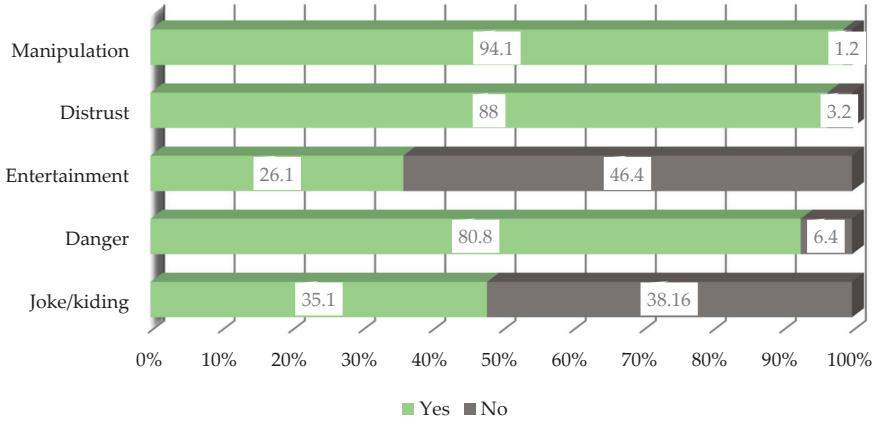

Figure 7. What feelings do you associate fake news with? Own elaboration.

Considering the individuals from our sample, we found the following feelings related to fake news: a percentage of 94.1 declared that they associate manipulation with misinformation, 88% stated associating it with distrust, and 80.8% said it was associated with danger. The next step was focused on finding out if they were using fact-checking as a specific tool to fight disinformation and fake news. Although this concept is usually related to journalism, it has experienced an increasing relevance since social media emerged as sources to become informed among the population, and more so since COVID-19 began, as described by Magallón-Rosa [44]. In this regard, we found that 61.2% of the sample declared they did not know what a fact-checker was, and only 38.8% declared that they knew what they were. From this percentage, only 20.9% stated they had used it at least once. In this regard, Newtral, Efe Verifica, and Maldita.es were the most used fact-checkers.

Finally, as can be observed in Figure 8, almost 8 out of 10 young people absolutely distrust politicians. Specifically, 57.7% distrust social media, and 44.4% distrust media, only trusted by 6.1% and 7.6% respectively. Journalists did not obtain a better perception, with 4 out of 10 young people declaring distrust: they were only trusted by a percentage

of 19.2%. In addition, it can be observed that scientific and international institutions were trusted the most, with percentages of 64.7% and 45.3%, respectively.

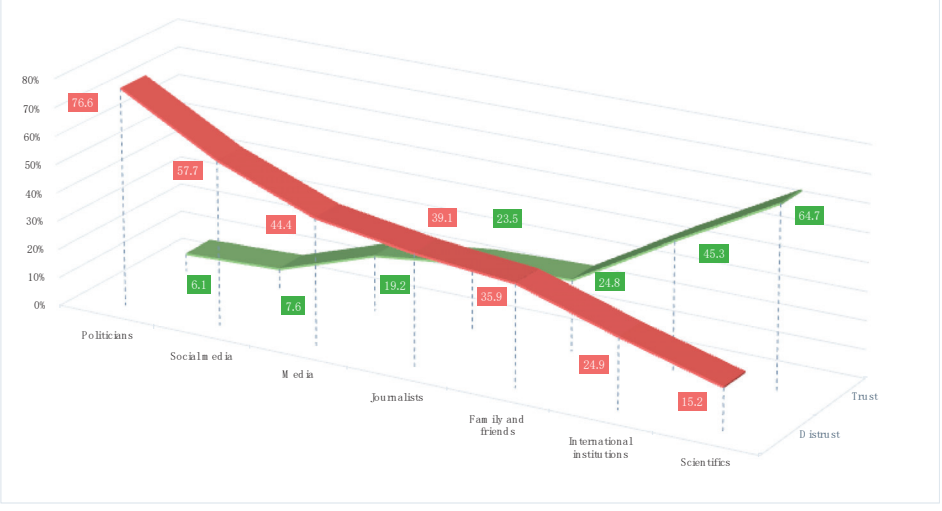

Figure 8. Percentages in trust and distrust feelings about social agents. Own elaboration.

5. Discussion and Conclusions

Misinformation and fake news have become a great global concern since the start of the COVID-19 pandemic, affecting all citizens, as recent literature indicates [5,8,10,17]. However, the manner in which it is reaching young people is extremely concerning, as shown in several studies [18,23,30,31]. It could be said that misinformation and fake news have been inherently human issues since the beginning of time [45], but the impact and the easy spread of the phenomenon through social networks call for urgent actions from universities and stakeholders (media and policymakers). Although the present research study does not offer a working hypothesis—as it is not intended to be an experimental research study, but a descriptive one—the main findings presented point to three different issues related to the results obtained, not only opening new lines of research but also providing benchmarks for specific actions from media stakeholders, policy makers, and educational institutions:

Firstly, regarding media consumption in line with other previous and recent studies such as Couldry, Livingstone, and Markham [40]; Jones [33]; and Mendiguren, Pérez, and Meso [18], 5 out of 10 young people declared never becoming informed by consuming the radio or the press, neither their analog nor online versions, while 7 out of 10 frequently or always became informed with social networks. These data coincide with previous studies and reports, but the interesting aspect offered by this study remains in the reliability rating given by the young people to the media they consume. Although theoretical arguments tell us that cognitive biases conduct us to believe what we see, before believing what we read, as assumed by Daniel Kahneman in his concept WYSIATI (What You See is All There is) [46,47], our sample is highly distrustful about the media that they consume the most, namely social networks and webpages, which tend to be more visual in nature. On the contrary, they truly believe in the reliability of media such as the radio or the press, which is highly interesting for media outlets, as it shows the need for new projects to focus on this unattended audience, as they once declared not consuming them.

Secondly, related to social media access and consumption, it is generally accepted in the literature that people would rather rely on the information that is immediately available, and the availability and the use of digital media are undeniable [5,40]. Moreover, the study

presented confirms how social media offering immediacy make them more appealing to Generation Z; however, a novel contribution to previous studies is the degree of awareness they showed regarding the lack of credibility of the content circulating through these media. The results on social network use—three-quarters of the sample used Instagram and WhatsApp the most—provided interesting data for media stakeholders. Perhaps in light of these descriptive data, media stakeholders should consider promoting specific content in these social networks to fight distrust and misinformation.

In third place, the data obtained, related to fake news, perceptions, and reception, allowed us to conclude that the Spanish Generation Z received and recognized fake news, but surely they did not use tools for their verification; i.e., 6 out of 10 young people in our study did not know what a fact-checker was. This lack of knowledge has been unfortunately confirmed by several studies [18,32] and reports [37,38]. Although they are conscious of the lack of credibility of social networks, they consume them intensively, assuming they constantly receive fake news that makes them feel manipulated, distrusted, and in danger. Several aspects or actions need to be brought together to provide a response to this situation, as highlighted by Lim and Tan [48], on the one hand, the Spanish government should foster significant, systematic, and comprehensive training programs in media literacy (following good practices from different countries such as Vietnam with their program "Fake≠Fact" or the UK's National Literacy Trust), and on the other hand, asking large corporations to collaborate in the fight against fake news. In this regard, we recently found that WhatsApp launched the "How WhatsApp can help you stay connected during the coronavirus (COVID-19) pandemic" program, which includes a step-by-step guide for users [49]. In light of the results obtained, we should add two more issues: first, media stakeholders are aware of young people and trust them, but they do not interact with them. They need to focus on young people as an audience, and they will pay attention if they feel that the media are also talking to them. Secondly, there is a need, more than ever, to reinforce media education at universities in order to promote and build up strong critical thinking skills in students. As shown by different data, the Spanish Generation Z does not lack media literacy skills in terms of access, use, and consumption, but the problem goes beyond traditional media literacy. As pointed out by Buckingham [50], rethinking media literacy should not be presented as an individual solution, as it relays responsibility to citizens and "absolves governments from their responsibility to solve problems" [50] (p. 230). Instead, re-thinking media literacy should be thought of as a global solution that involves governments, media stakeholders, and education leaders at schools and universities.

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The Influence of Political Ideology on Fake News Belief: The Portuguese Case

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Abstract: The relationship between a subject's ideological persuasion with the belief and spread of fake news is the object of our study. Departing from a left- vs. right-wing framework, a questionnaire sought to position subjects on this political-ideological spectrum and demanded them to evaluate five pro-left and pro-right fake and real news, totaling 20 informational products. The results show the belief and dissemination of (fake) news are related to the political ideology of the participants, with right-wing subjects exhibiting a greater tendency to accept fake news, regardless of whether it is pro-left or pro-right fake news. These findings contradict the confirmation bias and may suggest that a greater influence of factors such as age, the level of digital news literacy and psychological aspects in the judgment of fake news are at play. Older and less educated respondents indicated they believed and would disseminate fake news at greater rates. Regardless of the ideology they favor, the Portuguese attributed higher credibility to the sample's real news, a fact that can be meaningful regarding the fight against disinformation in Portugal and elsewhere.

Keywords: political bias; fake news; disinformation; left–right dimension

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1. Introduction

The increasing spread of fake news has become a global threat. After the 2016 US presidential election, fake news became a risk for Western democracies [1,2]. Nowadays, fake stories easily reach high popularity rates, sometimes overlapping with real stories, deceiving and manipulating people [3,4]. Online disinformation has become part of the daily life of the reader/user of social media. Through social media, such as Facebook and Twitter, fake news is widely disseminated [5–8], obtaining, in some cases, greater engagement (that is, shares, reactions and/or comments) than true popular news [4,9–11]. In Portugal, the country where our study is centered, fake news is also a reality. Baptista and Gradim (2020a) analyzed the activity of fake news pages on Facebook during the 2019 national elections and found that fake news obtained, on average, more shares per publication than newspaper pages on Facebook [11]. Regarding the research problem, the literature shows that many studies have been carried out in the scope of detecting and mitigating fake news and identifying existing disinformation websites [12–14].

The spread of fake news, during the various elections, has also been studied on Twitter [15–17] and Facebook [11,18,19]. Studies on filter bubbles or echo chambers have contributed to understanding the phenomenon of fake news [20–22] or how malicious bots and algorithms have contributed to the "success" or proliferation of fake news [23–25].

Despite the abundance of research, we found that the focus of the literature is clearly on the United States scenario, specifically in the 2016 elections. However, there are some

studies that address the consumption and dissemination of fake news in the European context. The investigation has sought, above all, the influence of disinformation during the electoral campaigns of several countries, as in the debate related to Brexit [26], in the Italian general elections [27], in the French elections [28] or in the German elections [6] through the coordination of social bots on twitter. The impact that disinformation has on the European Union's unification policies has also been investigated [29], especially with regard to pro-Russian propaganda and the ultranationalist, xenophobic and anti-immigration populist rhetoric that discredits the European Union project [29–31]. As in the American scenario, some studies support the idea of very small audiences for fake news [27,32]. Our study adds to the current literature with a unique European perspective and could motivate future investigations in this area. In Portugal, the phenomenon of fake news still needs scientific research, especially in terms of political ideologies. This study focuses on a largely unexamined aspect regarding the Portuguese reality, having as a main objective to understand the relationship between the orientation of an individual's political ideology and the belief in fake news. In this study, we define 'fake news' as an article that falsifies a real news or report, in the online universe, imitating its format in order to appear legitimate and credible to the public. Fake news articles are a type of online disinformation that contains totally or partially false content, which can be verified, and have the malicious intention of deceiving or manipulating the reader/user [10,19,33–35].

2. Theoretical Background

The belief and dissemination of fake news seems to be related to psychological, economic and ideological aspects [19,36–41]. Baptista and Gradim (2020b) found that low levels of education or digital literacy, distrust in the media, low cognitive ability, close relationship with other users on social media and people's partisanship or ideological beliefs are the most common factors found in the existing literature [10]. Stories that meet our view of the world (in different aspects such as religious or political issues) are more easily accepted, even if they are wrong [39,42,43]. These ideological effects contribute to the creation of filter bubbles and echo chambers on social media [44–46].

However, recent studies suggest that the impact of filter bubbles, echo chambers, and recommendation algorithms on their creation, is not as great as previously thought, since the fake news audience is very specific, small and disloyal, with heavy users [15,18,47,48]. On the other hand, fake news continues to be disseminated, and false or biased information increases the likelihood of exposure. After being repeated many times, fake news becomes more familiar, quick to access and difficult to control and may induce belief in some users [36,49]. In ideological and partisan terms, several studies have shown that conservatives seem to be more likely to believe and share fake news than liberals [15,19,37,39,50,51].

Fake news content seems to indicate that those products are conceived for the conservative electorate, because they confirm their beliefs and also because their supply is much larger than neutral or non-political fake news [18,52].

In Portugal, fake news also seems to be aimed at the right wing, especially the far-right audience, with racist, anti-system and anti-corruption speeches that target the left wing [11,53]. However, other studies have shown that both conservatives and liberals have a tendency to accept false information as long as this confirms their views. Both can be equally vulnerable to believing false information or conspiracies [39,54]. Guess et al. (2019) also demonstrated that, although conservatives are more likely to share fake news, the age variable (older people) overlaps with education, ideology or partisanship. People over the age of 65 shared fake news many times more than young people.

2.1. The Left–Right Political Scale

The left and right political schema has played a fundamental role, since the French Revolution, in the political-ideological orientation of citizens [55]. Like the cardinal points for the geographic reading of a map, the scheme has served as a guiding mechanism in a complex political universe [56–58]. In the Anglo-Saxon universe, this dichotomy

has an older history and opposes terms like liberal and conservative [57,59]. Even so, several theses sought to question its validity for measuring the political ideology of citizens, organizations and parties, claiming the end of ideology [60,61], the end of history [62] and the third way [63]. However, the dichotomy continues to be used in the political language of most Western democracies [56,58,64].

The left wing and the right wing are not divided by absolute meanings of each political field [65]. The literature usually distinguishes these two terms by their views on the values of equality and freedom in the economic and social organization of society [57,66,67].

Bobbio (1995) made the distinction between left and right by the way they both see equality. The left, in addition to being more egalitarian than the right, also defends that inequalities can be eliminated [65]. The right presents itself as more libertarian and less egalitarian, defending the impossibility of eliminating all inequalities, which may even be beneficial to social development. Pinto (1996) highlights as essential themes of the distinction an anthropological pessimism (right wing) vs. anthropological optimism (left wing). Pinto (1996) also opposes the dichotomies: anti-utopianism (right) and utopianism (left); organicism and the right to difference (right) with egalitarianism and socialism (left); elitism (right) and democratism (left); property and anti-economicism (right) and economicism (left); nationalism (right) and internationalism (left) [68]. With the transition to a post-materialist society between the 1960s and 1980s, the left and the right acquired new values. The 'new left' became more egalitarian, defending new causes associated with the rights of women (also in the option of abortion), migrants and immigrants, the environment, homosexuals and LGBT movements and minorities in general [69–71].

Despite these differences, we can never consider that the left wing radically defends equality and that the right-wing rejects it completely [65]. The 'new right' seems to take a more "authoritarian" view [69], more conservative and traditionalist in favor of strong leaders, security and order, social authority and, compared to the left, greater intolerance toward minorities, sexual and social issues and abortion [64,70,72,73]. This political dyad is markedly distinguished by the way in which they interpret and defend state action in the economic life of society. While the left assumes a policy more in favor of state intervention both in regulating markets and in social services, the right defends greater economic liberalization, with a free, unregulated market, based on a more globalized economy [74]. In addition, opinions and attitudes related to religious beliefs can take on political relevance and be part of social cleavages in some countries [57,67].

2.2. Portuguese Case

In 2019, the Portuguese were the most trusting of journalistic news content (75%), and their concern about fake or illegitimate content on the internet increased compared to 2018, as did the use of social media to access news [75]. These results—namely, a greater confidence in journalistic institutions—may be related to the low political polarization of the Portuguese party system [76] and its media [77].

The Portuguese media managed, over the years, to separate themselves from an ideological and party culture, becoming more professional than several countries, namely in southern Europe [77–79]. da Silva et al. (2017) characterize the Portuguese media system as being hybrid and complex, composed of public and private media, with detachment from political control [79]. The Portuguese government has been led by moderate parties (center-left—Socialist Party (PS) and center-right—Social Democratic Party (PSD)) with the exception of some coalitions with the Social Democratic Center (CDS), a right-wing conservative party, without the representation of extremist ideals [80,81].

Until 2019, Portugal emerged as an exception by keeping away from the Portuguese parliament left and far-right populist ideals [82–85]. Left-wing parties (such as the Left Bloc and the Portuguese Communist Party) identified as a 'radical left', mostly manifesting popular discontent without acquiring populist narratives [82]. These parties seem to have channeled the protest vote [86]. Even with the 2011 economic recession, Portugal, unlike

Spain or Greece [87], opposed the emergence of left or right populist leaders, forming a parliamentary agreement known as 'Geringonça' [88].

That changed in the 2019 national elections, with the Portuguese extreme-right electing a national deputy for the first time [89–91]. Dissatisfaction with the right-wing opposition and parties in the center may have triggered the rise of Chega [89,91,92]. Marchi (2019) classifies Chega as a populist party of the new radical right [93]. Until 2019, da Silva (2018) argues that low levels of Euroscepticism, low immigration rates and the lack of political space for populist ideologies to develop kept Portugal as an exception in Europe [94].

3. Methods

Our investigation focused on understanding the relationship between an individual's political ideology with the belief, interpretation and dissemination of fake news and assessing the electorate's ability, whether ideologically left wing or right wing, to discern fake news. To achieve our goals, a questionnaire was delivered, for self-answer and convenience, to participants aged 18 or over. The exploratory sample used in our study was n = 712 participants. Data collection was conducted through the dissemination of an online questionnaire (via email, Facebook), with the support of several business, cultural and social associations in mainland Portugal. Additionally, the online questionnaire was available on Internet. Data collection took place between 3 March and 3 September 2020. The questionnaire was divided, to ensure data quality, into 3 sections: (1) demographic issues, (2) exposure to fake and real headlines to assess participants' perceptions of fake news and news and (3) issues to identify the ideological dimension of the participants in the left–right political dimension. The questionnaire guaranteed participants with total anonymity and confidentiality of the data. In the introductory description of the questionnaire, they were informed that the study sought to understand how the Portuguese consumed information. The participants did not receive any encouragement and/or warning that they would be evaluating fake political headlines, to ensure that they would respond as they normally would on social media. We also did not specify that the questions related to their attitudes, opinions or values sought to identify their profile within the left and right political scale, so that this would not make their responses biased.

3.1. Procedure

3.1.1. Measuring the Ability to Distinguish Fake News

The main objective of this study is to measure the electorate's ability to discern fake news, investigating its relationship with the political ideology of each individual. A single questionnaire was designed to ascertain the influence of these variables on the belief and dissemination of fake news. Based on the premise that the majority of the public is limited to reading only the headlines of the news articles [95,96], which can influence their beliefs [29], the participants were exposed to a set of fake news (FNL—pro-left; FNR—pro-right) and real news (RNL—pro-left; RNR—pro-right), presented in a Facebook post format, with photo, title, signature and source (see Figure 1).

Figure 1. Example of fake news targeted to right (**A**) and left (**B**) audiences used in the study. Note: **A**—Catarina Martins defends a basic income of 750 euros "for gypsies, migrants and others" Figure A explores social prejudice toward the Roma community. The Roma community has been a victim of right-wing populist rhetoric, based on the stereotype that "people don't work because they don't want to" and that they are living on state benefits. The fake story indicates that a leader of the left party defends a higher state benefit, even higher than the Portuguese minimum wage. **B**—Brief | Statistics Portugal: More than half of the jobs created since 2015 have salaries above 1200 €. Figure B reports that half of the jobs that have been created since 2015 have salaries above 1200 euros. In 2015, Portugal came to be governed by a left-wing party (PS) that succeeded a right-wing government that was marked by the Troika's economic rescue, low wages, unemployment and precariousness. Source: The fake headlines were edited by the authors and adapted from the Polígrafo: A (https://bit.ly/3cP4PcB, accessed on 25 May 2021) and B (https://bit.ly/3a0jrE7, accessed on 25 May 2021).

To measure the belief and willingness to share fake news and real news, we followed the procedure of several studies that sought to understand individual susceptibility to fake news [36,38,97]. Participants chose at random to complete the questionnaire and expressed their opinion regarding 10 fake news and 10 real news. In order to establish a relationship with the variables (left–right political ideology), the articles were categorized as follows: 10 fake news (5 pro-left and 5 pro-right) and 10 real news (5 pro-left and 5 pro-right) (see Figure 2).

Figure 2. Example of real news pro-right (**A**) and pro-left (**B**) used in the study. Note: **A**—The past four years have had the biggest tax burden ever; **B**—There have never been so few unemployed enrolled for 28 years. Source: Image A was adapted from https://bit.ly/3hSg3PS (accessed on 25 May 2021). Image B was adapted from https://bit.ly/3aIsfhb (accessed on 25 May 2021).

The fake headlines used were taken from Polígrafo, the first Portuguese fact-checking website. Polígrafo occults, in some cases, the author/source/website that created or disseminated the false headlines. Therefore, we decided to create, for the most part, the sources of the false headlines used (with the exception of direitapolitica.com and geringonca.com), according to sources similar to the Portuguese sources of disinformation and misinformation. The headlines were distributed at random. Respondents were asked

as follows: "According to your knowledge, how do you rate the following headline? on a 5-point scale (1—not credible; 2—somehow credible; 3—quite credible; 4—credible; 5—very credible).

The belief in fake news is based on calculating the average rating of responses, just as with belief in real news. In addition, we also asked participants about their willingness to share the fake (SFNL—willingness to share pro-left fake news; SFNR—willingness to share pro-right fake news) and real headlines (SRNL—willingness to share pro-left real news; SRNR—willingness to share pro-right real news) as follows: 'What is your willingness to share the headline?" (on a scale from 1—most unwilling to 4—totally willing). Responses were calculated in the same way as belief in fake news and real news. All fake news and real news that were used in the questionnaire can be consulted in the Supplementary Materials.

3.1.2. Identification of the Electorate in the Left–Right Political Dimension

Recognized by the majority of European citizens, the left and right political dimension mostly categorizes the attitude and opinion of voters about a diverse range of socioeconomic, moral and religious values [67,98].

Most studies [98–101] have focused on electorate self-positioning on this scale, when asked what political field they think they belong to. The voter's self-placement on the left–right political scale is related to the proximity to a given political force [102]. In other words, the voters interpret the scheme and places themselves in it according to their party identity, that is, in the field in which they thinks their party fits best [74,98].

In order to characterize the political ideology (left–right) of the Portuguese electorate, the questionnaire we used was made up of questions based on a wide range of values and crucial indicators for the distinction between left and right. The questionnaire includes an ideological component, with a set of variables, which allow the evaluation of the participants' social and political opinions and attitudes, framed in the left–right political scheme. The questions were elaborated from the European Values Study 2017 database (available online: https://bit.ly/2Zx0dzN, accessed on 25 May 2021) and the questions used by Baptista and Loureiro (2018) [74].

Questionnaire Application: Identification of Left and Right Political Ideology

To identify the ideological orientation of the participants, we used the left–right political scale of 10 points, 1 being extreme left and 10 being extreme right. We consider points 1 to 4 to be left, political center 5 and 6, and right from 7 to 10. All questions related to the participant's ideological identification were designed based on this scale, which allowed the classification of the participant's ideology by calculating the average of the responses. The model we use (adapted from [74]) shows the participant's position in light of the main cleavages that distinguish the left and the right in western Europe. Participants were questioned about issues such as moral and religious values, attitudes toward social groups, positioning on the left–right scale, socioeconomic values and libertarian and authoritarian values, i.e., topics that respond to most theories on attitudes and opinions related to the left and right political dichotomy in western European democracies (see Table 1).

Table 1. Categorization of the application of the questionnaire to measure the left–right political scale.

Moral and religious values	God's Importance in Life	1—Nothing important 10—Very important
	Abortion Euthanasia Suicide Prostitution Smoking marijuana or hashish Artificial insemination Extramarital relations Intercourse with occasional partners	1—Always 10—Never
Socio-economic values	Equalization of income	1—Wages should be equal as possible 10—There should be incentives to reward individual effort
	State intervention (I)	1—The state should control companies 10—The state should give more freedom to companies
	State intervention (II)	1—The state should be primarily responsible for ensuring the survival of all 10—People should be primarily responsible for ensuring their survival
	State intervention (II)	1—The property of the state in business and industry should increase 10—Private property in industry and business should increase
Social values	Homosexuality	1–Always 10–Never
	Immigration (libertarian vs. authoritarian orientations) (I)	1—Immigrants do not take jobs from people in the countries where they go 10—Immigrants take jobs from people in the countries where they go
	Immigration (libertarian vs. authoritarian orientations) (II)	1—Immigrants do not impoverish the cultural life of the country they are going to 10—Immigrants impoverish the cultural life of the country they are going to
	Immigration (libertarian vs. authoritarian orientations) (III)	1—It is better for the good of society that immigrants maintain their customs and traditions 10—It is better, for the good of society, that immigrants do not maintain their customs and traditions, but that they adopt the customs of the country
	Death Penalty	1—Always 10—Never
	Unemployed	1—The unemployed should have the right to refuse the job they do not want 10—The unemployed should accept any job or lose the unemployment benefit
	Self-placement on the Left–Right political spectrum	1—Left wing 10—Right wing

Note: Data adapted by the authors from the European Values Study database and the study by Baptista and Loureiro (2018) [74].

3.2. Participants

A sample of 712 individuals (245 men and 467 women) participated randomly in Portugal. The sample was divided into the following age groups: 18–30 years (40.6%), 31–40 years (23.0%), 41–65 years (34.3%) and over 65 years (2.1%). According to their responses (on the left–right political scale), we classified a total of 339 (47.6%) individuals on the left, 211 (29.7%) in the center and 162 (22.7%) on the right. The political ideology of women is as follows: 46.9% are from the left, 29.1% from the center and 24.0% from the right. Regarding men, 49.0% are from the left, 30.6% from the center and 20.4% are from the right. With schooling up to the 12th year, 168 individuals (109 women, 59 men) participated, 267 (182 women, 85 men) with a degree, 184 (128 women, 56 men) with a master's degree and 93 (48 women, 45 men) with doctorate degree.

Considering the left-wing individuals (N = 339), 56 (16.5%) participants have schooling up to the 12th year, 134 (39.5%) have a degree, 99 (29.2%) have a master's degree and 50 (14.7%) have doctorates; 172 (50.7%) are 18–30 years old; 68 (20.0%) are 31–40 years old and 99 (27.7%) are over 41 years old.

Regarding people ideologically from the center (N = 211), 64 (30.3%) with education up to the 12th year, 76 (36.0%) with a degree, 52 (24.6%) with a master's degree and 19 (9.0%) have a doctorate; 77 (36.5%) were 18–30 years old; 54 (25.5%) 31–40 years old and 80 (37.9%) are over 41 years old. Of the right-wing individuals (N = 162), 48 (29.6%) have a level of education up to the 12th year, 57 (35.0%) have a degree, 33 (20.3%) have a master's degree and 24 (14.8%) have a doctorate; 40 (24.6%) 18–30 years old; 42 (25.9%) are 31–40 years old and 80 (49.4%) are over 41 years old.

3.3. Statistical Analysis

Descriptive statistics of data were presented as mean (M), standard deviation (SD), minimum and maximum and relative frequency (%), when appropriate. Skewness and kurtosis coefficients were computed for univariate normality analyses purposes, and all values were within ± 2, except the FNR share variable. Multivariate analysis of variance (MANOVA) followed by one-way analysis of variance (ANOVA) were used to investigate differences between ideology, schooling, gender and age. Associations between variables were calculated using the Pearson product-moment coefficient. In order to verify if there was a significant relationship between some of the observed variables, the chi-square test was used. All of these statistical analyses were conducted using SPSS 27.0 (IBM SPSS 27.0, Chicago, IL, USA). In all statistical analyses, significance values of $p < 0.05$ were considered.

4. Results

4.1. Relation between Belief in (Fake) News and Political Ideology

In order to identify possible real news belief differences by political ideology, two independent MANOVA's were conducted. The results revealed that political ideology has a significant effect on the multivariate composite (Wilk's $\lambda = 0.913$, $p < 0.001$). Follow-up univariate analyses (Table 2) indicated that only for real pro-left news are the differences not significant. Post hoc comparisons using Tukey´s test demonstrated that the belief in real pro-right news presents significant differences ($p < 0.02$) for all political ideologies (left, center and right). Furthermore, right-wing individuals are those with higher values in relation to the belief in real pro-right news, with higher values than left-wing participants and center participants.

Table 2. Means (M), standard deviations (SD) and univariate effects of belief in real news (pro-left RNL and pro-right RNF) and fake news (pro-left FNL and pro-right FNR) by political ideology.

Item	Left Wing M ± SD	Center M ± SD	Right Wing M ± SD	F	*p*
RNR	2.44 ± 0.66	2.60 ± 0.74	2.86 ± 0.79	18.522	<0.001
RNL	2.50 ± 0.71	2.45 ± 0.67	2.45 ± 0.65	0.639	0.528
FNR	1.50 ± 0.59	1.79 ± 0.72	2.01 ± 0.71	36.021	<0.001
FNL	1.99 ± 0.73	2.09 ± 0.74	2.22 ± 0.75	5.699	0.004

Regarding pro-right fake news, there are significant differences ($p < 0.001$) for all ideologies (left, center and right) (Table 2). The participants, ideologically from the right, are the ones with the highest values of belief in relation to fake news for the right, with the individuals from the left those with the lowest values, followed by the participants from the political center. As to the belief in pro-left fake news, the results revealed significant differences ($p = 0.002$) only for individuals from the left and right. Still, it is also the right-wing individuals who are most likely to believe pro-left fake news.

4.2. Relation between Willingness to Share (Fake) News and Political Ideology

As for the respondents' willingness to share real news, there are also significant differences (Wilk's $\lambda = 0.901$, $p < 0.001$). However, follow-up univariate test indicated that there are only no significant differences in the willingness to share pro-left real news (SRNL) ($F_{(2.711)} = 0.567$, $p = 0.567$). Regarding the respondents' willingness to share pro-right real news (SRNR), right-wing participants also have higher values on willingness to share than those on the center and on the left. Left-wing participants are the ones with lower values compared to other ideologies.

Regarding the willingness to share fake news, the multiple comparison tests showed significant differences ($p = 0.012$) in the willingness to share pro-left fake news (SFNL), either between left-wing or right-wing individuals, with people on the right presenting higher average values. As for the willingness to share pro-right fake news (SFNR), there are significant differences ($p < 0.001$) for all political ideologies, but there are higher values associated with right-wing individuals. Given the descriptive measures of the variables (Table 3), it is important to highlight that the belief in pro-left fake news presents, in general, an average (M = 2.07 ± 0.75) higher than the belief in pro-right fake news (M = 1.70 ± 0.70), with the minimums and maximums to present the same values.

Table 3. Descriptive measures and univariate normality.

Variables	Min.	Max.	M	SD	Sk	Ku
FNL	1.00	4.40	2.07	0.75	0.337	−0.44
FNR	1.00	4.40	1.70	0.70	1.075	0.74
RNL	1.00	5.00	2.60	0.74	0.585	0.39
RNR	1.00	4.80	2.48	0.69	0.660	0.24
SFNL	1.00	4.00	1.40	0.55	1.44	1.47
SFNR	1.00	4.00	1.30	0.48	2.01	4.22
SRNL	1.00	4.00	1.53	0.63	1.16	0.79
SRNR	1.00	4.00	1.52	0.63	1.32	1.52

Note: The acronyms sk and ku mean skewness and kurtosis respectively.

On the other hand, when analyzing Table 3, we found that individuals considered real news, in general, more credible than fake news, obtaining higher averages and maximums. Analyzing the averages of the variables, the willingness to share fake news and real news is reduced. Finally, it should be noted that the majority of participants (regardless of their ideology) did not consider the false stories pro-left (71.5%) and pro-right (86.3%) credible.

4.3. Demographic Factors and Belief in (Fake) News

Regarding the effect of the educational level of the participants in the belief in fake news, it was found that there is a significant effect (Wilk's $\lambda = 0.953$, $p < 0.001$). However, follow-up univariate analysis indicated significant differences only in the belief in pro-right fake news ($F_{(3.708)} = 11.501$, $p < 0.001$). The Tukey's multiple comparison test allowed us to verify that individuals with less education have higher values in relation to the belief in pro-right fake news. As for the belief in real news, there are only significant differences with the belief in pro-right real news ($F_{(3.708)} = 2.806$, $p = 0.039$). It is also found that the lowest education index has higher values of belief in pro-right real news.

The gender of the participants has no influence on the belief in fake news, since there are no significant differences (Wilk's $\lambda = 0.997$, $p = 0.410$).

The results obtained with MANOVA indicate significant differences regarding age (Wilk's $\lambda = 0.934$, $p < 0.001$). Follow-up univariate analysis of variance demonstrated significant differences between the pro-left real news ($F_{(2.709)} = 8.311$, $p < 0.001$) and the pro-right real news ($F_{(2.709)} = 10.241$, $p < 0.001$). There are significant differences between the older group and the younger group, with the older ones showing higher values.

As for the belief in fake news, MANOVA indicates that age has a statistically significant effect (Wilk's $\lambda = 8.053$, $p < 0.001$). Univariate analysis of variance indicates significant differences both for the belief in pro-right fake news ($F_{(2.709)} = 11.672$, $p < 0.001$) and for the pro-left fake news ($F_{(2.709)} = 13.531$, $p < 0.001$). Post hoc comparisons using Tukey´s indicate that there are significant differences between younger and older people for both, with the older age group showing higher values.

To verify whether the combination (age and education factor) influences the belief in fake news, we performed two analyses of variance with two factors with interaction. Only regarding the belief in pro-left fake news, this combination showed significant differences ($F_{(6.700)} = 8.028$, $p = 0.02$). Therefore, first we compared the ideological groups by level of education in relation to the belief in pro-left fake news, and the post hoc Tukey test allowed us to verify that there are significant positive differences between the participants (from the center and from the right) of low-level education with the most-educated left and center participants.

Regarding the left-wing participants, with low education, we did not find these differences. We also found that right-wing participants have higher belief values at all levels of schooling (up to 12th grade (M = 2.26, SD = 0.74), undergraduate (M = 2.28, SD = 0.78), master's (M = 2.15, SD = 0.77), doctorate or more (M = 2.13, SD = 0.72)) compared to participants from left (up to 12th grade (M = 2.05, SD = 0.80), degree (M = 1.95, SD = 0.65), master's (M = 2.01, SD = 0.79), doctorate or more (M = 1.98, SD = 0.73)).

Second, we compared the groups by age group and ideology and, through the post hoc Tukey's test, we found that the age of the left-wing participants has no effect on the belief in pro-left fake news. On the other hand, age is relevant in the belief in pro-left fake news among participants ideologically of center and right wing.

We found significant positive differences between people of the highest age group, the center and the right wing, and the youngest people (18–30 years) of the left wing, the center and the right wing. The people on the right had higher average values than the center and the left, in the younger and older group. In other words, younger people on the right believe more in fake news than young people on the left and young people in the center, and the same is true among older people.

4.4. Association between Willingness to Share and Belief in (Fake) News

To study the association between willingness to share and belief, Pearson's linear correlation coefficient was used (Table 4).

Table 4. Association between willingness to share and belief in (fake) news.

Variables	RNR	RNL	FNL	FNR
SFNL	0.262 **	0.377 **	0.558 **	0.362 **
SFNR	0.390 **	0.295 **	0.366 **	0.628 **
SRNL	0.273 **	0.496 **	0.307 **	0.232 **
SRNR	0.489 **	0.284 **	0.212 **	0.361 **

Note: ** $p < 0.01$.

The results indicate strong and significant positive correlations between all variables, highlighting the correlations between the willingness to share pro-left fake news and the belief in pro-left fake news (r = 0.558, $p < 0.01$), the willingness to share pro-right fake news and belief in pro-right fake news (r = 0.628, $p < 0.01$), willingness to share real pro-left news and belief in real pro-left news (r = 0.496, $p < 0.01$), and the willingness to share real pro-right news and belief in real pro-right news (r = 0.489, $p < 0.01$).

5. Discussion

In general, the degree of legitimacy attributed by participants to FNL (M = 2.07, SD = 0.75) and FNR (M = 1.70, SD = 0.70) is lower than the credibility attributed to real news (RNL (M = 2.60, SD = 0.74) and RNR (M = 2.48, SD = 0.69)). In addition, the willingness to share fake news indicates that it is less than the willingness to share real news. Our results seem to be encouraging regarding the ability of the Portuguese electorate to distinguish fake news, at a time when online disinformation continues to be widespread in Portugal [11]. Our results also show that there is a relationship between the political ideology and the belief and spread of (fake) news, which has been pointed out by the literature as one of the main factors, along with partisanship [18,103–107].

We found evidence to suggest that right-wing people are more likely to accept fake news, compared to left-wing people and moderates. Unlike most investigations in this area, we classify the participants ideologically—depending on their responses—in the left–right political dimension. Even so, this evidence corresponds to most of the results found in the recent literature, which points to a greater propensity by conservative voters (right wing) to believe and share fake news [15,18,19,36,51,107,108].

The literature indicates several reasons to explain why conservatives and/or right-wing people are more likely to believe fake news than liberals or left-wing people. On the one hand, right-wing people seem more sensitive to threats and to believe negative information [107], are more associated with a closed-minded style, less receptive to changes and confrontation with new information [109] and can be more likely to agree with ideologically compatible content [110] and, in the case of more radical people and with higher levels of authoritarianism, the resistance to change their beliefs after being corrected is higher [111]. In addition, people on the right are also associated with being more dogmatic [112]. In the United States, Republicans are more likely to believe negative fake news about Democrats than liberals are to believe negative fake news about Republicans [113]. Conservatives are also, in general, more susceptible to conspiracy theories, which is a very close genre of fake news that has also been studied [114,115]. On the other hand, the fake news 'online market' is more targeted at the conservative public, and the pro-Trump fake news offer was broader during the 2016 elections [18,19], as conservatives seem to be more exposed to fake news [116]. It is known that repeated exposure can contribute to making the content more accessible, more difficult to control and, above all, more familiar to the user, which can induce false beliefs [36,49] which, later on, are very difficult to correct or disprove [117,118]. In Portugal, we can consider that right-wing people are more exposed to online disinformation. The production of fake news and the use of bots and fake profiles seems more related to the right and far-right, with the entire Portuguese left wing as its political target [11,119,120]. On the other hand, the right wing is more skeptical about the functioning of several democratic institutions, namely journalism, which has been the target of physical attacks and infamies in Portugal and in several countries [121,122]. Distrust

in the media has been identified as one of the main reasons for belief in fake news [121], and it is known that right-wing activists embrace alternative media and disinformation as a strategy, more than left-wing activists [123]. Other studies [36,37,51] have sought to understand this difference between liberals and conservatives based on their cognitive thinking, verifying that the most intuitive people, with little attention and little calculation, seem to be more prone to the consumption of bullshit and fake news. Intuitive thinking is also more associated with conservatives and right-wing people.

However, other studies have found that there is a tendency, not only for conservatives but also for liberals, to believe in fake news, as long as it confirms their beliefs or worldview, with an equal ideological influence for both ideologies [39,106,107,113,124]. Our results demonstrate that, regarding the Portuguese, people on the right are more likely to believe and disseminate fake news that favor the right-wing but also to believe and disseminate fake news that is pro-left, which contradicts the effect of confirmation bias. Thus, our findings pose a new discussion in the contemporary debate about the relevance of the factors that motivate the belief in fake news. The fact that right-wing people have higher levels of belief in fake news that favor the right wing and also the left wing, leads us to consider that there may be more influential indicators in a given political ideology. Regarding the belief in pro-left fake news, we find that the combination of the age and education factor presents significant differences. Our results indicate that the low level of education of right-wing people is related to a greater propensity to believe in pro-left fake news, whereas the left does not. In addition, in relation to age (the older the age group, the higher the belief values), we verify this relationship with the right-wing people and not with the people of the left. Our results therefore suggest that high age and low education may be related to the fact that right-wing individuals are more likely to accept pro-left fake news as well. Even so, the age factor seems to have more relevance, given the age distribution of the people on the right. Guess et al. (2019) also demonstrated that the age variable can be stronger than education, ideology or partisanship not only in relation to the belief in fake news but also regarding the willingness to share fake news. In Portugal, older generations have lower news literacy rates and are not avid users of social media compared to younger generations [125,126]. In addition, older people have a greater tendency to share and comment on news on online platforms [126].

When we analyze the age and education factor separately, our results demonstrate that older people, regardless of ideology, are more likely to believe in fake news. On the other hand, the low level of education indicated significant differences only with the belief in fake news pro-right and real news pro-right. Other studies [127,128] also reinforce the hypothesis that people with less education have a greater degree of acceptance and spread of fake news.

Our results indicate that gender has no influence on the belief in fake news. However, several studies have found that the consumption of false information may be related to gender differences [129,130], revealing that women are more likely to believe rumors or false information. It is important to note that our study did not explore the influence of other variables related to psychological motivations, such as, for example, the participants' personality characteristics [130,131] or their cognitive ability [36,37,132], which are aspects that may have an influence on the degree of acceptance of fake news.

Finally, our results suggest that the willingness to share content (false or true) is correlated with the belief in 'news' content. Still, the positive correlations are stronger between willingness to share and belief when it comes to the same group (SFNL-FNL, SFNR-FNR, SRNL-RNL, SRNR-RNR), which suggests that people have a greater tendency to disclose (dis) information they believe in. We believe that, in future studies, it is important to evaluate the perception of fake news according to the different political ideologies, taking into account the attitudes and habits of the participants in the media (digital media literacy), especially of the older generations in relation to the political content.

6. Conclusions

The belief and dissemination of (fake) news are related to the political ideology of the participants, classified within the scope of the left–right political-ideological dimension. Our results demonstrate that ideologically right-wing participants have a greater tendency to accept and disseminate fake news compared to individuals from the left or the political center, regardless of whether fake news favors the left or the right. The fact that right-wing participants believe in pro-left fake news more than left-wing individuals contradicts confirmation bias and may suggest that the level of education and the age of individuals may interfere with the degree of acceptance of fake news. In fact, our results showed that the low level of education and the older age group had an influence on right-wing people in believing pro-left fake news. In addition, the belief in fake news, in general, also seems to be related to lower levels of education and older people, albeit with a greater weight in right-wing people. However, the low-education factor does not appear to be stronger than the high-age factor. In general, left-wing participants are less likely to believe and disseminate fake news and real news than people in the political center and the right. Finally, it is important to mention that our study allowed us to verify that the Portuguese attribute greater credibility to real news (regardless of the ideology they favor) than to fake news, which may indicate a good omen in the fight against disinformation in Portugal.

Supplementary Materials: The following are available online at https://www.mdpi.com/article/10.3390/publications9020023/s1, Table S1: Fake news and real news headlines that were used in the questionnaire.

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Article

Influence and Relationship between Branded Content and the Social Media Consumer Interactions of the Luxury Fashion Brand Manolo Blahnik

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Abstract: Social networks are particularly significant in marketing and advertising because they provide platforms that offer interactive network channels to develop consumer brands. Among the most useful platforms of this type for capturing leads for businesses of the business to customer are Facebook®. In this sense, this research aims to analyze the degree of influence and relationship between Branded Content and the social media consumer interactions of the luxury fashion firm Manolo Blahnik in the mentioned network. This analysis allows us to see what type of content is more effective in social networks. To do this, an exploratory study was implemented with a review of the literature, followed by a correlation study, with hypothesis set to be contrasted through ANOVA analysis with SPSS software. The conclusion is that social networks facilitate interaction between brands and their followers, allowing the content and messages disseminated to achieve greater impact and commitment to the public and, therefore, increase the engagement between the brand and followers.

Keywords: communication; fashion marketing; social media; fashion brands; content analysis; customer relationship management; Facebook; branded content; engagement; social networks

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1. Introduction

The fashion industry, formed around large business groups and different commercial brands, is applying a logic typical of the network company to operate on a global scale and distribute its products throughout the planet [1]. Only one of the big commercial brands can produce as many models as all the haute couture houses in Paris in the '50 s [2].

From a business point of view, the fashion industry constitutes an activity with significant weight in a country's economy. Its structure is made up of all those companies that are dedicated to or collaborate in the creation of "fashion products", which includes firms specialized in haute couture, ready-to-wear, or "early fashion", and those that contribute directly or indirectly to the elaboration of the fashion product [3].

The purpose of this research was established to analyze to what extent the brand content disseminated in social networks is related to the interactions of the followers of luxury brands in the textile sector; specifically, we analyze the degree of influence between Branded Content and social media consumer's interactions with the luxury fashion firm Manolo Blahnik. An exploratory study was implemented with a literature review, followed by a correlational study, with hypotheses to be contrasted utilizing ANOVA analysis with the SPSS software. One of the main original contributions of this work is that it contributes to the literature and guides community managers in relation to what type of content is more effective in social networks in the context of luxury fashion.

1.1. Social Media and Fashion Marketing

The advent of Web 2.0 and the development of ICTs have changed the way organizations communicate with their audiences [4], finding in social networks the ideal platforms to expand relationships beyond physical contact and install, or offer the possibility of doing so, other types of applications to attract and retain users [5]. Thanks to them, communication is now direct, two-way, and in real time. In this sense, social networks have become a communication channel that makes possible dialog, cooperation, and content creation. Consumers 2.0 do not usually go to the corporate site when they want to obtain information about a product. They aspire to find that information on their Facebook timeline without having to do an exhaustive search. This demands a continuous presence and interaction in networks by the brand almost individually. In this way, actively listening to the client is a factor that must be considered by brands, incredibly fashionable ones, to know their target audience and create personalized campaigns that manage to call their attention above that of the competition [6].

The fashion sector has changed its ways of accessing an increasingly massive, complex, and demanding public. As a social interpretation system and as a relevant economic sector for our community, it has been transformed and grown in a general way. The processes of analysis, projection, production, distribution, and consumption have changed due to the consolidation of this new global and connected context [7].

The increase in brand awareness and customer *engagement* is a direct and undeniable consequence of social media use. It is for this reason that companies are focusing their efforts on social media marketing strategies. The research results using Facebook [8] to observe the impact of user-generated social media communication on brand value, brand attitude, and purchase intent show that although company-generated content does not appear to influence consumer perceptions of brand value directly, it does affect consumer attitudes towards the brand. Company-generated social media content can create a viral response that helps spread original advertising to a broader audience. Ideally, consumers should be attracted or encouraged to generate content that reflects support for their company's brands and products. Instagram®, on the other hand, is a social network that has become a place to showcase and share the brand ideal, as well as to present beautiful product images [9].

Without neglecting traditional formats, fashion companies activate and reinforce an alliance with the protagonists of digital platforms while recognizing the need to offer a quick response and a credible image that captures the user's confidence and potential customer. Now consumers are looking for people and institutions they can genuinely trust. Brands and companies have understood this and have become social actors in the networks and looking for connectors or people who can effectively expand their message, generating trust among their peers [10].

By 2015, 84% of the brands were planning to carry out a campaign involving influencers. It has been shown that it is well implemented within the range of communication and marketing professionals' tactics. Influencer engagement is considered a handy tool for increasing brand awareness and, to a lesser extent, generating commercial opportunities and building customer loyalty. 75% think relationships with these figures to be useful or very effective in creating commercial opportunities and supporting sales, and 76% believe that they are effective in customer loyalty strategies. Branded content distribution is the preferred scenario for brands to interact with influencers (67%). Twitter® was confirmed as the main channel for influencing engagement campaigns with 68% in terms of networks, followed by blogs with 54% and then Facebook with 51% [11]. These data indicate that many brands and agencies have become more adept at aligning influencer marketing strategies with their business strategy.

Fashion not only implies a search for personal beauty, but it is also linked to a desire to experiment with pleasure in which various sensory aspects are combined. Perceived hedonism has been shown to affect satisfaction, intention to interact, and actual interaction in a brand's Instagram® account. On the other hand, perceived originality is the most

relevant content characteristic to develop perceived hedonism, which gives significant hedonism value to create a satisfying experience [12]. Desire is the most critical driver of consumer engagement; subjective well-being (SWB) acts as a result of consumer responsibility. Experience plays an essential role in the relationship between concentration and SWB [13]. It is considered that luxury must be something that the client must have earned because the more difficult the access to a piece is, the more desirable it is for the consumer. The most used marketing strategies in luxury fashion to increase customers' Desire and make their purchase difficult are increasing the price of the product, limited production, and waiting for delivery times [14].

1.2. Research on Fashion Marketing and Social Networks

Digitalization and marketing have played a strategic role in the fashion sector [15] as well as the evolution of marketing, moving from product-based marketing (1.0) to consumer-centric marketing (2.0) to human-centered marketing (3.0) in which people are actively involved [16]. This industry's worldwide circulation is produced and increased thanks to the emergence of the new information and global economy. The diffusion of this sector does not occur as a force or an abstract idea. Instead, it materializes through different agents' actions, configuring itself according to a permanent interaction between them. Consequently, fashion results from a series of interconnected practices: market and economic, technological developments, and a series of more artistic techniques, such as marketing and design. Nowadays, images, articles, and styles are created and disseminated worldwide with speed previously unthinkable, being favored by international trade, information, communication technologies (ICT), international media, and global migration [1]. In this sense, the fashion industry has developed its form of communication which is crucial in understanding its commercialization [17]. Given this reality, researchers and professionals in the industrial sector have focused on developing studies that can offer relevant contributions, whose scope favors and guides the fashion marketing sector's development.

The analysis carried out by Gürhan-Canli, Sarıal-Abi and Hayran was descriptive [18]. In the literature systematization, two fundamental research perspectives on fashion marketing were identified: the global-local brand and the influence of culture on consumer interactions. It was found that research on global and local brands is influenced by cross-cultural research. The review results showed that the literature was mainly condensed in information processing, "self" and identity, consumer culture theory, and psycholinguistics to investigate the relationship between culture, brands, and consumers.

Evaluating users' emotional responses has become a crucial task in product design for the fashion industry. Several researchers have dedicated themselves to studying techniques for assessing and defining the best methodologies for designing and marketing fashion products. Luxury represents many consumers' aspirations [17], so luxury brands are reinventing their marketing and business strategies to adapt and face the emerging markets eager to consume luxury fashion. They position digital marketing as an essential tool for communicating the leading luxury brands in the market with younger audiences [14]. Under this perspective, Gonzalez-Romo and Plaza-Romero carried out research focused on identifying the current digital marketing strategies applied by the brands in the luxury fashion sector and knowing the most significant aspects of the brands' communication with their target audiences (stakeholders) in the virtual scenario. To achieve their objectives, they resorted to qualitative techniques, such as content analysis and in-depth interviews. This study showed that, among others, *storytelling* is one of the critical strategies in digital marketing. This format can be found in video strategies, social media, events, and exhibitions open to the public, searching for interaction with the public and showing its history.

The research implications extend to both the theory and practice of luxury fashion marketing in social media. The study presents a new perspective on the dynamics of business-to-consumer co-creation. It exhibits the application of a novel methodology for the "visual" analysis of luxury by facilitating the understanding of the meanings of images in the consumer (perceptions). In terms of practice and management, it yields new

knowledge about user-generated content in social network marketing, especially related to product interaction.

The digital environments currently articulate new possibilities of a dialog in which advertising has a challenge and amplifies their messages to settings, even outside the so-called *target* [19]. As it happens with business organizations, as communication technologies have been evolving and prospering, social media has become an integral part of fashion consumers. The effect of social media on their interaction through digital platforms is not limited only to creating a "new paradigm" for buying fashion. It also aims to boost fashion marketing, including customer service, the vicarious experience, and the option of creative advertising and new business opportunities [20].

Despite the current interest in determining and understanding the relationships between social media and consumer behavior, few academic works focus on the fashion sector and the specific marketing strategy perspectives within this field, so some topics require further research [21]. "In the new marketing scenario, translating the conventional brand strategy to the digital environment is not enough" [22] (p. 12). It is necessary to identify the critical success factors of the social media strategy and how it affects organizational performance. To clarify these issues, Wu, Guaita-Martinez, and Martin–Martin developed a study that provides a comprehensive research framework for social media, environment, marketing strategy, and performance [23]. After analyzing 207 Taiwanese brands, the results confirmed that social media strategy is positively affected by an organization's business, market, and innovation orientation. According to these authors, these findings suggest that fashion brands should focus on identifying opportunities, taking risks, producing proactive innovations, applying creativity, and developing new versions of their products.

A social network marketing strategy creates two-way communication (P2P) between organizations and current or potential consumers to improve customer relationship management (CRM). Consequently, the social media strategy provides brand visibility and supports market research. Companies have the opportunity to conduct market research, communicate with their customers, and collect feedback from them [23].

Social networks are particularly significant in marketing and advertising because of platforms that offer interactive network channels for the development of consumer brands. The most useful platforms of this type for capturing leads for business to customer (B2C) businesses are Facebook and Twitter since they share content in a non-intrusive way with advertising campaigns that provide information and content of interest to the user [24].

In this sense, Azar, Machado, and Vacas-deCarvalho point out that, although social media has been the focus of a progressive number of studies, there is still a need for empirical research on the interactions between consumers and brands on Facebook, especially about consumer motivations, to attract brands to social networks [25]. To that end, they conducted research that could provide brand managers with additional information on how to adapt their approaches and strategies to increase consumer interactions with brands on Facebook. The study, which included a convenience sample of 160 users, was based on the application of Katz's gratification theory. The intention was to develop a new typology of consumers based on consumers' motivations for interacting with brands in this network (social influence, information seeking, entertainment, trust, and reward), determining these interactions' type and intensity. The new categorization created and exposed covers four different groups of consumers defined as the "independent brand", the "brand profiteers", the "brand partners," and the "brand dependents". This new classification provides brand managers with information to develop more effective strategies according to the consumer groups they are interested in.

De-Silva, to facilitate a framework for building relationships through customer participation in Facebook-branded pages (FBP), researched with a sample of 327 university users in Sri Lanka [26], whose results pointed to the finding that customer motivations positively influence customer engagement with FBP in terms of information, remuneration, social interaction and personal identity in clothing/fashion FBPs, but not about entertainment.

Additionally, it was observed that customer engagement appears to be positively related to trust and commitment to the PBF.

The results of a study carried out by Klavech confirmed that there is a significant relationship between social influence and purchase intent. It also showed that the quality of electronic service, social impact, and electronic word of mouth (or) have a significant positive relationship with purchase intent. The substantial factor influencing purchase intent is the quality of the electronic service [27].

However, it is essential to note that research on customer opinions and tastes on Facebook still does not clarify the relevance of its role in different sectors. For example, customer reviews seem to be of great significance for technology products, but generalizing this to apparel and fashion is complex. Indeed, in the fashion industry, the question remains about how consumers build their exposure experience and social media interactions [28].

This reality has led to the imminent need to open up research spaces that allow the complex dynamics of the relationship between consumers and brands to be revealed. To this end, Bonilla, del-Olmo-Arriaga, and Andreu analyzed the interactions between fashion brands and their followers on social networks, focusing on empirically determining the relationship established between the fast-fashion company H&M and its users on the social network Instagram [29]. After the content analysis, whose purpose was to determine the commitment from the point of view of the message content, the company's communication strategy, the formal aspects, and the category of products presented in the post, the results helped to clarify those aspects of H&M's Instagram messages that generate a more significant number of interactions with users and those aspects that positively or negatively affect responses through comments and likes, having identified which attributes of the posts generate greater or lesser business of each of the three theoretical models for selecting them. Similarly, we determined those variables that generate asymmetric responses in comments and likes, which because of the variable degree of engagement they imply, pave the way for evaluating whether these differential impacts can be exploited to reformulate the digital communication strategies of the brands. From a practical point of view, this study helps managers of fast fashion brands make marketing decisions based on the evaluation of brand engagement and the understanding of social media activity's impact to increase brand image and drive consumers to buy.

It is indisputable that the most recent research regarding marketing and communications is currently focused on the digital space, whose accelerated growth and innovation provide new interactivity options for consumers and businesses. Technology, including artificial intelligence (AI), predictive learning, and augmented reality, seems to define the paths marketing and advertising professionals must travel [30]. Specifically, in the field of fashion, in the analysis of trends in the sector made by Del Olmo, Paricio, and Sanchez (cited by Frutos-Torres), they highlight, in particular, the transformation that the Internet has represented for the fashion industry, both for the transactions that are made through this channel, as well as for the significant role it has played in the dissemination of products [17]. These authors share the concept that big data has become a fundamental element in the management of communication because of the property of easily converting data into information which helps to understand audiences' profile, needs, and feelings and facilitates decision-making.

In this context, four hypotheses are put forward: The brand content influences the share (H1); brand content influences comments (H2); brand content influences the feelings of the follower towards the brand (H3); and brand content influences the positive and negative reactions of the brand follower (H4).

2. Materials and Methods

This research's main objective is to analyze to what extent there is a relationship between the Branded Content disclosed in social networks and the interactions of the followers of luxury brands in the textile sector. The textile and clothing sector represents a well-established and significant industry as it exerts a dynamic impulse on the econ-

omy [31]. Specifically, we analyze the degree of influence between *Branded Content in the* most popular social networks and the *social media consumer's interactions with the* luxury fashion firm Manolo Blahnik.

The social network analyzed in this study is Facebook because, in addition to being the most popular social network, it corresponds to a greater extent to the company's current target, while Instagram—despite having a growing trend in popularity in recent times—corresponds to a greater extent to a potential target as it is habitually used by a younger audience than Facebook users [32]. Likewise, the process of adopting luxury products is more likely to occur in a more mature target as they have greater job stability and purchasing power than among a younger target in general.

This analysis allows us to see which type of content is more effective in social networks since it provokes more reactions from followers who, in turn, can be current or potential consumers of the brand.

The brand content variable was categorized into commercial, industrial, and corporate social responsibility. The following variables were considered for social media consumer interactions: share, comments (negative, neutral and positive), brand feelings (like, love, care, haha, wow, sad, angry), and reactions (negative and positive).

For this purpose, an exploratory study was implemented with a literature review, followed by a correlational study, with hypotheses to be contrasted utilizing ANOVA analysis with the SPSS software.

Primary data were collected from the Branded Content of each of the messages posted on the Facebook social network of the luxury fashion brand Manolo Blahnik during the quarter (March, April, and May) of 2020, coinciding with the first wave of the global pandemic caused by the COVID-19 as well as measuring each of the interactions that have caused each message in the followers of that brand in the same period.

One of this work's original contributions is that the luxury fashion brand Manolo Blahnik was selected due to its brand awareness being an essential icon among luxury fashion brands, so the most popular influencers consume it. Likewise, it is one of the luxury brands chosen by the film industry as the case of the serial "Sex and the City," where it is shown as a successful branded entertainment [33]. This brand currently has more than 300 stores worldwide, including 20 flagship stores in key cities such as New York, Hong Kong, Madrid, and Geneva. The firm has more than 328,000 followers on Facebook and more than 3,325,000 followers on Instagram.

3. Results

ANOVA analysis allows us to examine the variance within a data set to determine significant differences between the mean values of a dependent variable [34]. For this work, the dependent variables to be contrasted are each of the consumer interactions.

It is especially suitable for research that analyses behavior in a digital information context. In this way, it is analyzed the effect that each of the categories of the independent categorical variable brand content has on the dependent variable, consumer interactions [35].

In each of the following subsections, we analyze the Branded Content influences in the various possible interactions in social networks.

3.1. Analysis of the Relationship between the Brand Content and the Interaction in the Degree of Share of the Brand Follower

The most enthusiastic reaction of a follower is to share content from a commercial social network on his or her web, which makes him or her a recipient of content and an active disseminator of it [36]. The following hypothesis is therefore put forward.

Hypothesis 1 (H1). *The Brand Content influences the Share.*

Table 1 shows that out of a total of 9 messages published with industrial brand content by the firm Manolo Blahnik, the average share was 16.67, with a minimum of 6 and a

maximum of 60 shares. On the other hand, of the 28 publications with commercial brand content, the followers had an average share of 53.29, with a minimum of 7 and a maximum of 257. On the other hand, in the case of publications concerning Social Responsibility, they had an average share of 46.29, with a minimum of 1 and a maximum of 142 in shares. For all categories of Branded Content, the standard deviation is very high, which is usual since followers' behavior in social networks is very diverse.

Table 1. Descriptive statistics of share according to brand content.

	N	Media	Standard Deviation	Standard Error	95% Confidence Interval for the Mean		Minimum	Maximum
					Lower Limit	Upper Limit		
Industrial	9	16.67	16.793	5.598	3.76	29.57	6	60
Commercial	28	53.29	56.646	10.705	31.32	75.25	7	257
Social responsibility	25	49.12	35.279	7.056	34.56	63.68	1	142
Total	62	46.29	45.849	5.823	34.65	57.93	1	257

However, in Table 2, according to the F statistic of the ANOVA analysis for 95% confidence, the differences between the average consumer shares and the different categories of brand content are not significant, with F of 2.352 a Sig. 0.104 > 0.05, so the H1 hypothesis is rejected. This may be because the interrelations of followers concerning commercial publications and social responsibility publications have an average share of more than 46 claims in both cases, which is very favorable for brand diffusion. On the other hand, in the more industrial brand content, the interactions in terms of share are lower than in the two previous categories. Still, even so, the diffusion continues to be active.

Table 2. Share ANOVA statistics according to brand content.

	Sum of Squares	gl	Half a Quadratic	F	Next
Between groups	9468.420	2	4734.210	2.352	0.104
Within groups	118,764.354	59	2012.955		
Total	128,232.774	61			

3.2. Analysis of the Relationship between Branded Content and Interaction in the Brand Follower Comments

Another unusual behavior of a brand's followers in social networks is their comments, since they become prescribers of the brand, especially when these comments are positive. Therefore, the following hypothesis is proposed to be contrasted.

Hypothesis 2 (H2). *Brand Content Influences Comments*.

Table 3 shows that in a total of 9 messages published with industrial brand content by the firm, the average positive comments were 3.56, neutral 0.22, and zero harmful. On the other hand, in the face of the 28 publications with commercial brand content, the followers have had 14.43 positive comments on average, 1.43 neutral, and 0.18 negative. On the other hand, in the case of social responsibility publications, they have had 11.56 positive comments on average, 2.52 neutral, and 0.16 negative. Again, for all brand content categories, the standard deviation is very high, which is usual since the degree of participation in comments from followers in social networks is very diverse.

Table 3. Descriptive statistics of the comments according to the brand content.

		N	Media	Standard Deviation	Standard Error	95% Confidence Interval for the Mean		Minimum	Maximum
						Lower Limit	Upper Limit		
Positive comments	Industrial	9	3.56	4.746	1.582	−0.09	7.20	0	15
	Commercial	28	14.43	22.608	4.273	5.66	23.20	1	105
	Social responsibility	25	11.56	10.186	2.037	7.36	15.76	1	42
	Total	62	11.69	16.830	2.137	7.42	15.97	0	105
Neutral comments	Industrial	9	0.22	0.667	0.222	−0.29	0.73	0	2
	Commercial	28	1.43	1.894	0.358	0.69	2.16	0	7
	Social responsibility	25	2.52	4.602	0.920	0.62	4.42	0	18
	Total	62	1.69	3.257	0.414	0.87	2.52	0	18
Negative comments	Industrial	9	0.00	0.000	0.000	0.00	0.00	0	0
	Commercial	28	0.18	0.390	0.074	0.03	0.33	0	1
	Social responsibility	25	0.16	0.473	0.095	−0.04	0.36	0	2
	Total	62	0.15	0.399	0.051	0.04	0.25	0	2

On the other hand, Table 4 shows that according to the F statistic of the ANOVA analysis for 95% confidence, the differences between the average comments of the followers and the different categories of brand content are not significant, with an F of 1.443 a Sig. 0.244 > 0.05 in the case of positive comments, with an F of 1.867 one sig. 0.164 > 0.05 in the case of neutral words and an F of 0.705 one sig. 0.498 > 0.05 in the case of negative comments, so the H2 hypothesis is rejected. This may be because followers' interrelationships concerning commercial publications and social responsibility publications are very similar since they publish comments with an average somewhat higher of 14 and 11 positive comments, respectively. Slightly more than 1 and 2 neutral average comments and scarcely 0.18 and 0.16 negative comments. On the other hand, in the more industrial brand content, the interactions in followers' comments are lower than in the two previous categories. Still, even so, the diffusion continues to be active and positive.

Table 4. ANOVA statistics of comments according to brand content.

		Sum of Squares	gl	Half a Quadratic	F	Next
Positive comments	Between groups	805.938	2	402.969	1.443	0.244
	Within groups	16,471.239	59	279.174		
	Total	17,277.177	61			
Neutral comments	Between groups	38.525	2	19.262	1.867	0.164
	Within groups	608.653	59	10.316		
	Total	647.177	61			
Negative comments	Between groups	0.226	2	0.113	0.705	0.498
	Within groups	9.467	59	0.160		
	Total	9.694	61			

3.3. Analysis of the Relationship between the Brand Content and the Interaction in the Feelings of the Follower towards the Brand

An expected behavior among brand followers is to share the emotions generated by each of the publications. Therefore, the following hypothesis is proposed.

Hypothesis 3 (H3). *Brand Content influences the feelings of the follower towards the brand.*

In Table 5, you can see that in a total of 9 messages published with brand content industrial by the brand Manolo Blahnik, the feelings spread by the followers were 322.44 likes media, 79 loves media, 2.44 care media, 0.11 haha media, 2.44 wow media, and no sad, nor angry feelings. In the case of the 28 publications with commercial brand content, the followers have had 817.36 likes on average (where a minimum of 233 and a maximum of 3000 likes were shared), 262.71 loves on average, 4.46 care on average, 0.75 haha on average, 17.04 wow on average, 0.07 sad on average and 0.04 angry. On the other hand,

in the case of publications referring to Social Responsibility, it is worth noting that they have had an average of 875.88 likes, an average of 237.48 loves, an average of 2.84 care, an average of 0.64 haha, an average of 11.04 wow, an average of 0.12 sad and an average of 0.24 angry. Again, for all the brand content categories, the standard deviation is very high, which is usual since followers' type of feeling in social networks is very diverse.

Table 5. Descriptive statistics of feelings according to brand content.

		N	Media	Standard Deviation	Standard Error	95% Confidence Interval for the Mean		Minimum	Maximum
						Lower Limit	Upper Limit		
Likes	Industrial	9	323.44	265.895	88.632	119.06	527.83	105	1000
	Commercial	28	817.36	678.256	128.178	554.36	1080.36	233	3000
	Social responsibility	25	875.88	550.066	110.013	648.82	1102.94	166	2100
	Total	62	769.26	605.791	76.935	615.42	923.10	105	3000
Love	Industrial	9	79.00	89.577	29.859	10.15	147.85	26	313
	Commercial	28	262.71	279.253	52.774	154.43	371.00	34	1200
	Social responsibility	25	237.48	212.189	42.438	149.89	325.07	24	893
	Total	62	225.87	239.049	30.359	165.16	286.58	24	1200
Care	Industrial	9	2.44	3.395	1.132	-0.17	5.05	0	10
	Commercial	28	4.46	8.934	1.688	1.00	7.93	0	37
	Social responsibility	25	2.84	4.059	0.812	1.16	4.52	0	13
	Total	62	3.52	6.640	0.843	1.83	5.20	0	37
Haha	Industrial	9	0.11	0.333	0.111	-0.15	0.37	0	1
	Commercial	28	0.75	1.236	0.234	0.27	1.23	0	5
	Social responsibility	25	0.64	0.907	0.181	0.27	1.01	0	3
	Total	62	0.61	1.030	0.131	0.35	0.87	0	5
Wow	Industrial	9	2.44	3.005	1.002	0.13	4.75	0	9
	Commercial	28	17.04	28.177	5.325	6.11	27.96	0	120
	Social responsibility	25	11.04	10.960	2.192	6.52	15.56	0	51
	Total	62	12.50	20.618	2.619	7.26	17.74	0	120
Sad	Industrial	9	0.00	0.000	0.000	0.00	0.00	0	0
	Commercial	28	0.07	0.262	0.050	-0.03	0.17	0	1
	Social responsibility	25	0.12	0.332	0.066	-0.02	0.26	0	1
	Total	62	0.08	0.275	0.035	0.01	0.15	0	1
Angry	Industrial	9	0.00	0.000	0.000	0.00	0.00	0	0
	Commercial	28	0.04	0.189	0.036	−0.04	0.11	0	1
	Social responsibility	25	0.24	0.436	0.087	0.06	0.42	0	1
	Total	62	0.11	0.319	0.041	0.03	0.19	0	1

Table 6 shows that according to the F statistic of the ANOVA analysis for 90% confidence, the differences between the average feelings of the followers and the different categories of brand content are significant with an F of 3.1153 one sig. 0.052 < 0.10 in the case of likes, and on the opposite side for angry, it has an F of 3.66 one sig. 0.032 < 0.05 at 95% confidence, so the H3 hypothesis is accepted. This may be because the feeling commonly shared in all social networks is like the one that is most shared by followers in social networks before the publications they like. Therefore, it is particularly striking that they want commercial publications and significantly like publications with a corporate social responsibility brand content. For its part, in the more industrial brand content, the interactions in terms of followers' feelings are lower than the two previous categories. Still, even so, the spread of likes 323.44 times shared remains positive.

3.4. Analysis of the Relationship between the Brand Content and the Interaction in Reactions of the Follower towards the Brand

The followers' responses to the brand can be positive or negative in each of the publications of brand content, so in this section of the work, we contrast the following hypothesis.

Hypothesis 4 (H4). *Brand Content influences the positive and negative reactions of the brand follower*.

In industrial brand content, all responses were positive, with an average of 407.44 (see Table 7). On the other hand, for the commercial brand content, the positive reactions were significantly high on average at 1102.32 and with only 0.11 adverse reactions. Finally, the

most increased average positive responses for the social responsibility brand content stand out, with an average of 1127.88 positive reactions and only 0.36 adverse reactions.

Table 6. ANOVA statistics of feelings according to the brand content.

		Sum of Squares	gl	Half a Quadratic	F	Next.
Likes	Between groups	2,137,732.580	2	1,068,866.290	3.115	0.052
	Within groups	20,248,179.291	59	343,189.480		
	Total	22,385,911.871	61			
Love	Between groups	235,517.013	2	117,758.507	2.138	0.127
	Within groups	3,250,293.954	59	55,089.728		
	Total	3,485,810.968	61			
Care	Between groups	46.937	2	23.469	0.524	0.595
	Within groups	2642.547	59	44.789		
	Total	2689.484	61			
Haha	Between groups	2.811	2	1.405	1.340	0.270
	Within groups	61.899	59	1.049		
	Total	64.710	61			
Wow	Between groups	1539.353	2	769.677	1.862	0.164
	Within groups	24,392.147	59	413.426		
	Total	25,931.500	61			
Sad	Between groups	0.100	2	0.050	0.654	0.524
	Within groups	4.497	59	0.076		
	Total	4.597	61			
Angry	Between groups	0.685	2	0.343	3.660	0.032
	Within groups	5.524	59	0.094		
	Total	6.210	61			

Table 7. Descriptive statistics of the reactions of the follower according to the brand content.

		N	Media	Standard Deviation	Standard Error	95% Confidence Interval for the Mean		Minimum	Maximum
						Lower Limit	Upper Limit		
Positive reactions	Industrial	9	407.44	360.675	120.225	130.21	684.68	132	1333
	Commercial	28	1102.32	988.640	186.835	718.97	1485.68	270	4325
	Social responsibility	25	1127.88	758.051	151.610	814.97	1440.79	190	2946
	Total	62	1011.76	859.619	109.172	793.46	1230.06	132	4325
Negative reactions	Industrial	9	0.00	0.000	0.000	0.00	0.00	0	0
	Commercial	28	0.11	0.315	0.060	-0.01	0.23	0	1
	Social responsibility	25	0.36	0.569	0.114	0.13	0.59	0	2
	Total	62	0.19	0.438	0.056	0.08	0.30	0	2

Table 8 shows how the positive and negative reactions according to the category of the brand content show significant differences at 90% confidence. In positive responses, the F statistic is 2.758 with a significance of 0.072 < 0.10, as well as the adverse reactions with an F of 3.501 and a significance of 0.037 < 0.10 even 0.037 < 0.05. Hence, it is accepted the hypothesis that the brand content influences the positive and negative reactions of the follower towards the brand.

Table 8. ANOVA statistics of positive and negative reactions according to the brand content.

		Sum of Squares	gl	Half a Quadratic	F	Next.
Positive reactions	Between groups	3,853,510.402	2	1,926,755.201	2.758	0.072
	Within groups	41,222,150.969	59	698,680.525		
	Total	45,075,661.371	61			
Negative reactions	Between groups	1.239	2	0.619	3.501	0.037
	Within groups	10.439	59	0.177		
	Total	11.677	61			

4. Discussion and Conclusions

Social networks have been consolidated as a potential tool in transmitting Content between institutions, in this specific case, between brands and their audience. Studies on engagement processes have been very relevant and recurrent in recent years, to the extent that they have become one of the main objects of research on social networks both from the academic and business perspective since their impact affects various areas such as marketing, education, or media [37].

In this context, the purpose of this research has been established in analyzing to what extent the brand content disseminated in social networks is related to the interactions of the followers of luxury brands in the textile sector. The measurement of this type of Content tends to be done considering the variables present in digital platforms, such as the number of likes, comments, and the option of sharing a publication [37]. To this end, four hypotheses were formulated:

4.1. The Brand Content Influences the Share

Concerning this first one, it is worth mentioning that Share is the most dynamic behavior that one could wish for from a follower to be the most ambitious goal for brands. Based on the findings obtained, there are significant differences in the degree of Share of a Manolo Blahnik follower when he observes an industrial publication to when he attends a commercial publication, being in the latter case the interaction much more active since with the industrial publication he shares almost 17 times on average and with the industrial one he shares a little more than 53 times. Likewise, in the case of social responsibility publications, the interactions continue to be very considerable, with an average share of just over 49.

4.2. Brand Content Influences Comments

As for the second hypothesis, the followers' comments are generally optimistic about the brand content of the firm Manolo Blahnik, with very few neutral comments and practically no negative ones. Therefore, the word of most followers contributes positively to the diffusion of the brand. However, as in previous studies, the conversation is the least widespread reaction on Facebook. In this sense, the user tends to prefer interacting with the content through likes or replies or even sharing it rather than writing comments, since the latter activity is usually more common in other types of networks such as Instagram, where there are a greater preference and tendency to generate conversation through the option of comments [38].

4.3. Brand Content Influences the Feelings of the Follower towards the Brand

Regarding the third hypothesis of the study, it is essential to note that the brand content with social responsibility content generates a high number of likes significantly over the rest of the brand content categories. It is also very high the number of likes caused by the commercial contents. On the other hand, although they also generate a significant number of likes, industrial contents are significantly lower than the two previous categories. For its part, love is the most extreme feeling of pleasure, being very considerable, as they are more than 200 times on average that is shared as a feeling both in the commercial brand

content and social responsibility. Negative emotions are, however, practically negligible in all types of brand content. However, in line with previous research in the fashion sector, it is worth noting the confirmation of the supremacy of the majority use of "like" in all categories, above all other possible reactions offered by Facebook [39,40], indicating that this option is the most widespread among users who decide to interact through the function of the reaction buttons in the various publications of the brand.

4.4. Brand Content Influences the Positive and Negative Reactions of the Brand Follower

On this path and concerning the fourth and last hypothesis, the results show that an upbeat assessment of the followers of Manolo Blahnik of the brand content published on Facebook can be seen, which fundamentally causes positive reactions from the most industrial brand content, being highlighted the positive reactions caused by the commercial brand content and above all the positive responses to publications on corporate social responsibility brand content. Therefore, the results of this work contribute not only to the literature but also to orient the brand content of luxury fashion brands published on Facebook.

From the conclusions reached, it is essential to emphasize that it is undeniable, therefore, that digital platforms, such as in this specific case, social networks, facilitate the processes of interaction between brands and their followers, allowing the contents and messages disseminated to achieve more significant impact and commitment to the public and, therefore, increase the engagement between the brand and its followers. These types of resources provide users with the possibility to dialogue, participate and interact with content creators and transmitters [37], favoring two-way communication and benefits for both parties [41]. However, it also implies challenges for both the audience and brands, since on the one hand, users require the knowledge, skills, and attitudes necessary to critically address the messages received through these media, as well as for brands, which have to adapt to the continuous changes, trends, tastes and characteristics offered by social networks, to achieve more significant commitment and reach of their publications. It should not be forgotten that brands use communication strategies, among which is the commercial one. Hence, many of the journals they share with the community are for sales purposes [42].

Hence, commercial publications have the interaction much more active than the industrial publications respect to share. The findings show that Manolo Blahnik's followers have an optimistic assessment of the brand content published on Facebook, which provokes positive reactions to the industrial brand content, to a greater extent, the commercial brand content provokes positive reactions and highlights the positive responses of the followers to the publications on corporate social responsibility brand content. Regarding the interactions of the followers' consumer comments, they are generally optimistic about the brand content of the firm Manolo Blahnik, with very few neutral comments and practically no negative ones regardless of the type of content published. In relation to interaction feeling, the brand content with social responsibility content generates a high number of likes significantly over the rest of the brand content categories.

The findings show that Manolo Blahnik's followers have an optimistic assessment of the brand content published on Facebook, which provokes positive reactions to the industrial brand content, to a greater extent, the commercial brand content provokes positive reactions and highlights the positive responses of the followers to the publications on corporate social responsibility brand content.

Another of the managerial implications of this paper is that it is recommended to take advantage of brand content in social networks as a communication strategy to reach the target audience, given that during the COVID19 pandemic period, users of social networks use them more for entertainment and socializing with their environment, making it more accessible to them through this medium than through conventional means during periods of confinement.

In future lines of research, firstly, the study can be extended to other social media profiles of the brand. Additionally, a comparative analysis of other luxury fashion brands can be established to compare communication management, Content generation strategies and the impact on interaction and engagement generated with the audience.

Similarly, it could be interesting to carry out a qualitative analysis concerning user comments, which would allow a more comprehensive view of the opinion that the public has about the brand, the way they express their ideas or points of view, and the interactions produced around the publications both aimed at the brand itself or with other users. In this line and even taking into account that the findings have shown a presence of significantly shallow adverse reactions, this approach could help to understand better the possible dissatisfaction of specific part of the followers of the brand and its forms of expression, which would imply an interesting approach taking into account that the opinions of the audience may favor, but also harm the brands [39].

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Article

The Importance of Rumors in the Spanish Sports Press: An Analysis of News about Signings Appearing in the Newspapers Marca, As, Mundo Deportivo and Sport

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Abstract: The front pages of newspapers are the main showcase to sell the product. Those first pages are a perfect hook for newspapers to attract readers; thus, it becomes vital to show striking pieces of information, captivating the audience. In the case of the written sport press in Spain, there is a key period in which true information is mingled with half-truths and even rumors: The summer transfer window. This paper shows an analysis of the front-page news appearing in the Spanish sports newspapers Marca, As, Mundo Deportivo, and Sport, over a five-year period (2015–2019), based on a sample of 120 different issues of the newspaper. Many times, the media present information either as something true or as a hypothesis or possibility. After quantitatively analyzing that, it can be noticed that in more than 50% of the cases, the signing or sale of the player referenced on the front page (the main news) does not occur. Similarly, it can be observed that there is a direct link connecting the news referring to Real Madrid with Marca and As, and Fútbol Club Barcelona with Mundo Deportivo and Sport. Finally, almost 100% of this news is showed along with real photographs, using photo montage in just a few cases.

Keywords: sport press; Marca; As; Mundo Deportivo; sport; rumor; signing; transfer; Real Madrid; Barcelona; journalistic rumor

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1. Introduction

Nowadays, Marca—a sports newspaper—stands for the most widely read newspaper in Spain, representing more readers than any other general-interest newspaper, such as El País or El Mundo. That is according to results that have arisen from the General Media Study (Estudio General de Medios—EGM) [1], released on a quarterly basis by the Spanish Association for Media Research (Asociación para la Investigación de los Medios de Comunicación—AIMC).

Then, it is no mere anecdote that, according to the AIMC, amongst the 10 most-read newspapers in Spain, there are four specialized in sports news. Apart from Marca, we have to mention As, Mundo Deportivo, and Sport, also in the top 10 (Figure 1).

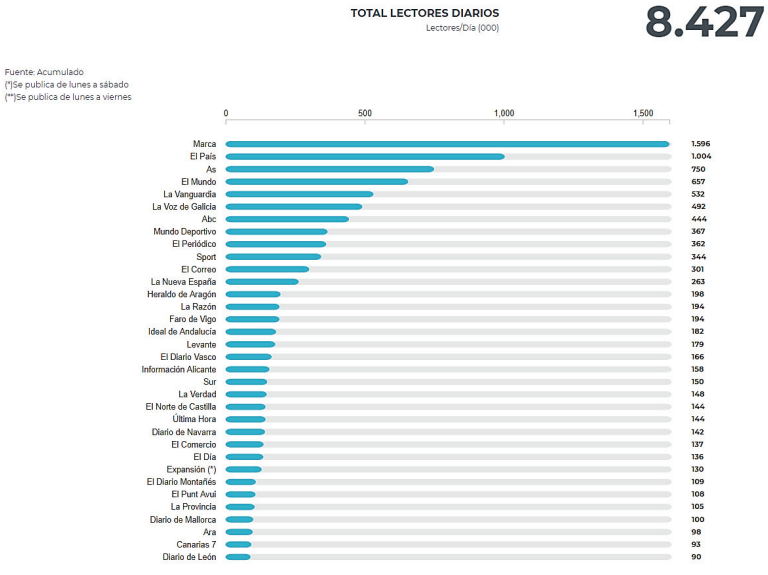

Figure 1. Ranking of the most read newspapers in Spain according to the Estudio General de Medios (EGM) carried out by the Asociación para la Investigación de los Medios de Comunicación (AIMC). Source: EGM 2020. Source: https://reporting.aimc.es/index.html#/main/diarios.

It is true that there is a declining trend in the number of readers, as it is the case of the rest of in-print newspapers in this country, and virtually worldwide. This situation is similar for both the written press (newspapers) and magazines or newspapers supplements (Figure 2).

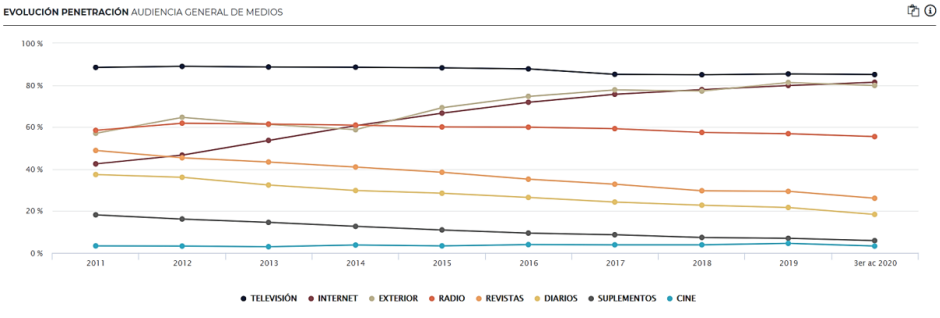

Figure 2. In-print media trend over the last decade according to the EGM. Source: EGM 2020. Source: https://reporting.aimc.es/index.html#/main/cockpit.

In terms of media impact, Spaniards consume far more sport news than in any other country, applying the classic division between sport-practice and sport-entertainment [2] (p. 4). This is verifiable. To do so, we could take any media as an example.

Apart from the one already mentioned, that of the written press, we cannot ignore the fact that the most watched TV programs in Spain are related to sports. Amongst them, sports broadcasts are in the lead, according to different companies specialized in audience measuring, such as the Kantar group.

For example, on the Formulatv.com website [3], which draws on data from Kantar Media, taking as a reference the last three years, in 2020, 3 of the 10 most watched television

events of the year (the first 3) were sporting events [4]; in 2019, 6 of the top 10 most viewed events of the year were sporting events [5]; and in 2018, the top 10 most viewed television events were sports content [6].

Moreover, it is noted that the main generalist radio broadcasters in Spain, including the four most listened (Cadena SER, COPE, Onda Cero, and Radio Nacional de España), devote a lot of their time to sport issues, especially during the weekends. Those last are seized by sport events, especially association football (henceforth, football) broadcasting. Besides, we cannot forget to mention Radio Marca, exclusively focused on sport news.

It is common for mass media to analyze the most popular shows after each sporting event. Among the 10 most followed, from Monday to Friday, there are almost always night sports programs such as "El Larguero" (SER channel) or "El Partidazo" (COPE); and broadcast shows are the most listened to on weekends [7].

Nor should we ignore the importance of websites such as marca.com [8], as.com [9], mundodeportivo.com [10], or sport.es [11]. Some of them are supported by the number of users whose data have been certified by comscore.com or introl.es, a subdivision of the interactive Spanish Broadcast Verification Office (Oficina de Justificación de la Difusión—OJD) [12]. Along with all this, we have social media, where sport news is shared referencing the previous media and others [13–15]. In conclusion, the importance of sport-entertainment within Spain has been clearly demonstrated [16,17].

Usually, when we refer to all these mass media, including the written press (under consideration on this paper) we can divide sports information into two large groups: Sport broadcasts, that is, live information; and news (news, articles, reports, interviews), that is, on-demand information.

When dealing with live information (especially broadcasts), it can rarely be conveyed as rumors or false news, nowadays encompassed in the term fake news. If a football game is broadcasted, the result will be immovable and hence, difficult to fake. A certain team will win and that is irrefutable. There is a different issue regarding the greater or lesser subjectivity with which said event is broadcasted, influenced by multiple factors. As an example of that, we can find the mere placing of opinion remarks next to the factual information, and even the opinion itself disguised as information, thus trying to share as factual information something that, in fact, is not. However, we would find ourselves surrounded by subjectivity and shifting words, since it becomes especially difficult to measure statements such as "a team played well/badly" or "such an athlete deserved/did not deserve to win".

It is in the second group that we mentioned where we can face information that, in fact, is not such. Within this second group, we encounter a wide range of journalistic genres (report, interview, news, articles . . .); amongst them, there is perhaps one that stands out in terms of rumors contained: The news. It is precisely that which is intended to be carried out and reflected on this paper, focusing on the front pages of newspapers and the news showed in them. We will limit the sample to news about possible player signings or sales carried out during a specific period, which will be later detailed.

2. Theoretical Framework

Founded in Barcelona in 1856, El Cazador can be considered as the first sports publication in Spain [18–20]. Since this very first publication appeared, many others have emerged in the field, showing different particularities especially on periodicity and changing lifecycles.

These days, as far as sports press is concerned—not taking into account specialized magazines but only daily published press with varied sports information—there are four widely read sports newspapers; as already indicated in the introduction: Marca, As, Mundo Deportivo, and Sport, with Marca in the lead.

Currently based in Madrid, Marca was founded in San Sebastián as a weekly newspaper in 1938, amidst the Spanish Civil War. Currently, its main headquarters are in Madrid. In terms of information, its most requested one is that related to Madrid teams, especially

Real Madrid. As dates from 1967 and it is also based in Madrid. Its target is focused on Madrid as well, especially in its two main teams: Real Madrid and Atlético de Madrid.

First published in 1906, Mundo Deportivo has its headquarters in Barcelona. It is one of the 10 most widely read Spanish newspapers and its target group comprises mainly FC Barcelona fans. Founded in 1979, also established in Catalonia, and a pioneer in the use of color in its pages, Sport also bases its information on FC Barcelona.

The four mentioned sports newspapers offer information on all Spanish clubs, with football being their main topic (between 50% and 80% of the information on their pages, depending on the period of the year and the newspaper).

2.1. The Importance of the Front Page

Obviously, as it is the case of all printed media, the front page is an ideal showcase, the first thing the reader sees, an "open window" [19] (p. 89). We will focus the study on front pages because "within the agenda settings established by the media, in this case by the newspapers, the preferential news will take large spaces on the front page and, therefore, will be considered as the main news" [21] (p. 1355).

The front page is the first contact with the reader [22] (p. 145). Therefore, "it is important to amaze and inform, using for that 'content inserted into a container'" [19] (p. 89). In addition, "there are great differences between the front pages appearing on the general information press and those of sports press" [21] (p. 1355). Similarly, when using headlines or photographs: "The design of general information newspapers tend to be somehow visually organized, whereas the sports press uses more daring and silhouetted images on many occasions" [23]. Moreover, we cannot forget the importance of the linguistic flow [24].

However, anything goes when talking about information? We must consider the importance of newspapers sales [25]. Those sales will be based on the amount of striking information showed, especially on the front page—frequently considered as collectible products. It is precisely there where the thin red line between information, rumor, and semi-truths comes into play. Does anything go? Which of the information is true on those front pages? To answer those questions will be the object of this study.

When flicking though a newspaper, the reader "will expect information to be displayed in the usual way of his often-read newspaper, from the very front page to the end. A good, witty cover that you like [...]" [25] (p. 471). However, this is where another question arises: Do newspapers show real information or, on the contrary, just information that the reader would like to be real?

We could pose many questions related to this issue; nevertheless, we do not intend to embrace all of them here. To do so, we would require methodological techniques different from those used to conduct this study. It is difficult to identify what is being told in the newspapers and its intention. Likewise, it is difficult to determine the number of sources of information, their credibility, and whether there has been a cross-checking process. To clarify those aspects, we could interview newspaper editors and journalists. Neither is it easy to measure the satisfaction rate of readers with the information received; however, it could be useful to go further on this, conducting surveys or setting focus groups. Here, we introduce potential lines of research that could be designed considering future data.

The objective of this work is to discover to what extent the news appearing during the summer transfer window is true.

2.2. The Thin Line between Rumor, Semi-Truths and Fake News

In the field of journalism, information is clearly differentiated from opinion. The news is information, and it must be based on cross-checked facts (coming from a plurality of sources); thus, it is objective. On the contrary, opinion is subjective. Any journalistic content perceived by the reader as news should be objective and cross-checked [26]. That said, in the sports press, it is quite common to find headlines announcing possible signings that are later not materialized. In those cases, the media justify themselves saying that

there existed rumors; or even, that there was an intention to effect those signings but it did not happen, due to different circumstances. In this case, they argue that the headline did have a true content, but that it could not be entirely realized—which would be a semi-truth. Nevertheless, there is also a third possibility: It was fake news, referring to false information—which may include a part of real content—and has an intention to harm or/and clearly benefit a specific group. There is a thin line between rumor, semi-truths, and fake news, leaving the reader unprotected and journalism called into question.

In order to understand the concept of fake news in any of these variants, research is based on the fact that, almost always, these news are given as true even though they are not, nor will they ever be, beyond the fact that there could be fond indications of veracity which may occur (for example, a transfer), either with a greater or lesser probability. The problem here is the lack of use of the conditional tense, which would surely detract from the ultimate goal of the headline. So it is preferable to start for example "Luis Suárez will sign for Atlético de Madrid" instead of "Luis Suárez could sign for Atlético de Madrid". Obviously, the use of the conditional indicates that "could" or "could not" and the news would cease to be such, when all options were left open.

These three concepts (rumor, semi-truth, and fake news) share a common feature: cContent is not cross-checked. In the case of fake news, they are based on false or misleading information: The reason that they are included within the term misinformation [27–30]. According to Merriam Webster Dictionary (2020), rumor is a "talk or opinion widely disseminated with no discernible source". From this definition two conclusions can be derived. On the one hand, there exists a message; however, we do not know to what extent it is true. On the other hand, there is a mention to a discernible source, who/which we do not know. In his research project, Mazo [31] (p. 47) concludes that rumor in the social communication field is "spontaneous, elusive and spreads exponentially, developing an interesting and ambiguous content which is modified in a metamorphic process; all that with the intention of appearing credible to their audience".

This author explains that rumor possesses some unique characteristics. Its sources are anonymous, but paradoxically they are perceived as very credible. The message is very attractive, appealing, and can create uncertainty, pose questions, and provide impartial answers—for which we need more information. In many cases, it mostly refers to confidential information, the reason that the reader considers it to be something valuable and interesting [32] that has not been officially published yet. Moreover, it also tends to be perceived as true. Telling this information is considered an "imperative need", the reason that it is spread (p. 47). It is shared with a selected and like-minded audience, considered to be interested in the subject and willing to embrace it. The spread of rumor is directly proportional to the interest in the subject and its ambiguity [33].

In the case of sports press readers, rumors about signings are very appealing, since the entering/exiting of players in a team directly affects its performance on the field. Due to these particularities, rumors spread faster than cross-checked news. This is because they are surrounded by some uncertainty, which allows people to take positions for or against. Sharing this type of content reinforces the sense of belonging to a group [31] (pp. 40–41). In the case of sport, this has been utilized to establish ideological links, thus supporting the construction of identities, which are even in some cases ethnic and territorial [34]. In Spain, a country where great internal nationalist political positions and territorial disputes are ubiquitous, football is not alien to this situation. That is the reason that certain teams are usually considered as supporters of certain political views (for example, FC Barcelona regarding the Catalan independence movement, and Real Madrid as defender of the unity of Spain), a situation reflected in the bias of the different media [35].

Hoax is something accepted or established by fraud or fabrication (Merriam Webster, 2020) [26], so it can be considered a synonym for fake news, with the difference that this term is only used by mass media. Shudsonand Zelizer [36] reminds us that the intentional spreading of false news seeking a particular purpose has been on scene since the very beginning of journalism. Thus, they mention how in the USA, Thomas Jefferson told a

friend in 1807: "the man who never looks into a newspaper is better informed than he who reads them; inasmuch as he who knows nothing is nearer to truth than he whose mind is filled with falsehoods & errors".

Lazer has coordinated a group of 16 researchers who have studied the media publishing fake news, proposing this definition: "We define "fake news" to be fabricated information that mimics news media content in form but not in organizational process or intent". These media lack of processes and standards to guarantee the truthfulness of their content. In this context, they call for interdisciplinary research to be carried out in order to reduce the spread of fake news, since professionals in journalism must provide objective and reliable information [37] (p. 1094).

3. Objectives and Hypotheses

The main objective of this study is to determine to what extent the news appearing on the front pages of newspapers during the summer transfer window (2015–2019) were true; therefore, focusing on a specific type of news: signings and sales of players. It was our decision to not include the year 2020 in our study, since it does not represent an average year for the signing/transfer market (hardly any), due to the COVID-19 pandemic.

The baseline scenarios (hypotheses) are:

1. At least 50% of the signings, possible signings, renewals, or players leaving the teams, announced on the front pages, are not materialized.
2. More than 25% of the signings, possible signings, renewals, or players leaving the teams, announced on the covers, are accompanied by photo montages. In those, the players wear the shirt of the hypothetical team in which they would play.
3. More than 80% of Marca and As front pages are devoted to Real Madrid players, either as a source or as a target.
4. More than 80% of Mundo Deportivo and Sport front pages are devoted to Barcelona players, either as a source or as a target.
5. More than 80% of this news is accompanied by photographs.

4. Methodology

The methodology appearing on this paper exclusively responds to quantitative techniques. A series of variables was established (Table 1), in order to resolve the previously formulated hypotheses. It has been deemed appropriate to use this methodology as it includes "a set of, increasingly perfect and constantly improving, methodological instruments applied to extremely diversified forms of speech (both content and container)" [38] (p. 7).

Table 1. Variables to analyze. Compiled by author.

Newspaper	Marca/As/Mundo Deportivo/Sport
Date	According to criteria stated in "population and sample"
Piece of news	Indicate the piece of news
Headline	Indicate the main headline on the front page
Name of the player	Indicate the name of the player, subject of the front page
Team involved	Indicate name of the team, subject of the front page
The piece of news is materialized	Indicate whether the information referred in the piece of news is materialized
Includes photograph(s)	Indicate if it includes a photograph of the player referred.
Includes photo montage	Indicate if it includes a photo montage featuring the player referred

Here we face a content analysis, defined by Krippendorff [39] (p. 21) as: "[...] a research technique for making replicable and valid inferences from data to their context". Likewise,

Berelson [40] (p. 18) defines it as "a research technique for the objective, systematic and quantitative description of the manifest content of communication", in the same line as other authors [41].

After conducting a systematic research through the main bibliographic reference sources (mainly WOS and Scopus), as well as recent review papers [42–45], we do not know of any other research papers similar to the analysis proposed here, with content methodology of a representative sample of news items that appeared in the press, in which the researchers themselves contrasted the truth of the news, with the exception of an isolated case taken to the United States sports arena [46]. Therefore, this methodological approach is novel and can be applied to any type of news, not only in the sports field. However, we can find approximations in studies related to fake news in digital media as blogs or online newspapers [47–49], but our study addresses the traditional press where the computerized possibilities of detecting fake news are not so many.

The final veracity of the news was contrasted with knowing if a certain player was still part of the squad or not, through the official data from La Liga (https://www.laliga.com/) [50] taking into account that all players who appear on this headline would have a relationship with the Spanish League (either because they were signing for a Spanish club or were no longer part of the squad of a Spanish club).

4.1. Scope of Study

The scope of this study extends only to news about football signings or possible signings analyzed according to certain factors previously detailed.

4.2. Population and Sample

The population would be made up of Marca, As, Mundo Deportivo, and Sport copies published in a period of five years (2015–2019) (Table 2).

Table 2. Sample. Compiled by author.

		MARCA	AS	MUNDO DEPORTIVO	SPORT	TOTAL
2015	JUL	3	3	3	3	12
	AUG	3	3	3	3	12
2016	JUL	3	3	3	3	12
	AUG	3	3	3	3	12
2017	JUL	3	3	3	3	12
	AUG	3	3	3	3	12
2018	JUL	3	3	3	3	12
	AUG	3	3	3	3	12
2019	JUL	3	3	3	3	12
	AUG	3	3	3	3	12
TOTAL		30	30	30	30	120

The convenience sample will be delimited according to these criteria:

(A) Firstly, we will only consider front pages published over the months of July and August, thus coinciding with summer transfer window period in the Spanish football league.
(B) We will only use the front pages published on the three first days of July; consequently, the first three front pages. Those shall be related to a signing, possible signing, renewal, or a player leaving (cross-checked or hypothetical), starting from July 1.
(C) Regarding August, the same procedure (indicated in subparagraph b) will be applied.
(D) We will not take into account front pages dealing on the news event. Just the first one will be considered.

The convenience sample was delimited according to the criteria set by Riffe, Lacy, and Fico: "The material being studied must be difficult to obtain [. . .] Resources limit the ability to generate a random sample of the population [. . .] The third condition justifying convenient sampling is when a researcher is exploring some underresearched but important task" [51] (p. 85).

5. Results

The total number of front pages analyzed, following the criteria described above, was 104. It should be noted that the expected total (120) does not correspond to the actual total. That is so because, in at least in three days each month, the front pages did not coincide with the object of this study, applying the above-established sampling criteria. The selected were the following (Table 3):

Table 3. Days chosen to be part of the sample. Compiled by author.

Newspaper	2015		2016		2017		2018		2019		Total
	JUL	AGO	JUL	AGO	JUL	AGO	JUL	AGO	JUL	AGO	
Marca	3, 7, 15	17, 20, 22	5, 16		5, 6, 13	3, 12	3, 14, 18	28	14, 16, 17	2, 7, 9	23
As	2, 7, 16	2 y 3	16, 18, 20	7	2, 4, 6	3, 10, 11	6 y 26	8, 23 y 29	2 y 22	2, 5, 9	25
Mundo Deportivo	2, 22, 28	7	1, 2 y 3	1, 2 y 13	2, 3, 5	1, 2, 13	5, 6, 8	2, 3, 9	2, 3, 19	1, 7, 9	28
Sport	1, 2, 12	1, 2, 25	1, 2 y 5	8, 13 y 16	2, 3, 6	1, 2, 6	3, 4, 6	3, 8, 20	1, 3, 4	10	28

The first matter analyzed was focused on estimating how many pieces of news (considering hypothetical and assured ones, by newspapers) were, in the end, materialized. The results show that in 56.7% of the cases, those announced events did not happen, so it was just fulfilled by just 43.3% of cases. If we focus our analysis on different newspapers, we note that the most reliable one is Mundo Deportivo, with half of their information, in the end, materialized; however, another 50% is not. Marca and As did not comply with the proclaimed news by 61% and 60% of the cases, respectively, and Sport by 57.1%. The observed differences cannot be considered significant ($\chi^2 = 0.788$; $p = 0.852$) (Table 4). Some of the examples related to this are (Table 5):

Table 4. Compliance rate depending upon newspaper. Compiled by author.

Newspaper	Compliance with the Piece of News				Total
	Yes		No (Fake News)		
	n	%	*n*	%	
Marca	9	39.1%	14	60.9%	23
As	10	40.0%	15	60.0%	25
Sport	12	42.9%	16	57.1%	28
Mundo Deportivo	14	50.0%	14	50.0%	28
Total	45	43.3%	59	56.7%	104

Table 5. Headline examples. Compiled by author.

	Headline	Translation into English:	URL Portada
Marca			
André Gomes signing	André Gomes es el tapado	André Gomes, the ace in the hole	https://es.kiosko.net/es/2016-07-05/np/marca.html
Di María signing	Di María a tiro del Barça	Barça. Di Maria in range	https://es.kiosko.net/es/2017-08-12/np/marca.html
James signing (Atlético del Madrid)	Bombazo a la vista ¡James quiere jugar en el Atlético!	Bombshell. James wants to play in Atletico!	https://es.kiosko.net/es/2019-07-14/np/marca.html
Mbappé signing	Espéranos, Mbappé	Wait for us, Mbappé!	https://es.kiosko.net/es/2017-07-06/np/marca.html
Neymar signing	Never never never	Never never never	https://es.kiosko.net/es/2018-07-14/np/marca.html
Neymar signing	Neymar en el horizonte	Neymar ahoy!	https://es.kiosko.net/es/2019-08-09/np/marca.html
Pogbá signing	El United no afloja con Pogba	United doesn't let up on Pogba	https://es.kiosko.net/es/2019-07-17/np/marca.html
Pogbá signing	Erikesen podría ser la llave de Pogba	Erikesen could be the key for Pogba	https://es.kiosko.net/es/2019-08-07/np/marca.html
Van de Beek signing	Se reactiva la opción Van de Beek	Van de Beek option reactivated	https://es.kiosko.net/es/2019-08-02/np/marca.html
De Gea arrival to Real Madrid	Blindado De Gea	De Gea: armored	https://es.kiosko.net/es/2015-07-15/np/marca.html
Sergio Ramos leaves Real Madrid	No da marcha atrás	No backtrack	https://es.kiosko.net/es/2015-07-03/np/marca.html
Asensio leaving	Hola Kovacic, adiós Asensio	Hi Kovacic, bye Asensio	https://es.kiosko.net/es/2015-08-20/np/marca.html
Bale leaving	Bale tiene una salida	Bale has a way out	https://es.kiosko.net/es/2019-07-16/np/marca.html
James leaving	La Premier tienta a James	Premier League wants James	https://es.kiosko.net/es/2016-07-16/np/marca.html
As			
André Gomes signing	Andre Gomés espera al Madrid	Andre Gomes awaits Real Madrid	https://es.kiosko.net/es/2016-07-20/np/as.html
Cavani signing	Cavai se deja querer	Cavai lets himself be pampered	https://es.kiosko.net/es/2018-07-26/np/as.html
De Gea signing	El United pone precio: De Gea 35 M	United puts a price for De Gea: 35m	https://es.kiosko.net/es/2015-07-02/np/as.html
Gabriel Jesús signing	Gabriel Jesús más cerca del Real Madrid	Gabriel Jesus closer to Real Madrid	https://es.kiosko.net/es/2016-07-16/np/as.html
Mbappé signing	Mbappé aún es posible	Mbappé. Still possible	https://es.kiosko.net/es/2018-08-23/np/as.html
Pogbá signing	El Madrid pide paciencia a Pogbá	Madrid asks Pogbá for patience	https://es.kiosko.net/es/2016-07-18/np/as.html
Pogba signing	Pogba cuenta atrás	Countdown: Pogba	https://es.kiosko.net/es/2019-08-05/np/as.html
Van de Beek signing	Plan Van de Beek	Van de Beek operation	https://es.kiosko.net/es/2019-08-02/np/as.html

Table 5. *Cont.*

	Headline	Translation into English:	URL Portada
Meunier signing	Opción Meunier	Meunier, an option	https://es.kiosko.net/es/2017-08-11/np/as.html
Isco leaving	El Milán quiere a Isco	Milan wants Isco	https://es.kiosko.net/es/2016-08-07/np/as.html
Bale leaving	Gareth sale	Gareth leaves	https://es.kiosko.net/es/2019-07-22/np/as.html
Benzemá leaving	El Arsenal quiere a Benzemá	Arsenal wants Benzemá	https://es.kiosko.net/es/2015-08-02/np/as.html
Neymar leaves PSG	Neymar a subasta	Neymar to auction	https://es.kiosko.net/es/2019-08-09/np/as.html
Ramos leaving	La semana clave de Ramos	Key week for Ramos	https://es.kiosko.net/es/2015-08-03/np/as.html
	Mundo Deportivo		
Alaba signing	Alaba, el tapado	Alaba, the ace in the hole	https://es.kiosko.net/es/2019-07-19/np/mundodeportivo.html
Ceballos signing	Operación Ceballos	Operation Ceballos	https://es.kiosko.net/es/2017-07-02/np/mundodeportivo.html
Gabriel Jesús signing	Último intento por Gabriel Jesús	Last shot for Gabriel Jesus	https://es.kiosko.net/es/2016-08-02/np/mundodeportivo.html
Gignac signing	Alternativa Gignac	Alternative Gignac	https://es.kiosko.net/es/2016-08-01/np/mundodeportivo.html
Neymar signing	Un truque de 170 "kilos"	170m all-in	https://es.kiosko.net/es/2019-07-03/np/mundodeportivo.html
Barcelona signs Neymar	Neymar prioridad Barça	Neymar prioritizes Barça	https://es.kiosko.net/es/2019-08-09/np/mundodeportivo.html
Nolito signing	Oferta por Nolito	Offer for Nolito	https://es.kiosko.net/es/2015-08-07/np/mundodeportivo.html
Pogbá signing	Pogbá, el deseado	Pogba, the desired	https://es.kiosko.net/es/2018-08-02/np/mundodeportivo.html
Sciglio signing	Operación carrilero	Operation carrilero	https://es.kiosko.net/es/2016-07-03/np/mundodeportivo.html
Verratti signing	Cambio de táctica	Shift in tactics	https://es.kiosko.net/es/2017-07-03/np/mundodeportivo.html
William and Rabiot signings	William y Rabiot en cabeza	William and Rabiot in the lead	https://es.kiosko.net/es/2018-07-08/np/mundodeportivo.html
Marca de Samper	Wenger ataca de nuevo	Wenger attacks again	https://es.kiosko.net/es/2015-07-22/np/mundodeportivo.html

Table 5. *Cont.*

	Headline	Translation into English:	URL Portada
Coutinho to Tottenham	Negocian por Coutinho	Coutinho: in negociations	https://es.kiosko.net/es/2019-08-07/np/mundodeportivo.html
Rakitic leaving	Ofertas por Rakitic	Offers for Rakitic	https://es.kiosko.net/es/2018-08-09/np/mundodeportivo.html
Sport			
Neymar continues	¡Bloqueado!	Blocked!	https://es.kiosko.net/es/2017-08-02/np/sport.html
Ceballos signing	Ofensiva por Ceballos	Fighting for Ceballos	https://es.kiosko.net/es/2017-07-02/np/sport.html
Gabriel Jesús signing	Guerra Madrid-Barça por Gabriel Jesús	Madrid-Barça war for Gabriel Jesús	https://es.kiosko.net/es/2016-07-02/np/sport.html
Griezmann signing	Griezmann es el favorito	Griezmann favorite	https://es.kiosko.net/es/2017-08-01/np/sport.html
Luan signing	Cuenta atrás por Luan	Countdown for Luan	https://es.kiosko.net/es/2016-08-08/np/sport.html
Lucas Pérez signing	Atención a Lucas Pérez	Lucas Pérez!	https://es.kiosko.net/es/2016-07-05/np/sport.html
Barcelona signs Neymar	Reunión Messi-Neymar	Messi and Neymar meet	https://es.kiosko.net/es/2019-07-04/np/sport.html
Real Madrid signs Neymar	Superoferta de Florentino a Neymar	Florentino superbid for Neymar	https://es.kiosko.net/es/2019-08-10/np/sport.html
Paulinho signing	50 millones por Paulinho	50m for Paulinho	https://es.kiosko.net/es/2018-07-06/np/sport.html
Pogba signing	Las exigencias de Pogba	Pogba demands	https://es.kiosko.net/es/2015-07-01/np/sport.html
Verratti signing	Verratti Día D	Day D: Verrati	https://es.kiosko.net/es/2017-07-03/np/sport.html
Yarmolenko signing	Yarmolenko opción para enero	Yarmolenko. January option	https://es.kiosko.net/es/2015-08-25/np/sport.html
Abdennour signing	Habrá fichaje	Signing to happen	https://es.kiosko.net/es/2015-08-02/np/sport.html
Gerson signing	¡Peligra Gerson!	Gerson at stake!	https://es.kiosko.net/es/2015-08-01/np/sport.html
Coutinho to PSG	Acuerdo Coutinho-PSG en la operación Neymar	Operation Neymar: Coutinho-PSG agreement	https://es.kiosko.net/es/2019-07-03/np/sport.html
Rakitic and Busquets leaving	Ofensiva del PSG por Rakitic y Busquets	PSG battles for Rakitic and Busquets	https://es.kiosko.net/es/2018-08-20/np/sport.html

As far as photo montages are concerned, they have only been found in 2.9% of the cases. As and Sport did not use any, whereas Marca published two and Mundo Deportivo one. The observed differences cannot be considered significant ($\chi^2 = 4.39$; $p = 0.222$) (Table 6).

Table 6. Use of photo montage depending upon newspaper. Compiled by author.

Newspaper	Photo Montage			
	Yes		No	
	n	%	*n*	%
Marca	2	8.7%	21	91.3%
As	0	0.0%	25	100.0%
Sport	0	0.0%	28	100.0%
Mundo Deportivo	1	3.6%	27	96.4%
Total	3	2.9%	101	97.1%

Thirdly, the existing link between Marca/As newspapers and news events related to one Real Madrid player is analyzed. Similarly, the existing link between Mundo Deportivo/Sport and news events related to one FC Barcelona player is analyzed. It is observed that Marca and As mainly focus their news about signings on Real Madrid (78.3% and 88%, respectively: Average 83.2%), while Mundo Deportivo and Sport do likewise with FC Barcelona (96.4% and 92.9%, respectively: Average 94.6%). There are only five pieces of news not related to either Real Madrid or FC Barcelona: Two about Atlético de Madrid (appearing in Marca) and three referring to other teams (two in As and one in Marca). Similarly, Mundo Deportivo and Sport did not mention any signing not referring either to Real Madrid or FC Barcelona on their front pages (Table 7). If we compare As-Marca with Mundo Deportivo-Sport, significant differences are found, especially in the number of stories devoted to the different football teams ($\chi^2 = 78.21$; $p < 0.001$).

Table 7. Team affected by the signing, depending upon newspaper. Compiled by author.

	Team Affected at Origin or Destination									
	Real Madrid		Barcelona		Atlético de Madrid		Otros		No Indicado	
	n	%	n	%	n	%	n	%	n	%
Marca	18	78.3	2	8.7	2	8.7			1	4.3
As	22	88.0	1	4.0			2	8.0		
Mundo Deportivo	1	3.6	27	96.4						
Sport	2	7.1	26	92.9						
Total	43	41.3	56	53.8	2	1.9	2	1.9	1	1.0

Finally, 97.1% are accompanied by photographs. Marca accompanied all their news about signings with a photograph. In other newspapers, it can be noted that there is one piece of news in each with no photograph attached. This is not a significant difference ($\chi^2 = 0.888$; $p = 0.828$) (Table 8).

Table 8. Use of photography, depending upon newspaper. Compiled by author.

Newspaper	Photography			
	Yes		No	
	n	%	*n*	%
Marca	23	100.0%	0	0.0%
As	24	96.0%	1	4.0%
Sport	27	96.4%	1	3.6%
Mundo Deportivo	27	96.4%	1	3.6%
Total	101	97.1%	3	2.9%

6. Conclusions

First of all, we assume the first hypothesis to be correct, since at least 50% of the signings, possible signings, renewals, or sale of players announced on the front pages did not materialize. This constitutes a general trend in sports journalism, especially during the summer. The summer transfer window is usually the perfect occasion for newspapers to speculate with rumors. That is so, precisely because of the lack of sports competitions, especially in the football field. That is why many of these pieces of news do not materialize in the end.

In this sense, from the perspective of the practice of journalism, especially sports press, rumor is a common way of journalists establishing authority. In addition, in this type of information, where there is logically no exclusivity (as for example in sports broadcasts), it is a strategy to maintain interest on the part of the reader, especially in the period studied (summer period) where the number of broadcasts is much lower than at any other time of the year. In addition, as other authors did in previous research [46], there are many occasions when sports media are followed by the "historically symbiotic relationship" that can be established between the journalist and their audience and, for example, in that same study, the lack of sources in the commercial forecast is contemplated.

Secondly, a minimal percentage of these front pages were accompanied by photo montage, so we reject the second hypothesis, which stated just the opposite premise. It is true that quite often there are photographs of the players (news events); however, they are usually related to the team that the player is part of, at that specific time.

On the other hand, there is a direct relationship between Marca/As and news events related to Real Madrid, and Mundo Deportivo/Sport and news events related to FC Barcelona. As a consequence of that, the third and fourth hypotheses are broadly accepted. Nevertheless, if a thorough analysis is carried out, we note that Marca does not reach the expected 80% stated in the hypothesis. All of this is in line with the editorial biases of the different newspapers and their own target groups. In this case, we can conclude that Marca publishes the widest range of news, including more news (not referring to Real Madrid) than was expected in the first place.

Finally, the fifth hypothesis is accepted, since photography is present in more than 80% of the front pages analyzed. In this aspect, there were not any significant differences among newspapers.

Future lines of research, or retort publications, could try to delve into whether the results and conclusions presented here could have significant differences if the whole of the news (text analysis) were analyzed beyond the headline of the cover; and if the title page would be a mere "clickbait" on a text, which would clarify what is specified there, in a less blunt and more speculative way (rumor).

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Trust in Public Relations in the Age of Mistrusted Media: A European Perspective

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Abstract: One of the core problems of misinformation and post-trust societies is, indeed, trust in communications. The undermining of the credibility of media as the backbone of democratic societies is becoming a serious problem that affects democracy, business and all kinds of public institutions and organizations in society(ies). This paper explores perceptions of trust in key stakeholders involved in communication on behalf of organizations. Findings are considered at the professional (macro), departmental (meso) and individual (micro) level as well as considering the trusted role of non-specialist communicators for organizations including internal and external spokespeople. Data were collected from an online survey of 2883 respondents from 46 countries across Europe. Key findings were at the *macro* level that: antagonism between management communication professionals and journalists remains. The lowest trust in the profession is felt to be by the general public. At the *meso* level, top executives are perceived to trust the department the most followed by journalists in second place. External experts such as professors and consultants are perceived to be the most trusted by the general public. Finally, at the *micro* level individuals are more trusted than organizations or departments and the communication profession more widely.

Keywords: post-trust; disinformation; trust; media credibility; gatekeepers; management communication; strategic communication; public relations; journalism

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1. Introduction

Today we live in a complex and ambiguous world, within which the public are losing confidence in all kinds of institutions and in the role mass media plays as the "backbone of democratic societies". The new social media landscape holds the public in a state of continuing uncertainty, because the parameters that allowed them to evaluate the reception and scope of traditional news media have been eroded [1] (pp. 94–95). In many countries, trust in the mass media and journalism has been declining [2–4]. If trustworthiness in the context of media means the belief that the source provides information honestly, without the purpose of manipulation [5], then the trustworthiness of news media is a subject that has relevance in contemporary society and is open to significant debate. The undermining of the credibility of media as the backbone of democratic societies is becoming a serious problem that affects democracy [2], business and all kinds of public institutions and organizations in society(ies).

According to the latest Eurobarometer from November 2018, 39 per cent of citizens in the European Union show little or no confidence in the media, while only one in five (19 per cent) has high confidence [6]. Both values were lower than in previous surveys. This loss of trust might also be true for other communicators, especially those who communicate on behalf of companies and other types of organizations. This is a key challenge

for the communication industry, as communicators need to be trusted by the people they work for, e.g., top executives and (internal) clients [7–9], but they are also dependent on the trust of the public with whom they interact to reach their goals and the gatekeepers that bring them to their final audiences—journalists, bloggers, influencers. Today diverse and competing media channels have the critical role of helping publics to obtain organization-related information and fostering trust between the public and business and other organizations [10].

Trust is critical to the functioning of our society at all levels and is especially central to the practice of public relations [11], yet the topic has not been researched comprehensively so far in our field. Trust has been largely researched in sociological, economic and organization theory [12]. In this paper, we will approach trust in the PR/communication field from a cross-disciplinary approach where the perspectives of New Institutionalism (NI), Organization–Public Relations (OPR) and a European sociological application of Luhmann's theory to public relations are mainly focused. This paper explores perceptions of trust in key stakeholders involved in communication on behalf of organizations. Findings are considered at the professional (macro), departmental (meso) and individual (micro) level as well as investigating the trusted role of non-specialist communicators for organizations including internal and external spokespeople.

The main objective and purpose of this study is twofold: first to explore the perception of trust in public relations/communication in Europe across the different levels applied in New Institutionalism theories—macro (the profession), meso (the department) and micro (the individual practitioner). Second, to explore the concrete efforts to build organizational trust as a key task of communication functions in Europe. This main objective has been broken down into three overarching research questions driven from the following literature review

2. Literature Review

As underlined by Li's [13] editorial for the launch issue of the Journal of Trust Research, there are academic observations of a persistent lack of consensus about trust [14,15]. Following Lane [12] trust is a social phenomenon to be studied at interpersonal, interorganizational and systemic levels. Most conceptions of personal trust share three basic assumptions: that there will be a degree of interdependence between trustor and trustee; that trust provides a way to cope with risk and uncertainty in exchange relationships and the expectation that there will not be an abuse of the vulnerability resulting from the acceptance of risk in the relationship. Trust is also something to be given or placed, it may be placed in a person (micro), an organization (meso), and the broader structures that affect roles and organizations, etc., (macro) such as codes of conduct, industry bodies, relevant law and broader societal norms [14]. Nevertheless, theories began to diverge in their identification of the foundation of trust or the social bases on which such expectations must be established. These expectations are related to the model of human nature or social interactions underlying theories. Divergences may also arise from the object of trust and the context in which the relationship is situated. Those divergences have translated to multidimensional concepts and typologies of trust as the dyad cognitive/affective which is very common in interpersonal trust studies [16], or the multidimensional models based on the context of expectations (i.e., fiduciary/competence), which are very common in interorganizational trust studies.

Based on the main divergences, Lane [12] underlines three approaches from economics and social sciences. First, the approach of *calculative trust*, based on the conception of rational human beings that can take utilitarian decisions calculating the cost and benefits of expectations in a relationship. Coleman [17] and other authors in this perspective have been criticized for an ideologized view of the rational behavior. Second, the *value or norm-based trust* approach, where the concept of solidarity and collectivity is placed at the center of human life. Shared values and norms allow economic actors to support each other where they share a community of trust. Fukuyama [18] is the recognized representative of this

perspective, with the concept of the family as the basic social structure in US society and his argument that the level of trust of a country as the cultural factor for wellbeing and competitiveness of a nation. Additionally, third, the approach of *common cognitions* as the basis for trust. Common cognitions are defined as the rules that constitute the nature of reality and the frames through which meaning is made. These frames are embodied in expectations about social order in general and about the specific interactions with others. The most extended and insightful theoretical analysis of trust has been put forward by Luhmann [12] (p. 12). From his functionalist perspective, Luhmann bring complexity like a fundamental otologic problem defined as a number of possibilities inherent in the construction of a system. Where trust is present, possibilities for action and experience increases, bringing more complexity to the social system but also multiplying the number of possibilities to be reconciliated with its structure. Thus, trust for a sociologist is the most effective way of reducing complexity. European public relations scholars have argued for the application of Luhmann's theory to the field of public relations to place the role of the communication function at the core of organizational and social trust and underlining the public relations role of increasing trust among different social systems (see p. 7).

2.1. Trust in the PR/Communication Professional Field

Public trust in professions can be understood as the degree to which the public believes that professions will act serving and protecting the public's interest. Although this view is controversial when the public disagree about what is perceived to be in the public interest [19]. Today, many professions are untrusted by the general population, with a decline for those in business related professions including communicators [20,21].

Public trust in public relations practice is strongly related with the concepts of profession and professionalization itself. The construct of professionalization refers to the process—undertaken either by an organization or an entire industry—of attaining a sufficient level of quality and practice which is representative of excellence in a profession [22]. Although there have been numerous attempts to outline the parameters of professionalization in public relations, none have resulted in true consensus among practitioners [23]. Yet, as public relations theory and practice has developed at different rates around the world, a broad understanding has been reached about the benefits associated with professionalization, including respect, prestige, and a positive public image [24].

As public relations theory is rooted in different disciplinary fields, like mass communication, interpersonal/speech communication, (social) psychology, economics, sociology, and in different schools of thought [25], scholarship in public relations has conceptualized the professionalized occupation from diverse viewpoints including functionalist, structuralist and rhetorical perspectives to serve the public interest. For instance, public relations as a field of practice has been explained as the provider of mutually beneficial and good organizational relations [26–29]; social dialog, i.e., [30–34]; postmodern activism [35] or social legitimation, i.e., [36,37].

However, despite public relations scholarship conceptualizations and the attempts of the industry to be trustworthy [38], its intervention has often been understood as attempts to manipulate the public sphere, i.e., [39–41]. The professional label itself is discredited in Europe, affecting negatively the communicator's reputation and the credibility of their activities [42]. Thus, as there is a gap between scholar conceptualization and public perception, public distrust for the PR profession can be attributed to a deficit of knowledge or a lack of factual information [43] about the goals and principles of the profession.

No previous research has approached the relationship between trust and communication/public relations from a comprehensive view that implies the diverse levels of institutionalism so far. The new institutionalism theory understands institutions as normative and regulative elements that provide stability and meaning to social life [44,45]. Institutional analysis can be approached from the macro, the meso and the micro level. The micro level analysis is mostly concerned with individual and group actions and the meso and macro levels connect the communication function with the organization and

with broader societal systems. Following this approach, this paper aims to explore trust in the communication/PR practice from the macro level of the profession through the meso level of the organizational functions of communication to the micro level of the individual practitioner. Indeed, previous research indicates that trust differs between different levels and stakeholders. Research in organizational trust in the business field, for instance, has shown that there is a gap between the levels of trust in a particular business and trust in the institution of business [46]. We want to test if different levels of trust can be also be found in the communication/public relations field.

At the personal level, trust can be understood as a factor for effectiveness in the managerial organizational setting. Trust is a key predictor of group accomplishment and behavior as it is essential for motivation, information sharing; managers' commitment and efficient problem-solving by reducing uncertainty, i.e., [47]. More positively, trust is linked to the social relations within which business transactions are embedded. Thus, trust exists as a result of frequent interactions and previous trusting relationships [48]. High interpersonal trust helps actors re-address power asymmetries, leading to high levels of interorganizational commitment [49]. This means that the more frequent our interpersonal relations with internal and external stakeholders, the more trust can be activated. For instance, in the organization, chief communication officers (CCO's) who have direct access to the chief executive officer (CEO) should be able to establish more trust relations with him/her than individuals who face barriers to access leadership positions, such as female practitioners [50]. This effect of interpersonal experience has also been explained in the relation between journalists and PR practitioners through two levels of status. The first is the social normative level, where a competitive relationship is evidenced. The second is the functional level, where task-oriented situations need a sense of cooperation between individuals [51]. Journalists' personal experience with public relations clearly matters. PR professionals who journalists have worked with are better evaluated than the PR profession as a whole, i.e., [8,52].

Thus, a broader approach at the macro, meso and micro levels may allow a deeper understanding of the perception of trust in the field, and at the same time, those levels can be seen completely differently from the diverse interest groups and contexts. Organization-related information is delivered today through a broad range of diverse channels. Mediated content is seen as a means towards the ultimate goal of creating and sustaining relationships [11]. In this process, communication departments also try to establish cooperative relationships with gatekeepers to ultimately enhance their relationship with their selected audiences and stakeholders. Communication success depends on the trust of both internal and external publics, who the organization can reach either directly or through identified gatekeepers.

Regarding internal stakeholders, trust can be seen as a mix of interpersonal and group interactions, based on the expectations that an organization will be honest, meet commitments and will not take advantage of others [11]. This approach introduces the concepts of influence, mutual control and vulnerability [53] and the assumption of risk in stakeholders' relationships [54]. Business research focuses on the importance of interpersonal trust relationships for organizational effectiveness. Specially under conditions of uncertainty and complexity, effective coordinated actions are only possible where there is mutual trust. A considerable amount of managerial work is accomplished through interpersonal interactions and the nature of the interpersonal relationships between managers and peers have cognitive and affective dimensions that can determine effectiveness [16].

Research from interorganizational relations also brings useful ideas through the dualism of vulnerability and power, including two dimensions of trust—based on goodwill the other on competence, i.e., [47,55]. It is assumed that horizontal relationships may involve trust and cooperation and vertical relationships power and compliance [56]. Combining predictability and goodwill approaches can move towards a communicative conceptualization of trust, as a process of sense-making [57]. Thus, trust is critical to the perception of public relations departments as organizational sense-makers [58] and to the practice's

primary purpose of establishing and maintaining relationships with key stakeholders of the organization.

Today the vast majority of top-level European communication managers report directly to the CEO and hold divisional influence, meaning that organizational leaders trust what communication departments recommend. Intraorganizational vertical and horizontal relationships are a key factor for the accomplishment of communication work [58].

Regarding external stakeholders, previous research states that the general population is critical about the communication/PR field, but not as much as they are about journalists as traditional gatekeepers [8]. The constructivist process of mediated content between PR and news media has been researched in public relations from the agenda building and framing perspectives, i.e., [59,60].

Public relations intervenes in the process of public communication—mediating experience in the knowledge societies—by producing information prior to its publication as media realities [61], but journalists have traditionally viewed PR practitioners negatively for their role as advocates, or because of a lack of transparency and ethics [62]. Criticism has also been explained by traditional rivalry and status inequality between the two, i.e., [51,63]. Nevertheless, more recent studies have found shared values and an improvement of the relationship between the two professions, i.e., [55,64,65].

On the other hand, organizations can now directly target a broad spectrum of publics online, in a way that was not possible previously through the news media. This Internet-based communication landscape has also brought new gatekeepers to the public information processes. As Bentele and Nothaft [66] state, in the virtual public sphere an organization can no longer rely on being the only one who has access to publics. A new kind of equality has emerged between communicative roles as public relations practitioners try to manage the interplay with bloggers and influencers in the construction of information, but there is no evidence of conflictual rivalry between these two groups so far [67].

2.2. Building Organizational Trust

Apart from the trust that the field of communication/PR can get for itself at the three different levels, building and maintaining trust for organizations is one of the more important tasks for PR/communication departments and consultancies. Research about trust in public relations has mainly been described in Organizational–Public-Relations (OPR) scholarship. As the practice becomes more focused on the contribution of building and maintaining mutually beneficial relations to help corporate goals, trust has been understood as a factor for achieving successful relationships with internal and external stakeholders [29,68–72]. OPR has been defined from diverse perspectives, viewing it objectively or subjectively and interpreting OPR from its antecedents or its consequences. Trust has been placed in the center of the subjective experience when OPR is described as the degree that the organization and its public trust, agree on, commit and feel favorably toward each other [68]. From the diverse research focus, trust has been measured and conceptualized threefold as an outcome, and as an antecedent or a mediating factor [7].

Nevertheless, one of the gaps identified in the OPR research is concretely the use of trust as a key measurement of OPR. On the one hand, researchers assume that trust must always exist between organizations and their publics, even though distrust has also been found as a valid OPR quality measurement distinct from trust [73]. On the other hand, researchers have failed to separate interpersonal and inter-organizational trust and between internal and external publics in diverse contexts. The extended review and the proposal of Cheng [74] of a new theory of Contingent Organizational Public Relations introduces the dynamic of the actual relationship as opposed to an idealistic normative view, thus allowing us to attend to the particular context of relationships. From this contingent perspective, trust is constructed differently in diverse environments. Thus, we also believe that diverse types of organization and geographical contexts should be considered in empirical research. It is relevant to acknowledge that other studies on corporate values also suggest that the highest score or being the best is not always advantageous. Luoma-aho's study [75] on the

public sector in Finland demonstrated that holding a higher reputation is not always the best strategy. In contrast to private sector goals, the public sector faces resource restrictions that make it preferable to focus on a neutral reputation, to avoid the public having (too) high expectations which are difficult to meet.

From a European sociological perspective, the responsibility of generating trust for society could be placed on the public relations function, as has been conceptualized by Holmström [76,77], based on Luhmann's theory. For Luhmann the whole social order is based on structures of expectations. Trust reduces complexity by ensuring that the social system is based on mutual expectations about the future of behavior that would guide actors' actions [78]. Thus, organizations are evaluated on nothing but the communication of their decisions [79] and have to be constantly prepared for trust checks [74]. Today, in the uncertain 21st century, public relations can be conceptualized in this context as a response to the contemporary uncertainties through its role of increasing trust among different social systems as conceived by Luhmann [80–82]. Yet, achieving this important role implies specific challenges for communication departments. We are going to focus on the active subjects, the main goals and the main challenges to build trust for organizations.

Firstly, we want to know who the most trusted communicators on behalf of the organization are (subjects) from the perspective of communicator/PR practitioners. Communication and PR professionals are not the only people speaking on behalf of organizations. More than ever one key role of communication departments is to enable other people inside and to identify and select endorsers (supporters) outside the organization to speak on its behalf [58]. The so-called "European educational role" [83] is increasing its importance as communication management should be more a supporter for all levels of the organization than a subsystem where communication is only performed by professionals [84].

Formal representatives, such as CEOs and board members or marketing and salespeople, as well as other employees and members of the organization, play a role as well, whether they are coached by practitioners or not. External experts in the field, customers, fans and supporters, and even activists with overlapping interests can also endorse the organization. Knowing about different advocates and choosing or supporting them carefully is an important part of strategic communication.

Literature suggests that professional organizational communicators such as marketing and PR people engender low public trust [11,85]. On the contrary, there is an increasing importance of other internal non-professional-communication supporter roles who rate significantly higher than CEOs. This makes employees—who are seen "as a person like me"—important channels and ambassadors for spreading messages about the organization [86,87]. Moreover, employees with competence in specific knowledge and channels are new potent corporate influencers [87]. Based on this understanding, enabling diverse internal publics, instead of relying only on leaders, is becoming an important task for communication departments [58].

On the other hand, outside the organization, with the virtual public sphere, organizations can no longer rely on having exclusive access to publics. Wright and Hinson [88] argued that social media provides a means for organizations to act transparently and perceived that accuracy, credibility, honesty, trust and truth telling were enhanced through social media use. Yet trust in the Internet is a hot issue in interpersonal and organizational relationships [88] and trust influences how stakeholders rationalize information in social media [89]. Based on the same principle of trusting "a person like me" social media channels have been argued to be more credible than traditional media because of its authenticity. People value having more sources of information and believe that the public is primarily responsible for dissemination of information [87]. Thus, the most credible sources for audiences are knowledgeable friends, family and colleagues (36%) whereas bloggers, forums and online communities show low credibility [85].

Secondly, we address the main goals and challenges for building organizational trust. Previous research has identified a gap between the communication function of enhancing trust for the organization and doing it for the whole profession or for concrete

organizational leaders [42]. Nevertheless, the current situation of social distrust in business, media and all kinds of institutions make it important today to build trust from a broader perspective and not only focused in the meso level of organizations.

After the last big global financial and economic crisis, which has been perceived as a crisis of trust, communication management needed to strive to gain stakeholders' trust not only at the meso-level of companies, but on different levels [90]. Along with the benefit of relationships in OPR scholarship, literature has currently operationalized trust as an independent variable to achieve reputation [91] and multiple organizational and business goals, i.e., [47,92]. This complexity of the relationship between trust and other outflows suggest that building trust through communication can be difficult and present diverse challenges.

Although organizational trust has been operationalized more as an independent than dependent variable, the literature identifies some key antecedents of trustworthiness as: organizational openness and transparency [93–95]; dialogue [96]; corporate citizenship [97]; and credibility, reliability and benevolence [11]. Summarizing, communication needs to be based on knowledge, and it should be transparent and ethical, too.

Contrary to the thinking of one of the most prominent contemporary philosophers Byung-Chul Han [98] who states that transparency undermines real trust in today's world, corporate transparency has been assumed and embraced as a must to have for all kinds of organizations. Corporate transparency can be evaluated through diverse factors and dimensions [11,97], but neither trust nor transparency are easy in practice [99–101]. Today there is an increasing gap between what organizations deliver and the public expectation for companies to communicate about management behaviors and about the people who lead organizations [85,102]. Previous research also suggests that European organizations are not prepared to face hypermodern demands of transparency [103].

From the review of the literature, we propose the following hypotheses to address the original research questions for the study about trust in communication/PR. All questions are measured against national context as well as the organizational type where the respondent worked:

RQ1: What is the perceived trust of European PR/communication professionals at the professional, departmental, and personal performance levels by diverse key stakeholders?

- **Hypothesis 1 (H1).** *Perceived trust varies in communication/PR and is higher for the individual (micro) level than for the departmental (meso) and profession (macro) level.*
- **Hypothesis 2 (H2).** *Perceived trust is diverse from different stakeholders: the perceived trust of internal stakeholders, influencers and bloggers in the PR/communication profession is higher than the perceived trust of the general public and journalists.*

RQ2: Who are the most trusted communicators by hierarchical level and gender on behalf of the organization as perceived by communication professionals?

- **Hypothesis 3 (H3).** *Practitioners on higher hierarchical levels report a higher level of personal trust than those on lower levels.*
- **Hypothesis 4 (H4).** *Male practitioners report higher levels of personal trust than female counterparts.*

RQ3: What are the most important goals and hurdles for building and maintaining trust in European organizations?

- **Hypothesis 5 (H5).** *Enhancing trust in organizations is a more important goal than enhancing trust in leaders or the overall sector.*
- **Hypothesis 6 (H6).** *Transparency is the main challenge for building trust for organizations.*

3. Materials and Methods

To answer the research questions and test the hypotheses, six questions about trust were asked in the European Communication Monitor (ECM) 2019. The ECM is an annual survey among PR and communication professionals in Europe.

3.1. Procedure and Sample

The online survey is an English language survey and was pre-tested with 67 communication professionals in 20 European countries. Amendments were made where appropriate and the final questionnaire was on the ECM website for five weeks in February/March 2019. A large number of professionals throughout Europe were invited with personal e-mails based on a database provided by the European Association of Communication Directors (EACD). Additional invitations were sent via national research collaborators and professional associations. In total, 2883 respondents completed the survey. Answers from participants who could not clearly be identified as part of the population were deleted from the dataset. This strict selection of respondents is a distinct feature of the ECM and sets it apart from many studies which are based on snowball sampling or which include students, academics and people outside of the focused profession or region. The evaluation is then based on 2689 fully completed replies by communication professionals in Europe. The sample consists of respondents that are communication leaders: 39.3 per cent hold a top hierarchical position as head of communication in an organization or as chief executive officer of a communication consultancy; 28.3 per cent are unit leaders or in charge of a single discipline in a communication department. In total, 67.8 per cent of the respondents have more than ten years of experience in communication management. The average age is 42.5 years (SD = 10.62). Overall, 56.8 per cent of all respondents are female and a vast majority (95.9 per cent) in the sample has an academic degree. More than two thirds hold a graduate degree or a doctorate. Seventy per cent of the respondents work in communication departments in organizations (joint stock companies, 19.9 per cent; private companies, 23.1 per cent; government-owned, public sector, political organizations, 16.6 per cent; non-profit organizations, associations, 10.8 per cent), while 29.6 per cent are communication consultants working freelance or for agencies. In total, 60.3 per cent of the respondents report to work at a communication department that is aligned to the (top) management of the organization. Overall, 26.2 per cent of the departments is strongly aligned, and 13.5 per cent is weakly aligned to the management of the organization.

Communication professionals from 46 European countries participated in the survey. Most respondents (31.4 per cent) are based in Southern Europe (countries like Italy, Spain, Serbia, Croatia), followed by Western Europe (29.0 per cent; countries like Germany, Belgium, Netherlands, Switzerland, France), Northern Europe (22.6 per cent; countries like the United Kingdom, Sweden, Finland, Norway), and Eastern Europe (16.9 per cent; countries like Poland, Czech Republic, Bulgaria, Romania).

3.2. Questions, Variables and Analysis

Based on literature about trust in the communication profession (see theoretical discussion in the literature review), six questions were asked in the survey about (1) the perceived trust in the communication profession in general, (2) communication departments in organizations, (3) the communication person, (4) other communicators in the organization, (5) the perceived relevance of building trust for organizations and (6) challenges of trust building communication. All questions used a five-point Likert scale, from strong distrust to strong trust. In the first three questions respondents were asked to assess trust in the profession, departments, member of the general public, journalists, influencers and bloggers and top executives in charge of leading the organization. In the question about personal trust internal clients and colleagues and co-workers were added. In the fourth question respondents were asked to assess the trust of the general public in communication and public practitioners themselves and the following six other communicators: Marketing and sales representatives of the organization, leaders of the organization (CEOs, board members, top executives), other employees/members of the organization, external experts in the field (e.g., professors (academics), consultants), external supporters/fans or customers/clients of my organization and activists and other external organizations with their own agenda. Question five asked respondents to assess (not relevant to very relevant) three relevant goals for building trust for their organization: (1) Enhance trust in

leaders of my organization, (2) enhance trust in my organization and/or its brands, and (3) enhance trust in our market, business or sector of society. The sixth and last question asked respondents to assess three challenges of trust-building communication that they face in their organization, from never to always challenging: Being transparent (telling what you know and disclosing contexts), being ethical (adhering to moral and normative expectations), and being knowledgeable (based on facts and focused on problem-solving).

The six questions supplied several dependent variables on trust. Independent variables were individual demographics of the respondents, organizations and departments they work in and country of residence. SPSS was used for data analysis. For all questions, an ANOVA was performed on the dependent variable and the 22 countries with enough respondents ($n > 48$), and the type of organizations respondents work in to test hypotheses. If necessary, additional t-tests were performed to test specific hypothesized differences.

To test the overall hypothesis about the level of trust on the personal level compared to departmental and professional level, first three trust indexes were created: (1) professional trust, (2) organizational trust and (3) personal trust. The answers to the items of the respective questions were summed and divided by the number of items. Subsequently two paired sample t-tests were performed with the pairs; personal trust and professional trust; and personal trust and departmental trust.

4. Results

4.1. Trust in the Profession

RQ1: What is the perceived trust of European PR/communication professionals at the professional, departmental, and personal performance levels by diverse key stakeholders?

Answering hypothesis 1, the findings demonstrate that practitioners experience low trustworthiness in the profession. On a five-point scale strategic communication professionals perceive trust in their profession to be the highest among top executives of organizations (M = 3.77, SD = 1.02) followed by influencers and bloggers (M = 3.35, SD = 1.05) and journalists (M = 3.15, SD = 1.07). Professionals think the general public trust the PR/communications profession the least (M = 2.91, SD = 1.03). Hypothesis 2, which stated that the perceived trust in the public relations/communications profession was higher among influencers and bloggers than it was among journalists, is confirmed, $t(-9.728)$, p = <0.000, 95% CI [−0.24, −0.16]. An analysis of variance (ANOVA) shows that there are significant differences in the trust levels between different European countries (see Table 1) with trust higher in Northern and Western Europe than Southern and Eastern Europe. Between different kinds of organizations (joint stock companies, private companies, governmental organizations, non-governmental organizations and consultancies) significant differences are found for trust by top executives and the general public, not for influencers/bloggers and journalists (see Table 2).

Table 1. Results of the Analysis of Variance (ANOVA) of country and trust in the profession by four groups (between groups).

	Sum of Squares	df	Mean Square	F	*p*
Top executives	71.503	21	3.405	3.248	<0.000
Total	2437.238	2319			
Influencers/bloggers	70.28	21	3.347	3.050	<0.000
Total	2516.936	2251			
Journalists	89.594	21	4.266	3.745	<0.000
Total	2,761,271	2366			
General public	88.662	21	4.222	4.131	<0.000
Total	2437.238	2319			

Table 2. Results of the Analysis of Variance (ANOVA) of type of organization and trust in the profession by four groups (between groups).

	Sum of Squares	df	Mean Square	F	*p*
Top executives	16.044	4	4.011	3.842	<0.004
Total	2737.542	2611			
Influencers/bloggers	6.899	4	1.725	1.548	0.186
Total	2792.858	2504			
Journalists	10.451	4	2.613	2.274	0.059
Total	3029.412	2632			
General public	26.1	4	6.525	6.238	<0.000
Total	2723.771	2583			

4.2. Trust in Communication Departments

PR/communications professionals were asked for their perceived trust in communication departments/agencies by those interest groups that are critical for their success. The perceived trust of the stakeholders they work for: the publics and people who use the media; channels and events of the organization; journalists with whom they interact; influencers and bloggers with whom they interact; and top executives and internal clients for whom the departments work. On a five-point scale top executives score best (M = 4.32, SD = 0.861), journalists rank second (M = 3.95, SD = 0.834), followed by influencers and bloggers (M = 3.85, SD = 0.928) and the general public (M = 3.85, SD = 0.891). The perceived trust in communication departments is highest among the top executives and lowest among the publics that use the communication channels and messages. An analysis of variance (ANOVA) shows that there are significant differences in the trust levels between different European countries (see Table 3) and between different types of organizations (joint stock companies, private companies, governmental organizations, non-governmental organizations and consultancies) (see Table 4).

Table 3. Results of the Analysis of Variance (ANOVA) of country and trust in the communication department by four groups (between groups).

	Sum of Squares	df	Mean Square	F	*p*
Top executives	53.733	21	2.559	3.472	<0.000
Total	1773.229	2354			
Influencers/bloggers	29.124	21	1.387	1.613	<0.039
Total	1688.32	1951			
Journalists	50.499	21	2.405	2.895	<0.000
Total	1952.667	2311			
Publics	39.62	21	1.887	2.39	<0.000
Total	1859.256	2326			

Table 4. Results of the Analysis of Variance (ANOVA) of type of organization and trust in communication departments by four groups (between groups).

	Sum of Squares	df	Mean Square	F	*p*
Top executives	19.277	4	4.819	6.562	<0.000
Total	1938.961	2618			
Influencers/bloggers	19.34	4	4.835	5.668	<0.000

Table 4. *Cont.*

	Sum of Squares	df	Mean Square	F	*p*
Total	1879.863		2185		
Journalists	10.52	4	2.63	3.165	0.013
Total	2147.642	2576			
Publics	35.507	4	8.877	11.351	<0.000
Total	2056.341	2588			

4.3. Personal Trust

RQ2: Who are the most trusted communicators by hierarchical level and gender on behalf of the organization as perceived by communication professionals?

Respondents were asked for the perceived trust in them on the individual level by those who are critical for their success. Communication professionals depend on the trust of journalists, bloggers, influencers, internal clients, organizational leaders, and the peers they work with/for. On a five-point scale colleagues and co-workers score highest (M = 4.61, SD = 0.700), followed by the top leader of the organization (M = 4.48, SD = 0.824), internal clients (M = 4.44, SD = 0.759), journalists (M = 4.13, SD = 0.792) and publics they have direct contact with (M = 4.13, SD = 0.793), and influencers (M = 3.98, SD = 0.833). An analysis of variance (ANOVA) shows that there are significant differences in the personal trust levels between different European countries, except for influencers/bloggers (see Table 5). Perceived personal trust levels between different types of organizations (joint stock companies, private companies, governmental organizations, non-governmental organizations and consultancies) differ significantly for all groups except journalists (see Table 6). Professionals on higher hierarchical levels report a significant higher level of perceived personal trust with all stakeholders, except with influencers/bloggers (see Table 7). Hypothesis 3 is therefore partly confirmed (practitioners at higher levels have higher trust than those at lower levels). Hypotheses 4 stated that male practitioners report a higher level of personal trust than their female counterparts. This hypothesis is not confirmed, the results show the opposite: Female practitioners report the same levels of trust with internal stakeholders and higher levels of perceived personal trust for external stakeholders, respectively for publics and people they talk to directly, t (2563) = 4.135, $p < 0.000$, 95% CI [0.069, 0.092], journalists, t (2224) = 3.575, $p < 0.000$, 95% CI [0.053, 0.181] and influencers/bloggers, t (1876) = 4942, $p < 0.000$, 95% CI [0.113, 0.261].

Table 5. Results of the Analysis of Variance (ANOVA) of country and personal trust in by six groups (between groups).

	Sum of Squares	df	Mean Square	F	*p*
Publics and people I talk to directly	25.263	21	1.203	1.928	0.007
Total	1451.294	2307			
Journalists I work with	37.32	21	1.777	2.864	<0.000
Total	1352.708	2141			
Influencers/bloggers I work with	17.17	21	0.818	1.156	0.282
Total	1216.544	1716			
(Internal) clients	38.862	21	1.851	3.264	<0.000
Total	1347.792	2330			
The top leader in my department/agency	41.138	21	1.959	2.873	<0.000
Total	1618.023	2334			
Colleagues and co-workers	40.412	21	1.924	3.953	<0.000
Total	1196.514	2396			

Table 6. Results of the Analysis of Variance (ANOVA) of type of organization and personal trust in by six groups (between groups).

	Sum of Squares	df	Mean Square	F	*p*
Publics and people I talk to directly	10.158	4	2.54	4.058	0.003
Total	1615.333	2569			
Journalists I work with	1.459	4	0.365	0.581	0.677
Total	1505.942	2398			
Influencers/bloggers I work with	10.436	4	2.609	3.781	<0.005
Total	1336.804	1926			
(Internal) clients	25.056	4	6.264	11.05	<0.000
Total	1491.008	2590			
The top leader in my department/agency	22.318	4	5.58	8.316	<0.000
Total	1763.385	2599			
Colleagues and co-workers	6.635	4	1.659	3.396	0.009
Total	1305.878	2664			

Table 7. Results of the Analysis of Variance (ANOVA) of hierarchical position and personal trust in by six groups (between groups).

	Sum of Squares	df	Mean Square	F	*p*
Publics and people I talk to directly	6.296	2	3.148	5.208	0.006
Total	1461.895	2410			
Journalists I work with	14.936	2	7.468	12.512	<0.000
Total	1358.458	2253			
Influencers/bloggers I work with	0.047	2	0.024	0.035	0.965
Total	1213.502	1807			
(Internal) clients I'm working for	15.092	2	7.546	13.704	<0.000
Total	1352.562	2431			
The top leader in my department/agency	42.398	2	21.199	33.921	<0.000
Total	1562.908	2435			
Colleagues and co-workers in my department/agency	13.869	2	6.934	15.231	<0.000
Total	1,149,361	2496			

4.4. Trust in Other Communicators

In addition to communication professionals, there are many others who can speak on behalf of an organization, such as top managers, marketing professionals, all other employees, external experts and/or customers or clients. PR/communication professionals were asked to assess how much they think the general public in their country trusts the other communicators from their organization. Professionals think, on a five point scale, that external experts in the field (e.g., professors, consultants) are trusted the most by the general public (M = 3.87, SD = 0.852), followed by the leaders of their organization (CEOs, board members, top executives) (M = 3.80, SD = 0.929), external supporters/fans or customers/clients of my organization (M = 3.75, SD = 0.834), other employees/members of my organization (M = 3.70, SD = 0.841), themselves as communication and public relations practitioners of my organization (M = 3.68, SD = 0.878), marketing and sales representatives of my organization (M = 3.34, SD = 0.964 and activists and other external organizations with their own agenda are thought to be trusted the least (M = 3.05, SD = 0.979). An analysis of variance shows that there are significant differences between the different European countries (see Table 8) and between types of organizations but not for leaders of the organization, other employees and activists (see Table 9).

Table 8. Results of the Analysis of Variance (ANOVA) of country and trust in other communicators (between groups).

	Sum of Squares	df	Mean Square	F	*p*
PR practitioners	28.383	21	1.352	1.773	0.016
Total	1741.139	2268			
Marketing and sales representatives	64.1	21	3.052	3.356	<0.000
Total	2107.974	2268			
Leaders of my organization (CEOs, board members, top executives)	40.364	21	1.922	2.222	<0.001
Total	1984.448	2268			
Other employees/members	34.08	21	1.623	2.311	<0.001
Total	1612.046	2268			
External experts (e.g., professors, consultants)	39.483	21	1.88	2.573	<0.000
Total	1681.462	2268			
External supporters/fans or customers/clients of my organization	36.324	21	1.73	2.514	<0.000
Total	1,582,271	2268			
Activists and other external organizations with their own agenda	72.414	21	3.448	3.688	<0.000
Total	2173.319	2268			

Table 9. Results of the Analysis of Variance (ANOVA) of type of organization and trust on other communicators (between groups).

	Sum of Squares	df	Mean Square	F	*p*
PR practitioners	11.68	4	2.92	3.807	0.004
Total	1945.162	2525			
Marketing and sales representatives	29.71	4	7.428	8.075	<0.000
Total	2348.475	2525			
Leaders of my organization (CEOs, board members, top executives)	5.231	4	1.308	1.518	0.194
Total	2177.239	2525			
Other employees/members of my organization	0.273	4	0.068	0.096	0.984
Total	1784.499	2525			
External experts in the field (e.g., professors, consultants)	7.3	4	1.825	2.523	0.039
Total	1830.953	2525			
External supporters/fans or customers/clients of my organization	9.377	4	2.344	3.382	0.009
Total	1756.858	2525			
Activists and other external organizations with their own agenda	2.658	4	0.665	0.694	0.596
Total	2418.206	2525			

4.5. Building Trust for Organizations and Its Challenges

RQ3: What are the most important goals and hurdles for building and maintaining trust in European organizations?

Building trust for organizations is one of the most important tasks for PR/communication professionals. Respondents were asked to assess the relevance of three goals in trust enhancement: enhancing trust in the leaders of the organization; enhancing trust in the organization and its brands as an entity; and enhancing trust in the market, the business or the sector of society the organization is operating in. Communication professionals think enhancing trust in the organization (M = 4.50, SD = 0.814) and the broader context of the organization (M = 4.26, SD = 0.942) more important than enhancing trust in the leaders of the organization (M = 4.20, SD = 1.048). These results partly confirm hypothesis 5, that stated that building trust in the organization was considered a more important goal than enhancing trust in the leaders. Not expected was that enhancing trust in the sector is also perceived as more important than enhancing trust in the leaders of the organization. An analysis of variance shows that there are no significant differences between European

countries about the goal of enhancing trust in the sector. Significant differences were found on the other two goals (see Table 10). The same results were found for the differences between organizational types (see Table 11).

Table 10. Results of the Analysis of Variance (ANOVA) of country and relevance of enhancing trust (between groups).

	Sum of Squares	df	Mean Square	F	*p*
Enhance trust in leaders of the organization	51.229	21	2.439	2.26	0.001
Total	2639.2	2419			
Enhance trust in the organization and/or its brands	37.196	21	1.771	2.741	<0.000
Total	1587	2419			
Enhance trust in market, business or sector of society	27.429	21	1.306	1.494	0.069
Total	2123.555	2419			

Table 11. Results of the Analysis of Variance (ANOVA) of type of organization and relevance of enhancing trust (between groups).

	Sum of Squares	df	Mean Square	F	*p*
Enhance trust in leaders of the organization	24.2	4	6.05	5.551	0.000
Total	2949.537	2688			
Enhance trust in the organization and/or its brands	7.987	4	1.997	3.024	0.017
Total	1780.209	2688			
Enhance trust in our market, business or sector of society	4.049	4	1.012	1.141	0.335
Total	2384.335	2688			

Building trust through communication can be difficult. Previous research shows that communication needs to be based on knowledge, and it should be transparent and ethical, too. Professionals were asked how challenging it is to meet these criteria in communication. Being transparent (hypothesis 6) in communication, telling what you know and disclosing context, is seen as the most important challenge by communication professionals (M = 3.30, SD = 1.206 on a five-point scale). Being knowledgeable, based on facts and focused on problem-solving ranks second (M = 3.11, SD = 1.278), and being ethical, and adhering to moral and normative expectations is considered the most easy challenge to address (M = 2.80, SD = 1.352). An analysis of variance on country shows that there are significant different thoughts about this across Europe (see Table 12) and in different kind of organizations (see Table 13).

Table 12. Results of the Analysis of Variance (ANOVA) of country and challenges of trust building communication (between groups).

	Sum of Squares	df	Mean Square	F	*p*
Being transparent	154.644	21	7.364	5.248	<0.000
Total	3519.266	2419			
Being ethical	450.91	21	21.472	12.96	<0.000
Total	4423.998	2419			
Being knowledgeable	315.015	21	15.001	9.872	<0.000
Total	3958.81	2419			

Table 13. Results of the Analysis of Variance (ANOVA) of organization type and challenges of trust building communication (between groups).

	Sum of Squares	df	Mean Square	F	*p*
Being transparent	34.701	4	8.675	6.013	<0.000
Total	3907.182	2688			
Being ethical	79,539	4	19.885	11.039	<0.000
Total	4914.321	2688			
Being knowledgeable	37.158	4	9.29	5.724	<0.000
Total	4,392,858	2688			

4.6. Different Trust-Levels Compared

Trust in the communication professional as a person (M = 4.27, SD = 0.54) is perceived as being higher than trust in the communication departments (M = 3.97, SD = 0.65) and in the communication professional in general (M = 3.28, SD = 0.65). These differences are significant; personal trust versus departmental trust, $t(1661) = 22.043$, $p = < 0.000$, 95% CI [0.276, 0.330] and personal trust versus trust in the profession, $t(1641) = 54.634$, $p = < 0.000$, 95% CI [0.949, 1.019].

5. Discussion

This paper has presented discussions on the findings about trust from practitioners' perceptions at a macro (the profession), meso (the departmental) and micro (the individual) level. Contextualized in literature debates about trust in the communication profession, six questions were asked about (1) the perceived trust in the communication profession in general, (2) communication departments in organizations, (3) the communication person, (4) other communicators in the organization, (5) the perceived relevance of building trust for organizations, and, finally, (6) challenges of trust building communication. When considering how practitioners perceive trust in their profession (macro level) the hypothesis (H2) that internal stakeholders, influencers and bloggers are perceived to trust the public relations/communications profession more than journalists was confirmed. This supports some of the cynicism discussed in the literature and reaffirms that the modest antagonism between the communication profession and journalists still remains. This is in line with early and more recent literature about the relationship between the two professions [51,52,63–65].

At the meso level of departments, there are some positive reinforcements for departments and some worrying findings. On the upside top executives are perceived to trust the department the most followed by journalists in second place. The lowest trust is felt to be by the publics that use the communication channels and messages. This finding resonates with the skepticism of the public often found in the literature [91]. At the micro individual level of personal trust, respondents were asked about how they are trusted by the individuals they have direct relations with such as journalists, bloggers, influencers, internal clients, organizational leaders and the peers they work with and for. The results

were skewed towards trust from internal stakeholders starting at the top with the internal organizational leaders, next by internal clients, then externally with journalists followed by publics they are directly in contact with and finally influencers. This seems logical in the context of the literature saying that frequent interactions and previous trusting relationships lead to higher trust levels [48,49].

There are grade or level influences on the trust perceptions with those in higher hierarchical (H3) positions reporting significantly higher levels of personal trust with all stakeholders, with the exception of bloggers and influencers. Perhaps more positively, the gender differences predicted from the literature discussions were not confirmed (H4). Female practitioners report the same levels of trust with internal stakeholders and higher levels of perceived personal trust for external stakeholders. The additional area of interest and focus away from the professional communicators themselves was to explore how others are perceived to be trusted by the general public who communicate on behalf of organizations. This category includes representatives such as the top internal managers, marketing colleagues, other employers within the organization, external experts and then customers or clients. Coming out clearly as the most trusted from the communication professionals' perspective were external experts in the relevant field, such as professors or consultants followed by the leaders of the organization, with activist and other external organizations with their own agenda felt to be the least trusted. This fits with the literature saying that experts and 'a person like me' (H4) are most trusted by audiences [11,80].

Building trust (H5) for organizations is an important core task for PR/communication professionals, and the results support that building trust is considered more important than enhancing trust in the leaders of the organization. Being transparent (H6) in communication and telling what you know and disclosing context, is seen as the most important challenge by communication professionals. On who to trust, significant differences were found with individual practitioners rating themselves more highly trusted than the organization or department they represent and certainly over the profession more generally. This raises areas for future research and exploration that look more deeply at how the interactions and communication of the individual the organization and the practice as a whole are perceived, understood and trusted.

6. Conclusions

The levels of trust in the individual practitioners themselves are perceived to be higher than trust in the organization's department and in the communication profession more generally. Results suggest that the more frequent interpersonal relations we have with internal and external stakeholders, the more trust can be activated.

This paper has approached for the first time the relationship between trust and communication/public relations from a comprehensive view that implies the diverse levels of institutionalism. Following the approach of new institutionalism applied to communication management, most of the research about trust has been approached from a meso-level perspective. The meso-level is above the individual and below the general societal system and allows studying organizations and communication functions from a deeper perspective. In that level, research provides rational arguments about the benefits and recommendations for the construction and maintenance of trust. Differentially, this paper brings a view of the complete spectrum that identifies where the main issues about trust in public relations and communication can be located. The results support new institutionalism's understanding of institutions as normative and regulative elements that provide stability and meaning to social life. Macro levels should connect the communication function with the organization and with broader societal systems. A complete institutionalized perspective brings new focus for the public relations and communications profession(s) and show the elephant in the room regarding the role of professional associations and practitioner bodies in facilitating the connections between societal systems.

Important challenges also emerge in the perception of trust of diverse roles communicating on behalf of organizations in a context of declining trust in mass media, journalism,

business and institutions. This is a key challenge for the communication industry, as communicators need to be trusted by the people they work for, but they are also dependent on the trust of the public with whom they interact to reach their goals and the gatekeepers that bring them to their final audiences—journalists, bloggers, influencers. Moreover, this lack of trust is also a key challenge for post-trust societies with an increasing proliferation of fake news and strategically planned misinformation. As Bentele and Seidenglanz [61] state: "The construction of public communication involves the production of information by public relations prior to their publication on the one hand, the selection and construction processes which create media realities on the other hand. As mediated information is usually not directly or immediately verifiable, trust—particularly public trust—appears to gain more relevance in such societies than it does in others. For the same reason, individual political and economic actors as well as corporate agents (organizations) increasingly rely on the attribution of (public) trust (p. 49)". The authors of this paper expect to have taken a step forward following Valentini's suggestion [81]: "(. . .) it is hoped that the results encourage the scientific community to embrace the involvement of peripheral actors to support the advancement of public relations research in general and, more specifically, in relation to trust in new, broader and more pertinent territories" (p. 16).

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Article

Young Spanish Adults and Disinformation: Do They Identify and Spread Fake News and Are They Literate in It?

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Abstract: The infodiet of young Spanish adults aged 18 to 25 was analysed to determine their attitude towards fake news. The objectives were: to establish whether they have received any training in fake news; to determine whether they know how to identify fake information; and to investigate whether they spread it. The study employed a descriptive quantitative method consisting of a survey of 500 representative interviews of the Spanish population aged between 18 and 25 through a structured questionnaire. The results indicate that they are aware of the importance of training, although generally they do not know of any course and when they do, they do not tend to enroll on one either due to lack of interest or time. These young adults feel that they know how to identify fake content and, moreover, that they know how to do so very well. However, they do not use the best tools. While they do not always verify information, they mainly suspect the credibility of information when it is meaningless. However, they do not tend to spread fake information. We conclude that media information literacy training (MILT) is necessary in educational centres that focuses on the main issues identified.

Keywords: fake news; young adults; Spain

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1. Introduction

In the era of fake news, information consumption patterns require media literacy to empower citizens and help them acquire the media skills necessary to access, understand, analyse, evaluate, produce content and distinguish between real and fake news [1].

In addition to the problem of the immediacy with which it is generated and spread, various studies warn that it is also widely believed in society. If the report "Fake news, filter bubbles, post-truth and trust" [2] revealed that Spanish people were the most likely in Europe to believe fake news, forecasts do not indicate any improvements in the future because in 2022, according to the Gartner report [3], more fake information will be consumed than true. Thus, it is extremely important to determine whether young adults are equipped to deal with misinformation.

This study analyses young adults because they are the age group who most consume information in the digital environment [4,5] and are "those who feel most vulnerable to fake news [. . .]. Indeed, almost half of the people who believe they receive fake news are very often aged between 18 and 34 years old" [6].

In this study we analyse the infodiet of young Spanish adults between the ages of 18 and 25 to determine the filters they apply to the information they consume in order to avoid fake content. We analysed whether they spread fake content because the circulation of fake information is one of the complex problems that must be addressed. In this regard, the World Economic Forum warns that "the spread of disinformation online is one of the 10 global risks of the future" [7] p. 407. We examine whether they have received any kind

of training to deal with fake news as it has damaging consequences for the political, social, and economic future and for daily decision-making, among many other things.

To mitigate it, mechanisms have been created in various spheres, including social networks, the European Union, and the United Nations Educational, Scientific and Cultural Organization (UNESCO). Media organizations have introduced fact-checking. These measures are of interest to the scientific community, with studies documenting the verification initiatives implemented at both the international level [8] and the national level, such as B de Bulo [9] or Maldita.es [10]. Work has also been carried out that has examined the variety of authentication methods, practices and tools aimed at users and media professionals to protect themselves from fake content and to ensure the quality of information presented taking into consideration the recent advances in multi-channel media storytelling and their potential in cross-modal veracity strategies [11].

The similarities and discrepancies between academic and professional discourse around fact-checking have also been analysed [12], as has the role journalistic deontology plays as a tool in the fight against fake information [13]. Such tools help define what some researchers are beginning to refer to as the future of journalism in post-truth times [14] or the new global media ecosystem suffused with fake information [15].

However, along with these initiatives it is also necessary to provide a solid education in fake news due to the amount of non-journalistic content disseminated on the Internet and consumed daily. Alonso [16] point to the need for media literacy across society to deal with information disorder. To this end, several training courses have been organised in Spain.

The modalities offered comprise courses that are seminars or workshops organised by educational or business institutions and taught by experts in the field or by those who work with verification platforms in Spain such as Maldita.es and Newtral, as well as in collaboration with Google after starting their verification workshop. There are also initiatives run by the European observatory for the analysis and prevention of misinformation (ObEDes).

These courses mainly analyse such elements as: the role played in society by fake news and post-truth; identifying the objective of fake news; investigating who is responsible for fake news; studying the models of propagation and distribution of fake news online; classifying the types of fake news; studying the formats and genres of fake news; learning how to detect and combat fake news; and understanding the concept of fake news, among other contents.

In this context, this research aims to provide data on young Spanish adults and their relationship with fake news. The goal is to provide significant data to create effective curricular programs that allow the adaptation from fast consumption to consumption that applies criteria to verify credibility and to examine issues relating to information to contribute to an ecosystem of reliable, responsible and transparent information.

1.1. Literature Review

1.1.1. Concept: Fake News and Disinformation

The Ethical Journalism Network (EJN) defines fake news as "information deliberately fabricated and published with the intention to deceive and mislead others into believing falsehoods or doubting verifiable facts" [17]. Such information, which according to the Cambridge Dictionary [18] is characterized by presenting itself as news, is "generally created to influence political opinions or as a joke". Amoros also considers that it poses as news "with the aim of spreading a hoax or deliberate misinformation to obtain a political or financial end" [19] p. 171.

Fake news is a concept that young Spanish people are well aware of. Mendiguren, Dasilva and Meso [20] reveal that young university adults understand fake news as: fake information that is intended to influence people's opinions; fake information usually spread through social networks in order to manipulate public opinion in the interests of those who

spread it; news with fake information; or news with fake information that becomes so well known that many ends up accepting it as true without even corroborating it.

After conducting a review on how academic studies defined and put into practice the term fake news, Tandoc, Wei Lim, and Ling drew up a classification consisting of six types of fake news: "news satire, news parody, fabricated, manipulated, publicity and propaganda" [21] p. 141.

However, Martens, Aguar, Gómez and Mueller-Langer [22] highlight that there is no consensus regarding this term. Indeed, there are some who argue against using the term fake news, as it has an impact on the credibility of journalism because associating fake information with the news is a breach of the essence of journalism, which is to tell the truth about what happened. Therefore, it should be noted that "even if fake news has the appearance of journalistic news (headline, journalistic structure and appearing to have a reliable interface), fake news can never be considered journalistic content because it contravenes the journalistic essence" [23] p. 245, which is why an open debate on how to designate this type of information is considered necessary. Indeed, Rodríguez-Pérez proposed that it is better to use the term disinformation than fake news to address hoaxes, or misleading or malicious content for four reasons:

"Firstly, we highlight the simplification of the concept with regard to the complexity of disinformation; secondly, the oxymoron of the term fake news; thirdly, the discursive appropriation of the term by political leaders to discredit the media and journalists; and, fourthly, the intrinsic economic and ideological motivations associated with the generation of fake news" [24] p. 72.

The European Commission's Communication on tackling online disinformation [25] defines disinformation as "verifiably false or misleading information created, presented and disseminated for economic gain or to intentionally deceive the public" (para. 1), noting how "misinformation and fake news intervene in democratic processes such as elections and create a public opinion based on lies and false information that many people believe to be true" (para. 3).

Regardless of the term used, it is considered a danger to democratic life and a geopolitical threat [26]. The rise of fake news and disinformation is, therefore, one of the main issues to be addressed internationally.

1.1.2. Young Adults and Fake Information

Studies focused on young adults and fake news have mainly addressed one sector: university students. At the international level, the habits of Portuguese university students with regard to fake news have been investigated, including the criteria they adopt before sharing information and the perception they have of fake information [27,28]. Studies have also examined how Salvadoran students from the Monica Herrera School of Communication and the José Simeón Cañas Central American University inform themselves, process news and verify facts [29]. Similarly, the effectiveness of the courses taught on verification to students at the University of Florence has also been analysed [30].

However, academic interest in the university environment has not focused exclusively on young students but also on other sectors of the university community. For example, the study by Pineda et al. [31] examined the habits of consulting, comparing and verifying of news by students, teachers and administrative staff of the Tecnológico de Antiquioquía in Colombia, while Malaquías, Lizbeth, Pérez Rivera, Ramos and Villegas [32] compared young Mexicans aged between 18 and 30 years old with university education and those with only a basic education in order to establish whether people who do not study at university consume and share more fakes news.

In Spain—the subject of our study—the level of credibility that young university students studying a degree in Communication and Education at the Loyola Andalusia University give information has been investigated, revealing differences both in terms of gender and level of studies [7]. This field of study was expanded by Mendiguren, Dasilva, and Meso [20], who studied whether university students who study journalism at the

University of the Basque Country knew how to identify fake news, if they believed they had the criteria to distinguish it, and how they verify information when they suspect that it lacks rigor, as well as the credibility they give mainstream media and the dissemination of news they trusted least.

The study by Catalina, Sousa and Cristina Silva [4] is also significant. They compared Spain, Brazil and Portugal in order to determine how future journalists inform themselves in the digital environment, the uses they make both for consulting and disseminating news, the degree to which they consider themselves capable of identifying fake information, where they believe most fake news is located, the reasons for its spread; and the degree of credibility they give to various media organizations.

In addition to these studies are various prominent research projects such as the one carried out by the University of Huelva, Granada and Vigo titled "Conspiracy Theories and Disinformation in Andalusia" [33], which analyses whether the current panorama, characterized by the proliferation of disinformation, paves the way for the creation and rapid dissemination of conspiracy theories among young Andalusian residents aged 18 and over.

The study presented here aims to provide data on the identification and dissemination of fake information by young Spanish adults and whether they have received any training in it. The results will be useful in helping to create effective curricular designs that provide them media information literacy training (MILT) that allows them to gain skills and attitudes to address fake news and disinformation.

2. Materials and Methods

2.1. Study Design

In order to determine the habits of young Spanish adults when faced with the reception of fake news, its dissemination, their level of literacy and the importance they give to being trained to detect fake news, we used primary data, namely data collected the first time and specifically to cover particular information objectives [34]. The data were gathered through a descriptive quantitative research design [35]. Specifically, a survey was carried out in which a structured questionnaire was sent to the entire Spanish population aged between 18 and 25 years, with a sample of 501[1] panel interviews being conducted online between 23 July and 14 August 2020.

The study followed a quality control procedure in each of the processes. To guarantee the quality of the questionnaire design and its correct understanding, prior supervision was requested from three social science research professionals. To guarantee the quality of the fieldwork, we collaborated with the company Netquest, which has at its disposal a community of individuals who participate at single invitation only, thereby reducing the risk of self-selection and duplications and providing exclusive information. Moreover, this company holds an ISO 26362 certificate. Prior to carrying out all the field work, the questionnaire was piloted to check its suitability.

2.2. Sample Design

For the design of the sample [36], the weight of each sociodemographic segment in the Spanish population was sought according to the National Institute of Statistics, applying the same proportions to the scheduled 500 interviews. As the fieldwork was carried out, compliance with study quotas was verified. Therefore, the large sample size and the chosen sampling system allowed us to extrapolate results from the entire Spanish population between 18 to 25 years old, with a sample error of ±4.47% and a confidence level of 95% (Table 1).

[1] One more interview in addition to the scheduled sample were carried out and were included.

Table 1. Sample distribution.

	Spanish Population Distribution	Number of Predicted Interviews	Final Distribution
Sex			
Male	51%	255	255
Female	49%	245	246
Age			
18	11%	53	51
19	11%	55	54
20	11%	57	58
21	12%	60	60
22	13%	63	64
23	13%	67	67
24	14%	69	72
25	15%	75	75
Region			
Northeast/Catalonia and Balearic Islands	10	50	50
Levante	15	75	75
South/Andalusia	21	105	106
Central	10	50	50
Northwest	8	40	39
North central	7	35	36
Canary Islands	2	10	10
MAB (Metropolitan area of Barcelona)	11	55	55
MAM (Metropolitan area of Madrid)	16	80	80
Social class			
A1. High-high	16	80	80
A2. High	22	110	109
B. Medium-high	16	80	81
C. Medium-medium	23	115	120
D. Medium-low	7	35	35
E1. Low	13	65	65
E2. Low-low	2	10	11

Source: Authors.

2.3. Questionnaire Design

The first part of the questionnaire collected information on sociodemographic data such as sex, age, province, habitat, area, social class and educational level. Next, the central questions of the questionnaire were broken down into why fake news is generated, the ability to detect fake news, why a news story is considered fake, to what extent the news is checked and how this information is verified, how often fake news is disseminated and why, finishing with the importance and level of training in the verification of fake news.

2.4. Statistical Methods

The collected data was cross-referenced with sociodemographic variables to observe whether there were statistically significant differences between the various segments analysed. These segments were: sex, age, level of education (first grade, second grade, third grade),[2] size of habitat (less than 50,000, more than 50,000 inhabitants), social class (high-high, high, medium-high, medium-medium, medium-low, low and low-low) and geographical area (Northeast/Catalonia and Balearic Islands, Levante, South/Andalusia, Cen-

[2] First grade: No studies (incomplete primary studies); Primary school.Second grade: Secondary school up to 18 years (qualifications include the equivalent of UK GCSEs, A levels, BTECs).Third grade: Equivalent to Technical Engineer 3 years, University Schools, Technical Architects, Teaching, ATS, University Graduates 3-year course, Social Graduates, Social Workers, Bachelor, Master's, Doctorate.

tral, Northwest, North central, Canary Islands, Metropolitan area of Barcelona, Metropolitan area of Madrid) of the respondents.[3]

To determine the existence of statistically significant differences in the information obtained, a *t*-test of proportions was carried out, which allows for the comparison of cell by cell data of a table with category variables of independent samples [37]. This test compares the values between two cells of the same row with the columns of the table. For each column, the *t*-test was used on the hypothesis that the population proportion of case A and case B can be considered equal versus the hypothesis that they are significantly different (either much higher or much lower) at a 95% confidence level. In the tables, significant statistical differences are represented with capital letters, which coincide with the column whose proportion is considered higher.

3. Results

3.1. Literacy of Young Spanish Adults Regarding Fake News

We found that 76.8% of young Spanish adults aged between 18 and 25 attach great importance to media literacy to prevent disinformation (very important 33.1%, quite important 43.7%). In particular, those who attach greatest importance to training in the verification of information and detection of hoaxes are young people over the age of 20 and those with a higher education. No statistically significant differences were observed in the rest of the segments analysed (Table 2).

Table 2. Question 15: How important is it to be trained in the detection of fake news?

		AGE			EDUCATION		
	Total	**18 to 19 Years Old (A)**	**20 to 22 Years Old (B)**	**23 to 25 Years Old (C)**	**No Studies /First Grade (D *)[4]**	**Second Grade (E)**	**Third Grade (F)**
Total Individuals	**501**	**105**	**182**	**214**	**6**	**290**	**205**
	%	%	%	%	%	%	%
Very important	33.1	28.6	34.6	34.1	16.7	30.0	38.0
Quite important	43.7	40.0	44.5	44.9	66.7	43.1	43.9
Somewhat important	17.8	24.8	15.9	15.9	0	21.4	13.2
Not very important	4.2	4.8	3.8	4.2	16.7	4.1	3.9
Not important	1.2	1.9	1.1	0.9	0	1.4	1.0
Top Two Box	76.8	68.6	79.1 A	79.0 A	83.3	73.1	82.0 E
Bottom Two Box	5.4	6.7	4.9	5.1	16.7	5.5	4.9

Source: Authors.

However, 76.2% of those interviewed were unaware of any literacy program, while 23.8% state that they knew of one, either as a result of their own initiative (11.4%) or because they had been offered one (12.4%). Young people with third grade studies were most familiar with this type of course. No significant differences were observed in the rest of the segments studied (Table 3).

[3] The article presents the total data by age and by educational level since they showed the greatest differences, although all the aforementioned segments were analysed and the most relevant data will be indicated where necessary.

[4] (*) Insufficient sample base for calculating statistical differences.

Table 3. Question 16: Which of these statements best fits your situation regarding your training in fake news?

		AGE			EDUCATION		
	Total	**18 to 19 Years Old (A)**	**20 to 22 Years Old (B)**	**23 to 25 Years Old (C)**	**No Studies/First Grade (D *)**	**Second Grade (E)**	**Third Grade (F)**
Total Individuals	**501**	**105**	**182**	**214**	**6**	**290**	**205**
	%	%	%	%	%	%	%
I know of a program or course on how to check news because I have looked for one myself	11.4	6.7	11.0	14.0	16.7	9.7	13.7
I know of a program or course on how to check news because I have been offered one	12.4	15.2	13.2	10.3	16.7	10.7	14.6
I don't know of any program or course	76.2	78.1	75.8	75.7	66.7	79.7 F	71.7

Source: Authors.

Regarding participation in a course or receiving training on how to detect fake news, among those young adults who were aware of any, 76.5% did not take part in any compared to 23.5% who received such training (Table 4). The courses undertaken were carried out mainly at university (46.4%) (Table 5) and were mainly free (64.3%) (Table 6).

Table 4. Question 17: Have you taken any course or had any training on how to detect fake news?

	Total
Individuals Aware of a Course	**119**
	%
Have taken a course	23.5
Have not taken a course	76.5

Source: Authors.

Table 5. Question 18: Where did you do it?

	Total
Individuals Who Have Taken a Course	**28**
	%
University	46.4
Institute	10.7
Other answers	25
Do not know/Do not answer	17.9

Source: Authors.

Table 6. Question 19: What was this course like?

	Total
Individuals Who Have Taken a Course	**28**
	%
Free	64.3
Paid by student, family, friends	21.4
Grant	3.6
A college or degree course subject	10.7

Source: Authors.

The reasons why young people who, although aware of a course on how to detect fake news, did not take part in any, were basically because they were not interested (35.2%), lacked time (14.3%), especially those aged 20 to 22 (20.6%), and because they believed that they already knew how to detect fake news (14.3%) (Table 7).

Table 7. Question 20: Why have you not taken any course or training on how to detect fake news? (Do not suggest).

		AGE			EDUCATION		
	Total	**18 to 19 Years Old (A *)**	**20 to 22 Years Old (B)**	**23 to 25 Years Old (C)**	**No Studies/First Grade (D *)**	**Second Grade (E)**	**Third Grade (F)**
Individuals Who Know of Courses but Have Not Taken Any	**91**	**17**	**34**	**40**	**2**	**49**	**40**
	%	%	%	%	%	%	%
I'm not interested	35.2	35.3	47.1	25.0	50.0	42.9	25.0
I don't have time	14.3	23.5	20.6 C	5.0	0	16.3	12.5
I already know how to/I have a program	14.3	5.9	14.7	17.5	0	14.3	15.0
I don't have any money	1.1	0	0	2.5	0	0	2.5
There are other faster and easier ways to verify the information	8.8	0	5.9	15.0	0	4.1	15.0
The moment has not arisen	9.9	11.8	2.9	15.0	50.0	8.2	10.0
I haven't been offered a course	2.2	0	0	5.0	0	2.0	2.5
I haven't found one	3.3	0	2.9	5.0	0	4.1	2.5
It wasn't online	1.1	5.9	0	0	0	2.0	0
Other answers/I do not attend courses	1.1	0	2.9	0	0	2.0	0
Do not know/Do not answer	5.5	11.8	2.9	5.0	0	6.1	5.0

Source: Authors.

Finally, young people believe that the main reasons that fake news is generated include the following: to gain audiences or more visits, followers or clicks (17%); due to readers' lack of training, who do not know how to inform themselves, corroborate the information or be critical of the information received (13.8%); to attract attention or through interest and convenience (11.8% respectively); to earn money and manipulate and influence society (both reasons, 10.8%). None of the other reasons cited exceeded 10% of mentions (Table 8).

3.2. Identification of Fake News

To achieve the second aim of this study, namely to determine whether young Spanish adults know how to verify the content they consume, we first analysed the extent to which young people believe they know how to identify fake news. The results indicate that 59.5% of 10 young people think they know how to identify fake news very well or quite well (59.5%), a perception that increases among men (63.9%), with age (63.1% from 23 to 25 years) and with the level of studies (third grade, 69.35) (Table 9).

Table 8. Question 3: Why do you think fake news, that is, rumors, hoaxes, lies, is generated in the media, e.g., TV, social networks, press etc.? (Do not suggest).

	Total
Total Individuals	**501**
	%
To gain audience/more visits/more clicks/more followers	17.0
Not knowing how to inform oneself/not knowing how to be critical of the information received/reader's fault/not knowing how to compare	13.8
To earn money	10.8
To draw attention/gain fame	11.8
Manipulate/Influence society	10.8
Benefits, interests and convenience	11.8
Social alarm/to frighten/fear	6.6
Malign intentions/people are bad/jealousy	4.0
Boredom	3.0
Errors or intent of the journalist or the information publisher	4.2
To do harm/to cause damage	3.8
To deceive/cheat/lie	3.6
Internet	2.4
To obscure other news	2.0
To generate controversy	4.8
Morbidity	2.0
Hatred	1.4
To discredit	1.4
For fun	1.2
The reader spreads the information	0.6
The reader wants to believe the information	0.8
Other answers	4.8
Do not know/Do not answer	5.2

Source: Authors.

Table 9. Question 4: When you read a news item, either because you looked for it on the Internet or it was sent to you through any medium, such as WhatsApp, Instagram, Tik Tok, email, etc., how well do you think you know how to identify whether it is fake news, a rumor, a hoax, a lie?

		AGE			**EDUCATION**		
	Total	**18 to 19 Years Old (A)**	**20 to 22 Years Old (B)**	**23 to 25 Years Old (C)**	**No Studies/First Grade (D *)**	**Second Grade (E)**	**Third Grade (F)**
Total	**501**	**105**	**182**	**214**	**6**	**290**	**205**
	%	%	%	%	%	%	%
Very well	12.8	8.6	14.3	13.6	0	11.0	15.6
Quite well	46.7	41.9	46.2	49.5	0	42.8	53.7 E
Somewhat well	32.3	40.0	31.3	29.4	100.0	36.9	23.9
Not very well	5.6	5.7	4.9	6.1	0	6.2	4.9
Not at all well	2.6	3.8	3.3	1.4	0	3.1	2.0
Top Two Box	59.5	50.5	60.5	63.1	0	53.8	69.3
Bottom Two Box	8.2	9.5	8.2	7.5	0	9.3	6.8

Source: Authors.

Foremost among a range of reasons presented to the interviewees as to why they think a news item is fake, is the incongruity or meaninglessness of the news item, an aspect most mentioned among women (87%), the population aged 18–19 years (89.5%) and among the upper and upper-middle social class (86.7%). Another notable reason is whether the news comes from social networks such as WhatsApp (58.5%) and, to a lesser extent, if it

generates social alarm (43.7%), has a very attractive headline (33.1%) or contains shocking information (28.9%) (Table 10).

Table 10. Question 5: What makes you think that a news item is fake? You can mark multiple answers. (Show list with all items together) (Rotate order of items).

		AGE			EDUCATION		
	Total	**18 to 19 Years Old (A)**	**20 to 22 Years Old (B)**	**23 to 25 Years Old (C)**	**No Studies/First Grade (D *)**	**Second Grade (E)**	**Third Grade (F)**
Total Individuals	**501**	**105**	**182**	**214**	**6**	**290**	**205**
	%	%	%	%	%	%	%
If it generates social alarm	43.7	37.1	44.0	46.7	16.7	40.7	48.8
If it comes from social networks like WhatsApp	58.5	51.4	61.5	59.3	33.3	54.5	64.9 E
If it has an eye-catching headline	33.1	19.0	38.5 a	35.5 A	16.7	31.4	36.1
If the information is shocking	28.9	22.9	26.9	33.6 A	16.7	24.8	35.1 E
If it's incongruous, meaningless	82.0	89.5 B	78.0	81.8	66.7	81.0	83.9
Other answers	8.2	4.8	9.3	8.9	16.7	7.9	8.3

Source: Authors.

We found that 4 out of 10 young people (39.5%) are in the habit of always checking whether the news they read is true or fake compared to 55.7% who check it occasionally, while 4.8% never verifies it (Table 11).

Table 11. Question 6: Do you check whether the news you read is true or fake?

		AGE			EDUCATION		
	Total	**18 to 19 Years Old (A)**	**20 to 22 Years Old (B)**	**23 to 25 Years Old (C)**	**No Studies/First Grade (D *)**	**Second Grade (E)**	**Third Grade (F)**
Total Individuals	**501**	**105**	**182**	**214**	**6**	**290**	**205**
	%	%	%	%	%	%	%
Always	39.5	36.2	39.0	41.6	16.7	39.7	40.0
Sometimes	55.7	59.0	56.6	53.3	83.3	54.5	56.6
Never	4.8	4.8	4.4	5.1	0	5.9	3.4

Source: Authors.

Regarding the mechanisms that young Spanish adults use to verify information, 49.9% do so through friends and family (primarily women, 54.5%; young people aged 18-19 years, 60%; and those with a lower level of studies, second grade studies, 55.3%), while 40.7% check it through specialized websites (StopBulos, Maldita.es), especially young adults between 23 and 25 years old (44.8%). Other ways of verifying information, cited to a lesser extent and grouped in "Other answers", include consulting other media outlets such as the press, radio or television (13.8%) and investigating the information and sources (7.8%), with other methods reaching much lower percentages (Table 12).

Table 12. Question 7: (Complete if you answer "Always" or "Sometimes" on p. 6) How do you verify whether the information you have searched for or have been sent is true? You can mark multiple answers (Show list with all items).

		AGE			EDUCATION		
	Total	**18 to 19 Years Old (A)**	**20 to 22 Years Old (B)**	**23 to 25 Years Old (C)**	**No Studies/First Grade (D *)**	**Second Grade (E)**	**Third Grade (F)**
Individuals Who Always or Sometimes Check the News	**477**	**100**	**174**	**203**	**6**	**273**	**198**
	%	%	%	%	%	%	%
I check it with family or friends	49.7	60.0 C	48.9	45.3	50.0	55.3 F	41.9
I verify it on StopBulos, Maldita.es or similar websites	40.7	31.0	41.4	44.8 A	16.7	39.2	43.4
Other answers	35.4	28.0	35.1	39.4	33.3	30.8	41.9 E
Do not know/Do not answer	0.8	0	1.1	1.0	0	0.7	1.0

Source: Authors.

When asked about the degree of importance they attach to the actions of organizations to verify the information, the results indicate that the reputation of the media organization is the most important factor in determining whether the news is true or fake (Top Two Box 75.2%), a view held primarily by young people between 23 and 25 years of age (81.8%) and those with third grade studies (81%). In contrast, the least relevant factor is the author of the news item (Bottom Two Box 36.5%) (Table 13).

Table 13. Question 8: Think of the moment when you are reading a news item that you have searched for or have been sent. How much importance do you attach to each of the following in order to know whether the news item is true or fake? (Rotate items and show scale).

	FACTORS				
	The Reputation of the Media Organization (A)	**The Name of the Author of the News Item (B)**	**The Person or Entity That Sent the News Item (C)**	**The Sources Cited in the News Item (D)**	**The Date of Publication (E)**
Total	**501**	**501**	**501**	**501**	**501**
	%	%	%	%	%
A lot	35.9 BCE	7.8	21.6 B	31.9 BCE	19.4 B
Quite a lot	39.3 B	21.8	37.1 B	34.3 B	35.7 B
Some	18.8	33.9 AD	29.7 AD	23.4	30.9 AD
Not very much	3.2	23.6 ACDE	8.0 A	6.0 A	9.6 AD
None	2.8	13.0 ACDE	3.6	4.4	4.4
Top Two Boxes	75.2 BCDE	29.5	58.7 B	66.3 BCE	55.1 B
Bottom Two Boxes	6.0	36.5 ACDE	11.6 A	10.4 A	14.0 A

Source: Authors.

3.3. Dissemination of Fake News

We found 87.6% of young people have at some time received fake news, especially women (91.5%), those with the highest level of education (93.7%) and social class (90.7%), while 6.6% claim to have spread fake news at some point, compared to 93.5% who do not tend to spread such news (Table 14).

Table 14. Question 9: Now think specifically about what you do when you receive or forward fake news. Have you ever received, through any medium, fake news? Q.10: Have you ever spread a fake news item through any medium knowing that it was fake?

		AGE			EDUCATION		
	Total	**18 to 19 Years Old (A)**	**20 to 22 Years Old (B)**	**23 to 25 Years Old (C)**	**No Studies/First Grade (D *)**	**Second Grade (E)**	**Third Grade (F)**
Total	**501**	**105**	**182**	**214**	**6**	**290**	**205**
	%	%	%	%	%	%	%
Have received fake news	87.6	82.9	90.7	87.4	66.7	83.8	93.7 E
Have spread fake news	6.6	8.6	6.6	5.6	0	6.9	6.3

Source: Authors.

Regarding whether fun, boredom or the prospect of generating more social relations influence the dissemination of fake news, the data indicate that 51.5% never do it because they enjoy it, as an excuse to relate to people (72.7%) or out of boredom (60.6%). On the other hand, 48.5% of those who spread fake news knowingly always did so to warn others that the item was fake news (Table 15).

Table 15. Question 11: Complete Q.11 if you answer "Yes" on q. 10) How often do you spread fake news for the following reasons? (Show phrases randomly).

	MOTIVES			
	I Enjoy It (A)	**It's an Excuse to Socialize with People (B)**	**I Do It Only When I'm Bored (C)**	**To Warn That It's Fake News (D)**
Individuals Who Have Knowingly Spread Fake News	**33**	**33**	**33**	**33**
	%	%	%	%
Always	6.1	12.1	15.2	48.5 ABC
Sometimes	42.4 B	15.2	24.2	42.4 B
Never	51.5 D	72.7 D	60.6 D	9.1

Source: Authors.

Finally, approximately 4 out of 10 young people always encourage their contacts/friends/family members to disseminate information only if they have first verified it (45.1%); women stand out here, as well as young people with third-grade studies and those from high and medium-high social classes. When they receive a news item and realize that it is or may be fake news, 5 out of 10 young people always warn the person who sent it to them that it is or may be fake (55.1%), with strongest showing from the same segments: women, young people with third-grade studies and those from high and medium-high social class. Seven out of 10 respondents eliminate news from their social networks when they know it to be fake (75%), especially young people from high and medium-high social classes (Table 16).

Table 16. Question 12: Do you encourage your contacts/friends/family to share information only if they have verified it? Question 13: When you receive a news item and you realize that it is or may be fake news, do you tell the person who sent it to you that it is or may be fake? Question 14. Do you delete news from your social networks that you know to be fake?

	Question 12 Encourage Verification	Question 13 Warn Sender It Is Fake	Question 14 Remove Fake News
Total Individuals	**501**	**501**	**501**
	%	%	%
Always	45.1	55.1	75.0
Sometimes	34.9	36.7	19.4
Never	20.0	8.2	5.6

Source: Authors.

4. Discussion and Conclusions

Young Spanish adults are aware of the importance of training in order to know how to determine the veracity of information. This degree of awareness is probably, as the Digital News Report Spain [38] indicated, a result of the fact that young people between 18 and 24 believe that most news cannot be trusted, a finding we corroborated when we asked them about the causes of disinformation; young Spanish adults indicated that it is a result of a lack of critical knowledge when consuming information, this reason being ranked second among the reasons provided: 13.8% believe that not knowing how to get informed, not knowing how to contrast content, and not being critical of the information received is one of the main reasons why fake news is generated. This is interpreted as apportioning blame to the illiterate reader given that their lack of training contributes to achieving the objectives of those who create fake news items in order to gain an audience, generate more visits and gain more followers (17%). Training is necessary: to acquire the media competencies to tell the truth from falsehoods; to stop the profits made by the creators of fake news; and to combat one of the reasons why they consider such information is generated: readers that lack the ability to discern disinformation.

However, it is highly significant that, although they attach great importance to media literacy, 8 out of 10 young people do not know of any training program, which implies that they have not attended one either. These results allow us to conclude that there are problems surrounding the publicity of the programs offered because, despite being abundant, young adults between 18 and 25 years old remain unaware of them. This calls for measures to be taken in order to improve their impact on this age group.

However, being aware of courses does not mean that they are going to undertake one either, since only 2 out of 10 young people who are aware of a fake news learning program end up taking one. Those who have mainly did so for free in universities and institutes, allowing us to conclude that only those who have studied in educational centres providing such teaching programs have taken one. This theory is strengthened by the observation that young adults do not take the initiative to find these courses and that the main reasons they fail to enrol include not being interested in the course, a lack of time, or because they believe that they already know how to discern real news from fake. Thus, we believe that educational centres of all levels should be the main places to carry out such training since they eliminate the problem of time and students' refusal to undertake one in favour of acquiring critical knowledge of information. In this regard, UNESCO stresses that this training must be undertaken in the academic sector.

Similarly, due to the lack of training in this age group, we can confirm, regardless of gender or level of studies, the presence of a "media literacy crisis" and the urgent need for "transmedia literacy" Scolari [39] or of a media and informational educommunication. Such training is necessary because young people between 18 and 25 years of age believe that, despite not being aware of or having taken a course, they know how to identify the fake news, with 6 out of 10 believing they know how to do so very well or quite well. However, when asked how they identify fake news, for 5 out of 10 young people the

most representative answer is asking family and friends. The study "The conditioning factors of disinformation and proposed solutions against its impact based on the degrees of vulnerability of the groups analysed" [40] carried out by the Centro de Estudios de San Pablo CEU revealed the trust they usually have in their relatives, friends and closest personal references, believing the information that comes through them to be reliable and credible.

Thus, young Spanish adults believe they know how to identify fake news but do not use the optimal tools for its verification. These results are corroborated by those provided by the "Study on the impact of fake news in Spain" [41] which revealed that more than fifty percent of young people believed they knew how to identify fake news but that only 4% actually knew how to, and by those of Herrero, Conde, Tapia and Varona [7], who concluded that young adults have difficulties in differentiating the veracity of sources. Therefore, these data lead us to believe that it is necessary to create more activities and to provide support to socio-educational projects in order to allow young Spanish adults to attend courses, to take the initiative to look for such courses autonomously and to raise their interest in them. According to the data obtained, they also play a role in the creation of fake news, as they are a vulnerable sector.

Young Spanish adults represent an age group that does not always verify information. They primarily suspect the credibility of those news stories that are incongruous or nonsensical, or that reach them through WhatsApp. In second place are those news stories that have an eye-catching headline, that generate social alarm or that are shocking; the students did not, however, indicate any actions various organizations stress as being necessary to perform, such as investigating the reputation of the media outlet, the sources or the date of publication. However, when asked about these actions, they indicated the reputation of the media organization and the sources as being very important. Therefore, while these verification actions are not ranked, young Spanish adults do understand their degree of importance. Therefore, the regular application of these actions vis-à-vis critical information consumption must be encouraged in training programs.

However, it is significant that although they receive a lot of fake news, as the study by Panda Security [6] also revealed, young Spanish people do not tend to spread it. These findings are corroborated by those of Carballo and Marroquín [29], who observed that three quarters of the young adults analysed reported that they do not spread fake information, an observation also confirmed internationally by Guess, Nagler and Tucker [42], who found that during the Trump elections "users over 65 years old shared seven times more articles from fake news domains than the youngest age group" (p. 1).

Thus, although there is a certain tendency to criticize the younger generations, this has more to do with fear than a real analysis of these younger generations. They are attacked for being connected to the Internet all day sharing any type of information. Not only do they tend not to spread it, they also delete it from their social networks, an observation also made in the study by Carballo and Marroquín (2020) [29].

Therefore, in agreement with Buckingham [43], we conclude that an implementation of news literacy and coherent and rigorous "educational" programs is needed. Reports indicate that in 2022 fake information will be habitually consumed and that although young adults are aware of the dangers of fake news, they are not trained in verifying information or undertaking critical consumption.

It is important that such training be undertaken in educational centres and should focus mainly on teaching students how to identify fakes news. Moreover, young adults need to be taught the importance of not spreading it. In addition, it should be stressed to them that although spreading fake news is not a deficiency in this age group, believing so without having training or mastering effective techniques is. Nonetheless, these curricular programs should also teach young people that they should not get carried away with spreading it simply for the fun of it, as this is one of the main reasons that leads them to sharing fake information on the few occasions they do. Similarly, they must be trained to be critical of information, checking the veracity of the information in each news item

by e.g., checking the source and the date (among other actions recommended by various organizations), and not just when they believe it to be of doubtful origin.

Ranieri, Si Stasio and Bruni (2018) [30] confirm that young adults who take training courses increase their skills. They analysed the results obtained in workshops on fake news provided to students at the University of Florence (2017–2018) and concluded that they are useful because they allow optimal information literacy.

Future studies should examine the reasons preventing young Spanish adults between 18 and 25 years old from knowing about training courses on fake news, aggregate the programs being undertaken in educational centres in Spain, and carry out comparative studies in across Europe.

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Article

The Demonization of Islam through Social Media: A Case Study of #Stopislam in Instagram

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Abstract: This article studies the process of demonization, its consequences, and how social media contribute to the formalization of its axiology. The demonization of societies aims to create social subjects that fit into the idea of the "other" by exposing them to compulsory invisibility. This research's main objective was to examine how demonization is used as a weapon of oppression to devalue specific individuals through the hashtag #StopIslam and Instagram's role in this process. The methodology used for this purpose has consisted of an empirical and quantitative analysis of the most recent (1 January 2020–31 July 2020) posts on Instagram with #StopIslam, analyzing the images and the content. The study has determined how, through social media manipulation, erroneous ideas are transmitted that prevent the Islamic collective's integration, especially in European countries. The conclusions will reflect hate speech and how the Islamic world's demonization results in the Muslim community's stigmatization, racism, and Islamophobia. Although there are different articles related to demonization and hate speech, there are not many scientific resources that explain these variables on Instagram and how it affects the inclusion of the Muslim community in Europe, significantly when the time spent on the Internet is growing.

Keywords: Instagram; demonization; hate speech; arab world; Islamophobia; social media

1. Introduction

Throughout history, from the social discursive podium and the establishment, it has been possible to demonize and devalue social groups that are perceptively located in a subordinate place, thus creating a negative image of the other. Social domination results from an unequal division of power, where those who have less power are forced to see their life expectancies limited [1]. This limitation is expressed in various ways, usually from demonization, through polarization, exclusion to invisibility. Although in some research, demonization is treated as a rhetorical figure (e.g., [2]), this study will delve into its media construct and more immediate consequences.

The Muslims' demonization is carried out fundamentally by relating, by conceptual simplification, Muslims to terrorism. By constructing the suspected subject as a 'potentially terrorist Muslim', society can misinterpret this group's nature and generate a community feeling that damages the social perception of people who practice Islam [3]. In this way, all Arabs may be identified as radical Muslims and terrorists, offering a mistaken and widespread image of Arab countries that, out of ignorance, causes other societies to turn away from it out of fear [4], which eventually results in the stigmatization of the Muslim community, racism, and Islamophobia.

The social media, as massifiers of the constructs of reality, play an essential role in introducing demonization into society and in promoting all its consequences, since they use instruments such as repetition of expressions, symbolic polarization, and euphemisms, among other resources, which distort

the vision of those who receive these messages by making a conceptual simplification, fundamental for the understanding of public opinion [5]. Moreover, information is exaggerated by making comments without substantiating what is expressed, manipulating the reader's opinion about a news event. According to Cleland (2014) [6], social media sites have the right characteristic to spread racist opinion and hate speech.

For this reason, and in order to understand how demonization is used as a weapon of oppression in the case of #StopIslam and the role of Instagram in this process, a mixed methodology is used, qualitative techniques to explore the hashtag based on the "five walls of Islamophobic hate" and a review of the literature using the Web of Science (WoS) and Scopus, under the search criteria—and their Boolean algorithms—" demonization", "social media" and "Islam", terms which are included in both Spanish and English and quantitative techniques using SPSS to evaluate the dates. This led to a review of the grounded theory with which the same epistemological, ontological, and theoretical forms would be correlated.

2. Social Media, Demonization, and Islam

2.1. Social Media

With the widespread use of the Internet, the way by which the population interacts has been modified [7]. Communication begins to be more interactive. Users can generate social media content by becoming prosumers and modifying the usual communication scheme [8]. Since the mid-2000s, social media turned into fashion and a place where everybody wants to be; platforms as Facebook, Twitter, Youtube, and Instagram generate content and keep people in it for many hours. The term "social media" makes one think whether not all media are social in some way. This depends on how social media is understood [9]. In the present study, social media is going to be understood, according to Fuchs [10], under community and communication criteria. Social media is considered a social structure composed of a set of users related to some criteria. Moreover, it allows generating new business opportunities, revolutionizing social development, and consolidating existing relationships in the offline world to build new links [11].

There is a long list of social media (Facebook, Twitter, Youtube, Linkedin, etc.). However, Instagram, according to Statista (2020) [12], is the social network with the highest increase in users during the quarantine caused by the Covid-19 pandemic, created in 2010 by Kevin Systrom and Mike Krieger, and aimed at photography enthusiasts, but, over time, it has grown and added functionality. Furthermore, a study realized by Hootsuite and We Are Social in 2019 [13] provided evidence that Instagram has been the fastest growing social network since its birth.

On Instagram, it is also possible to observe social networks' adverse effects, as in traditional media [14,15]. Generally, in this network, they have been attributed to the process of social comparison, which can cause demonization of a society that is reflected as inferior [16].

2.2. Demonization: Concept and Characteristics

Demonization consists of the process through which the source is sacralized with dialectical and discursive resources such as discretion, integrity, or goodwill, promoting a symbolic construction of reality created under the conceptual simplification protagonist–antagonist, which causes the "other" to be not culturally accepted, inferior or inconsiderate, carrying with it discrimination, paradigms of hatred and stereotypes, and *clichés*, which, therefore, devalue it morally and perceptively, damaging their social identity and even their identity self-recognition [17]. Online antagonism over social media accelerates racism through the dispersal of harmful discourse [18].

Demonization leads to an attitude of distrust in public opinion, which removes moral restrictions, intending to turn the other into a morally inferior being, criminalizing his views, radicalizing the discourse, and distracting and polarizing society at the same time that the ideas of the sender are exposed as correct and justified [5]. Issues such as radical patriotism, racism, terrorism, opposition,

or ethnic minorities carry with them a burden of demonization towards the subject with contrary convictions [19].

Quoting Field (1996) [20], alluding to the cinematographic narrative paradigm, in order to generate identification with the protagonist, and therefore the express or tacit rejection of the antagonist, it is necessary to create a dynamic of confrontation, even if it does not exist, using the resources of empathy and transference. Thus, the discursive process of demonization would be composed as follows [5]: (1) To explore the interests of the audience, which allows to deepen them and to achieve empathy through the speech; (2) Confront the interests of the group to be demonized, building points of disagreement between the target audience and the group to be demonized; (3) Standing up for the interests of the public, the demonized group is accused of going against the common or at least majority interest; (4) Introduce disqualifying sound bites to the speech, such adjectives should be short, few, forceful, and easy to memorize; (5) Reiterate the adjectives frequently in the speech. Repetition is the key to persuasion and the institutionalization of realities; and (6) Radicalizing attacks to the point of stigmatizing the opposite.

At this point, reference could be made to Goffman's concept of "impaired identity" (1963) [17] concerning stigmata. The author [17] makes an extensive journey through all the typologies of stigmas and concretely puts his attention on the norms, referring to how the individual observes the other through the meanings that society constructs; this is produced by what Goffman (1963) [17] qualifies as "symbols of stigma" (p. 63), closely linked to the devaluation of the individual by society, which consumes information, constructs a socialized reality, and stigmatizes from those common signs.

These stigmas divide between an "us" (the so-called integrated or normal) and a "them" (the deviant, the marginal, the "others"), which is determined not only by socio-economic conditions, but also by the reading that is made of them, and the interpretation that they make of "themselves" and about "us" [3]. With this concept, Goffman (1963) [17] wants to account for the disabled individual's situation to obtain full social acceptance. These stigmas encourage the discrediting of the individual. In this regard, the demonization takes advantage of these stigmas to promote the use of disqualifiers and radicalize the stigmatized attacks, so it is simpler to dissociate the "other" of an equitable moral nature to the "we", reifying it and making it object of hate through the speech, as it happened with the exercise of the two minutes of hatred to Emmanuel Goldstein, to which the workers of Eurasia were exposed in the Orwellian dystopian 1984.

Some authors, such as Santos (2017) [1], put forward the idea that demonization and social inequalities and hierarchies between different countries would be eliminated during globalization. However, on the contrary, the opening of cultural and economic borders tends to reinforce this type of behavior. As a result, acts of "xenophobic deglobalization" are emerging, such as Brexit, Catalan separatism in Spain, and many of the United States' protectionist policies.

2.3. Demonization and Its Consequences in Social Media

As has been understood so far, the process of demonization provides an opportunity to create misguided knowledge about people who are ethnically and culturally distant. This is how racism is conceived, which in general terms is a broad form of discrimination that encompasses social, cultural, and intellectual aspects to nullify the diversity and heterogeneity of a society, community, or ethnic group [4], Islamophobia, which is a manifestation of dislike towards people who profess Islam or come from countries where it is professed [21], and finally, the invisibility that encourages the creation of deteriorated and oppressed identities [22]. Social media contribute to freedom of speech, allowing people to express their thinking and share their feelings. However, some people abuse this and send offensive comments that could negatively affect the people [23]. The most damaging impact of freedom of speech is the number of messages full of hate shared by unconscious people. According to Putri et al., (2020) [23], hate speech "is any kind of communication which is offensive, underestimating, and humiliating an individual or group of people" (p. 1). As can be observed, the consequences of demonization and hate speech in social media cause: Racism, Islamophobia, and invisibility.

2.3.1. Racism

According to some theorists such as Baum (2006) [24] and Banton and Harwood (1975) [25], the concept of racism began to develop theoretically in the 1930s, associating itself with state doctrines based on racial superiority. It emerged mainly in the German socialist period between 1933 and 1945.

Although the term was developed at the time mentioned above, it does not mean that there were no earlier racist moral, institutional, and practical principles. Previously, this concept was known as "race relations" [26], for example, with the racial segregation of the United States that began institutionally in 1790, the apartheid in South Africa (1948–1992) or, with historical examples as in ancient Rome, when an alien did not have *status civitatis*.

To develop the concept of racism, it is essential, first, to understand two other concepts: "racialization" and "racialism". Two meanings can be distinguished for the term "racialization". Firstly, it will be equated with the imbalance between racial groups considering races and the different hierarchies [26]. On the other hand, there are no racial groups in its second understanding, but races are ontologically empty social constructs. It is recognized that the processes of race production are relational. For one racial group to exist, another must be produced, since it does not exist as a single whole.

For its part, "racialism" consists, according to Moore (1984) [27], in the dislike, rejection, and inferiorizing that some members of a racial group feel with another group. This concept involves perceiving human beings as distinguishable according to racial categories. Once these concepts are understood and differentiated, it can be said that racism is not only a way of giving meaning to sociodiversity, as racialism does, but also of positioning them in order. Racism implies a categorization based on the assumption of races' existence, introducing the idea of inequality between them. According to Campos (2012, p. 10) [26]:

> Any racialization process does not necessarily lead to the implementation of racist logic or practices, and every racialism does not necessarily result in a hierarchy of categories. At the same time, racism should not be perceived as an inevitable consequence of racialization or racialism. Racism is only a very particular derivation produced by the inclusion of an arbitrary principle of hierarchies in a previously defined distinction between human groups.

Racism, for Fanón (2010) [28], is a global hierarchy of superiority and inferiority that has been politically supported and reproduced as a structure of domination for many centuries by the "Western-centric" system [29]. The people at the top of the pyramid are socially recognized as human beings with access to their rights, while those at the bottom find their humanity and rights questioned [28].

For its part, more recent research refers to two types of racism: ancient racism and modern racism, since, like any social construction, as societies have advanced, the concept and its use has changed [30]. According to McConahay (1986) [31], ancient racism involves a series of aggressive stereotypes about intelligence, workability, and acceptance of open discrimination, while modern racism is more subtle and indirect, as well as accepted by society [30]. According to Taguieff (1991) [32], the core elements of racism considered to be ancient are: (1) the biological doctrine, which consists of the biologization of social categories, identities, and collective differences, and (2) inequality among persons, which implies the superiority of some races and the dependence of others.

Sear and Kinder (1970) [33] began to discuss modern racism when it was thought that racism was disappearing, although nothing could be further from the truth. Racism was being 'modified' to fit the new values, orders, and dynamics of modern society. In 1972, 95% of Americans thought that their intelligence was the same as that of African Americans, claiming that there was no difference between them and that, therefore, they were not racist despite questioning this thought [34]. According to Taguieff (1991) [32], there are two mutations in the new racism: the shift from race to culture and the shift from inequality to difference. Pettigrew (1989) [34] explain that the attitudes of modern

racism are not exclusively American [35,36], but they also compete with modern racism in Europe. The characteristics of this modern racism are:

- They appear to be against discrimination, although, in practice, they resist initiatives to correct it.
- Feelings of fear and threat based on the group, considering that the State better treats minorities.
- Blaming the victim who is at a low social level, thus denying the existence of racism—for example, denying the scarcity of opportunities and over-exalting the scarcity of efforts. This point leads to two specific types of behavior: the acceptance of new norms without complete internalization and the emergence of "indirect micro-aggressions" and avoidance.

2.3.2. Islamophobia

As a consequence of the racism towards people who profess Islam, the term "Islamophobia" is beginning to be used, which, according to Bourekba (2018) [21], is a phenomenon distinguished by displays of hatred and hostility practicing acts of discrimination, violence, or exclusion towards people or institutions based on their belonging to and professing Islam.

The term "Islamophobia" is making its way into Western societies without an agreed definition [37]. In fact, during the last years, the term islamophobia has been discussed, although it has existed as a linguistic construct for about 100 years [38], appearing in literary works of the beginning of the 20th century where the French colonies are mentioned, and the Muslims are placed as the main enemies of Christianity and the Europeans [39]. However, its use has been consolidated, especially after the terrorist attacks of 2001 in New York [37].

It was not until 2004 that the Council of Europe [40] in the conference of Islamophobia and its consequences on young people advanced a definition of Islamophobia as "fear or prejudice towards Islam, Muslims, and everything related to them. Whether it takes the form of daily manifestations of racism and discrimination or other more violent forms, Islamophobia constitutes a violation of human rights and a threat to social cohesion".

This situation, beyond the social attitude itself against people who profess the Muslim religion and culture, generates "the image of the enemy", i.e., a belief of certain groups that their security and values are threatened by another group, leading to the possibility of violence and destruction [41].

In the social sciences, we find concrete manifestations of Islamophobia, for example, in the works of Karl Marx and Max Weber, as Sukidi suggests (2006) [42]. These manifestations of Marx and Weber show that Muslims are fatalistic and irrational people, so no severe knowledge can come from them [42]. Weber and Marx's views produce an epistemic Islamophobia in which Muslims are incapable of producing science, even though historical evidence has shown the influence of scientific advances in the Arab world on modern science and Western philosophy [43,44]. According to Conway (1997) [45], the attitudes that encourage Islamophobia are: (1) The interpretation of Islam as a monolithic, static, anti-change block; (2) The consideration of Islam as inferior to Western culture and religion; and (3) The view that all Islam is violent, aggressive, and supports terrorism.

According to Bourekba (2018) [21], by 1990, 10% of Spaniards rejected Muslims, based on information from the European Values Study (1990). In 2006, this proportion increased to 64% [46]. Currently, an increase of 467.35% in Islamophobia has been certified between 2014 and 106.12% between 2015 and 2016 [47] (Figure 1).

According to Geisser (2003) [48], in *La Nouvelle Islamophobie*, there are two types of islamophobia. The first is that which is rooted in the colonial context and significantly linked to institutional treatment. The second is a "new Islamophobia", which consists of both historical and contemporary components that result in a racist discourse towards Islam.

Within Islamophobia, we can find another term, the "anti-Muslimism" [48], which is an Islamophobia applied beyond the outside since it positions itself against an 'enemy' that is also internal. This occurs in countries where a minority Muslim population is increasing due to migration (e.g., Belgium, Spain, Denmark, France, or Sweden). According to Vakil (2009) [49], the term Islamophobia is accepted by the international community. However, in the U.K., it has been debated on multiple occasions, generating

minor and vital questions about the term, which are outside the scope of this document, but it is crucial to a better understanding specified the differences. This means that, according to the author above, "Islamophobia" would be fear of Islam as a possible external threat to our culture, while "anti-Muslimism" is the rejection of Islam in our territory.

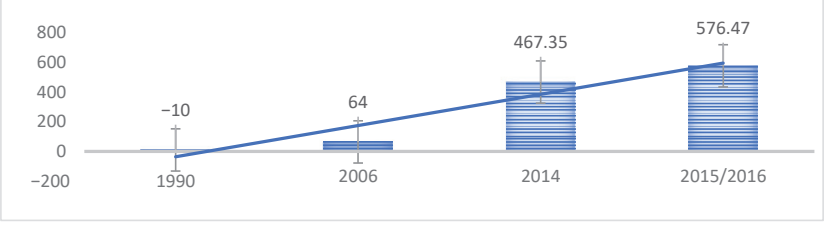

Figure 1. Evolution of the rejection of Muslims in Spain. Source: Own elaboration from Bourekba (2018, p. 19) [21].

Following the attack of 11 September 2001, an international offensive known as the 'war on terror' was launched, which was pointed out by many authors as the new beginning of the institutionalization of Islamophobia [38,50]. According to Poole et al., (2020) [51], in 2016, when the Belgium attacks were perpetrated, this was reinforced and gave rise to the hashtag #StopIslam.

In the specific case of Spain, the Agreement to strengthen unity in defense of freedoms and the fight against terrorism (cuerdo para afianzar la unidadendefensa de las libertades y en la lucha contra el terrorismo), officially known as the 'anti-jihadist pact', was publicly announced on 2 February 2015. This pact demonstrates how legislation is drafted and applied according to different logics. In a silent way, and justified by the security tools, an institutional Islamophobia based on standardized and legally legitimized suspicion has been established. A suspicion that extends to the entirety of a diverse group of people conceived as a unitary collective because of its "potential propensity for radicalization" [1] (p. 26), with radicalization being understood in this context as "the path of a Muslim person who gradually becomes fanatical, who perceives the world only based on his or her exclusive faith and who ends up being a supporter of armed or terrorist action" (p. 21) [52].

Violent radicalization is assumed to be one of the main risks to national security. However, in the process of social generalization and discursive minimization, Muslims are constructed, even by acts of government, as the new enemy of democracies by the political authorities in power (p. 24) [52].

Some facts carried out by the powers-that-be to prevent this violent radicalization (for example, closing down Muslim cemeteries and banning the wearing of the veil) show how Islamic religiosity's invisibility is promoted in public space. Thus, the Muslim citizen who does not hide his religious tendency in the public space will arouse more considerable suspicion and try to acculturate and 'domesticate'. These attempts at domestication can be considered forms of institutional Islamophobia. Other cases of instrumental Islamophobia include pre-trial detentions that cannot prove crimes and how such procedures are carried out [1].

This concept of institutional Islamophobia for Said (1990) [53] is nothing more than a reproduction of the fanaticism with which, from a western conception, Muslim Arabs representing the local imaginary have been constructed when the condition of Muslims is evoked.

Islamophobia has also become more prominent on social media [54] through tools such as hate speech, disinformation, and fake news [55], along with Islamophobia' myths' that Islam is again the modern values [56]. Islamophobia on social media is defined by Vidgen and Yasseri (2020) [57] as "content which explicitly expresses negativity against Muslims" (p. 69). Islamophobic discourse online has also increased due to the online world's characteristics like viral, comments, and share [50]. We can observe some hashtag against Islam in social media such as #StopIslam, #StopislamizationofEurope, #IslamTerrorist.

As a result of Islamophobia, we find social exclusion, which is the process that prevents the satisfaction of people's basic needs and their participation in society, as well as the lack of protection of their fundamental rights, so they are exposed to inequality, discrimination, and non-freedom of religion or expression, increasing the likelihood of disorder, which causes a social imbalance [58]. As a form of protecting people who are stigmatized in social media, companies such as Unilever, Honda, and Coca-Cola have removed their advertising from social media (Facebook) from 1 July 2020, with the hashtag #StopHateforProfit. The main aim is to handle hate speech and misinformation.

2.3.3. Invisibility

According to Bastidas and Torrealba (2014) [22], invisibility is defined as the cultural processes carried out by a hegemonic group to suppress a minority group's will to oppress its identity and limit resistance to domination, as well as to maintain socio-cultural control over it. In the same spirit, Fernández Ortiz (1987) [58] explains that invisibility is intended to undermine underdeveloped countries' cultures, since they cannot compete with the most powerful civilizations' cultural industries.

The term "invisibility" refers to a social group that has been neglected and discriminated against by the power elites. Invisibility is related to discrimination against minorities and social vulnerability. As we have seen ut supra, discrimination against minorities stems from the way reality is constructed, since there is a "we" and "others" in it, and when the "others threaten the hegemonic group", they respond by closing in on themselves and excluding the different one [37]. On the other hand, social vulnerability is seen as the suppression of people's rights. In this sense, invisibility is linked to the following theoretical models, according to Bastidas and Torrealba (2014) [22]:

- Marxism: especially with the concept of alienation through which human beings feel isolated or alienated from the nature to which they belong and even dominated. Invisibility is linked to this theory when people belonging to a minority group accept discrimination as something natural.
- Critical theory of the Frankfurt school: it is established that through critical analysis, the human being can free himself from oppression. According to critical theorists, every human being has a creative potential that helps him to overcome. The relationship with the concept of invisibility is that the affected person can become aware of it and cover it through the actions, turning it into a process of visibility.
- Symbolic interactionism: this theory is based on understanding the ability to think as a change process, resulting from the interaction between the person and the social environment [37]. Within this theory, it is accepted the approach of Erving Goffman (1970) [17] on the identity of the 'I', which holds that one acts socially following the form in which it is thought to be accepted.
- Turner's self-categorization (1987): maintains that people do not exercise as individual beings, but as social beings who extract part of their identity from the environments they belong to. The connection between this theory and the invisibility process is that discriminated groups try to hide their most stereotyped traits, weakening their cultural identity.
- Theory of Communicative Action [59]: according to this theory, every human act is supported by a communicative action in which three types of scenarios are found: (1) the objective world (reality), (2) the social world (norms), and (3) the subjective world (experiences). These three scenarios become obstacles for discriminated groups and connect this theory with the process of invisibility, since these groups do not manage to thematize an aspect of reality (objective world) because they challenge the social world governed by the norm and controlled by the dominant elite.
- Theory of State Formation [60]: It is argued that the State is established through social fractures, resulting from the tension between center/periphery, urban/rural, secular/religious, and industrial-employers/employees, to the point of invisibility of non-dominant groups.

The non-image, the non-personification, and the absence of any identity mark are one of the stratagems of dehumanization adopted by the social media par excellence. As a counterweight to this

invisibility, Muslims have demonstrations, such as the protest held in Barcelona in 2017 'not in our name', showing their express rejection of terrorism.

Social media create 'otherness' by giving more coverage to terrorist acts in Western countries than in Islamic nations, building the reality that Muslims are an internal threat, and making invisible the deaths and terrorist attacks that occur in the very Arab societies where the vast majority profess Islam, who are also victims [61]. Bauman (2006, p. 87) [62] also addressed this problem by stating that the invisibility of these deaths is an "unavoidable side effect of the construction of order".

From the point of view of communication, as a measure to make minorities visible, media education encourages critical thinking and as a measure to detect the underlying contents of ideological messages [63]. People have had a little learning experience about social media and digital competence, making the citizen what Romero-Rodriguez et al., (2019, p. 22) [63] considers to be an "analphanaut":

> The analphanaut is characterized as an individual who dominates digital competencies, and they are part of their information consumption habits. However, they lack info diets and information filtering capacity in a dual way. Firstly, they receive more content than they can process cognitively, thus emerging the characteristics of informational oversaturation, infoxication, infobesity, and data smog. This situation can be identified by the number of activities they carry out in parallel through multitasking navigation, which has a direct impact on their ability to pay attention to the activities carried out in parallel online vs. offline, but also by the activities they carry out on the fourth screens during their browsing.

Another possible action that could be considered to avoid the Muslim people's symbolic oppression should be clarifying the difference between Arab culture, the Muslim religion, and Islam. Their confusion makes it difficult to see the dehumanization taking place over them. In the specific case of discrimination, the image that the social media have spread and publicized regarding Muslim cultures has been sufficiently negative for a stereotype linked to violence and the absence of ethical and moral values to be in force to this day, and a significant extent worldwide.

3. Materials and Methods

3.1. Sample

This study examines the images and texts published in Instagram posts under the hashtag #Stopislam. The sample consists of 474 posts published between 1 January and 31 July 2020, on Instagram, which has been, according to Statista (2020) [12], the social network with the highest increase in users during the quarantine caused by the Covid-19 pandemic. Although this hashtag started to be viral in 2017, it has continued to be active and reaching more people so far. The number of posts under the hashtag #StopIslam is 17.3k. However, from 1 January to 31 July 2020, there are 474 posts (effective sample) (Table 1), which will be analyzed.

Table 1. Number of posts per month (sample).

Month	*f*
January	51
February	64
Mach	41
April	49
May	57
June	105
July	107

This study analyzes how Instagram is used as a means of oppression to devalue the Muslim collective through the hashtag #Stopislam. The research questions in this study are: RQ1: How Instagram

foment Islamophobic hate? RQ2: How is Instagram used to demonize Muslims? RQ3: Which are the social consequences of demonization and hate speech promotes through the hashtag?

It should be noted that this research is a case study, so the research questions are analyzed through the #StopIslam hashtag. Besides, as a clarification of Research Question 3 (RQ3), it is important to emphasize that we are studying whether the promotion of the consequences of demonization mentioned by Putri et al., (2020) [23] is observed through the #StopIslam hashtag, not the effect on society of the analyzed posts.

It must be expressed that one of the difficulties presented in this research has been the language of each of the publications. This problem has been solved thanks to the Instagram tool "see translation" and the use of Google Translate for some images that contained text. This has allowed a complete and comprehensive analysis to develop the conclusions.

3.2. Instruments

To carry out this study and answer the questions set out above, empirical research with a mixed methodology is being carried out. Firstly, a qualitative analysis is carried out using as the main instrument of analysis the technique of data collection known as "five walls of Islamophobic hate" (Table 2), validated by Imran Awan, from the University of Birmingham, in the research entitled *Islamophobia online inside Facebook's walls of hate*[1] [64] and adapted to the social media Instagram to carry out this research. The adaptation has not required significant modifications, as the primary tool was developed by the Online Hate Centre (2013) for the publication "Islamophobia on the Internet" [65] and adapted to Facebook by Imran Awan. This justifies that the tool can be extrapolated to all the platforms that the network offers, and therefore to Instagram. This analysis tool comprises five codes that comprehensively assess Islamophobia and have been used in other recent research [66].

Table 2. Five walls of Islamophobic hate.

Instagram Walls of Hate	Types of Engagement
Muslims are Terrorist	Representation of Muslims in social media as aggressive and terrorists.
	No difference is made between people who practice Islam and terrorists.
Muslims as Rapists	Representation of Muslim people as serial rapists and a danger to women.
Muslim women are a security threat	Because of wearing the hijab, Muslim women are represented as a threat to national security.
A war between Muslims	The promotion of Islamophobia by showing Muslims as war subjects serve as a tool for the extreme right to promote patriotism.
Muslims should be deported	The idea that an invasion is taking place is used to create campaigns against Islamic law, promoting that they should be expelled because they put Western identities at risk.

Source: [49].

To manage and analyze the qualitative data, we have used the qualitative analysis software (QDA) Atlas.ti, which has allowed us to code each publication. This software facilitates the qualitative analysis of unstructured or semi-structured data that helps identify patterns and meanings. Secondly, the IBM-SPSS v. 25 program has been used to perform the statistical analysis of the data obtained during the qualitative study, thus providing a data set in a structured way.

Lastly, an analysis of the existing theoretical concepts is also carried out by conducting an in-depth exploration of the most relevant databases; in this case, the Web of Science (WoS) and Scopus. The development of this has been structured in two phases:

[1] Available in: http://doi.org/10.5281/zenodo.58517.

1. In Scopus, the search criteria "demonization" with the Boolean algorithm AND intersection with "social media" was used. For the search refinement, a selection of emerging documents from 2010–2019 was chosen, from the Social Sciences area, document type "article", and source type "journals". Before the first screening, 79 documents emerged, which, after refinement, became 34.
2. In the Web of Science (WoS) case, the same search criteria were used, with 83 documents appearing in the first filtering. For the refinement of the search, the period 2010–2019 was selected, only in the thematic area of the communication, document type "article", obtaining 57 documents from this screening. A review of the literature and grounded theory was carried out with which the same epistemological, ontological, and theoretical forms would be correlated. The selection criteria (or screening criteria) for the documentary analysis were the following:

    - Thematic connection: 79 documents were analyzed in Scopus and 83 in WoS, refining only those related to the study object. After this screening, 34 documents were selected in Scopus and 57 in WoS.
    - The novelty of the contribution: The number of emerging citations in WoS and Scopus, within the period 2010–2019, were considered, emphasizing the most recent ones.
    - By the most cited: The most cited works were considered. A total of 91 documents emerge between the two interfaces after the screening, of which only those with more than 20 citations were taken into account.

4. Results

In the period analyzed, corresponding to the interval between 1 January and 31 July 2020, the hashtag #StopIslam presents a total of 474 publications. These represent the definitive sample analyzed and from which the results presented below are extracted. The most frequent Islamophobic behaviors are "A war between Muslims," reaching the highest percentage every month between 55.6% and 73.5%, and "Muslims are terrorists" with a percentage between 31.4% and 7.5% in second place. From the total of the selected sample, a total of 557 pop-up codes are extracted, distributed according to Table 3.

Table 3. Variable frequency results.

Variables	January	February	March	April	May	June	July
Muslims are Terrorists	16.7%	7.5%	12.2%	31.4%	16.7%	18.3%	18.2%
Muslims as Rapists	1.4%	5.0%	2%	2%	16.7%	7.6%	8.3%
Muslim women are a security threat	2.8%	0%	0%	3.9%	1.7%	0%	0%
A war between Muslims	55.6%	63.7%	73.5%	58.8%	60%	60.3%	68.6%
Muslims should be deported	23.6%	23.8%	12.2%	3.9%	5%	13.7%	5%

The months of June and July are the ones with the highest number of publications (see Table 1). According to the analysis made, this is because, on 25 May, the murder of George Floyd took place. As a result, the number of publications doubled, increasing the gap of other discursive quality, that is, between "us" and "them".

4.1. A War between Muslims

The present code represents 62.92% of the sample, with 351 codes out of 557. As a consequence, it can be seen that most of the publications are political, promoting patriotism, and positioning Muslims as a threat to European stability. People who practice Islam are stereotyped as monolithic, increasing social polarization, widening the gap between "us" and "them" and spreading and promoting Islam's hatred.

Most of this nature's publications belong to Dutch accounts supporting the political party Partij voor de Vrijheid (PVV) and Italian users (and sockpuppets) against migratory movements. This code is also associated with some specific social moments, such as, for example, in March, when Ankara

(Turkey) decided to open the borders to Europe for refugees. Following this decision, a mobilization against the migrant population's entry was detected under the hashtag #StopIslam, relating the refugees directly to Islam and positioning them as a threat to European culture.

On the other hand, the months of June and July see the highest number of publications (105 and 107) and encodings (78 and 82). This is due to the social networking movement of #BlackLivesMatter and its counter-narrative #WhiteLivesMatter, which associates people of color with Islam's practice (see Figure 2). This association reflects the misinformation and ignorance of the population about Islam's meaning, reflecting the unfamiliarity and impossibility of understanding "others".

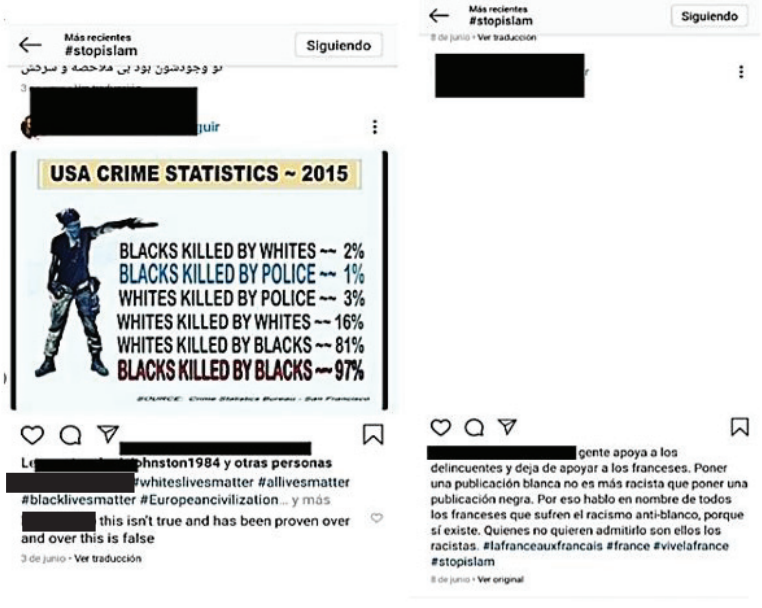

Figure 2. Examples from the category *A war between Muslims.* Caption: People support criminals and stop supporting the French. Putting a white post is no more racist than putting a black post. That is why I speak on behalf of all French people who suffer from anti-white racism, because it does exist. Those who don't want to admit it are the racists.

After carrying out this first part of the analysis, with the justification of defending European culture, we observe two accounts that are mainly dedicated to publishing unsubstantiated content that incites hatred towards Muslim people. The first is @deutscher.zusammenthalt, which has 8403 followers and defines itself as a media, and the second @waarheidsteller02 with 1616 followers. Both accounts publish memes, fake news, and spam under the analyzed hashtag to fill Instagram with hate messages. After identifying these accounts' type of content, they have been reported to the platform claiming to promote Islamophobia, using an analogy of war. In response to this complaint, Instagram has claimed to have reviewed the accounts and has not detected any incidents. Other accounts reported to have generated hate speech and false news reporting include @stop_islamizacion, @stop.islam, and @_stop.islam (Figure 3). Although Instagram does not detect it as illegal material because it does not promote actions against the law, it does observe discursive attacks on Muslims through the publication of messages that promote false ideas about Islam (e.g., Figure 4). This, according to some authors such as Putri et al., (2020) [23], can be considered as hate speech, so the Instagram policy should be reviewed. Poole (2020) [52] also finds this very concerning, because it illustrates how social media platforms' strategies can create conditions that lend themselves not just to the actions but ideological commitments of right-wing populist groups.

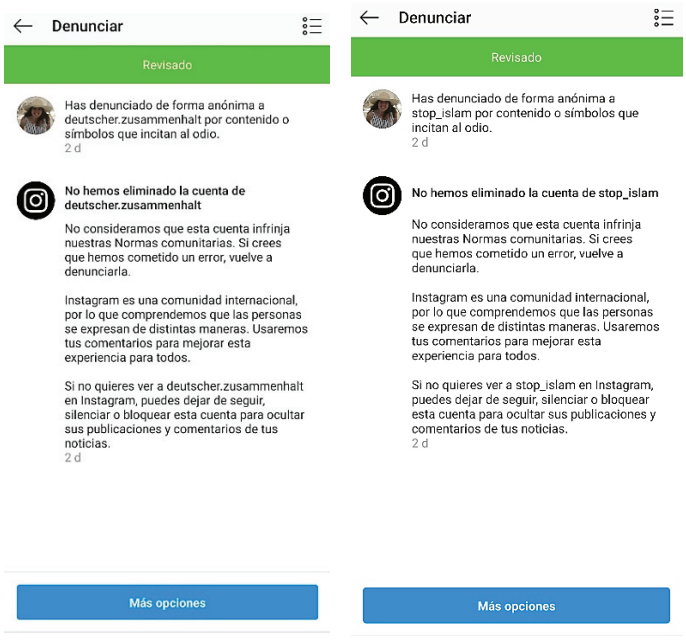

Figure 3. Examples of Instagram's institutional response to Islamophobia complaints. Caption: We do not consider this account to violate our community standards. If you think we have made a mistake, report it again. Instagram is an international community so we understand that people express themselves in different ways. We will use your feedback to improve this experience for everyone. If you do not want to see the content of xxxx you can unfollow, mute or block this account to hide its publications and news comments.

4.2. Muslims Are Terrorists

Secondly, 17.28% of the sample with a total of 96 codifications, publications with the hashtag #StopIslam that are detected relate religion with terrorism presented to Muslim people as unable to adapt to new realities and to promote in public opinion the idea that people who practice Islam are aggressive and threatening to democratic societies, justifying in this idea discrimination and hatred. The most abundant publications are memes in which Muslim people are demonized and stigmatized and are associated with terrorism through the use of guns, cathanas, and bombs, making reality invisible and stereotyping Islam's practice, laying the foundation for a confrontation through social terror and altering the perception of reality. In contrast, according to the International Observatory of Studies on Terrorism [67], Europe only represents 0.08% of jihadist activity in the world. This discourse is not associated with any specific date. It is a constant discourse that places Muslims as threats and allies to terrorism (Figure 4).

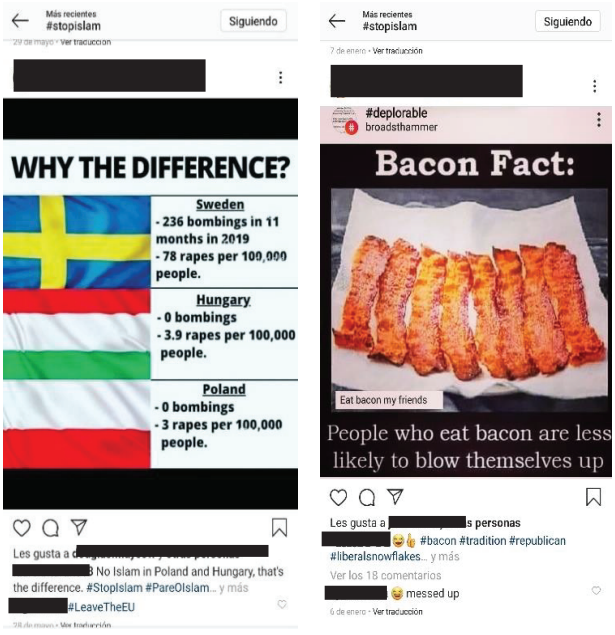

Figure 4. Examples from the category *Muslims are terrorist.*

4.3. Muslims Should Be Deported and Muslims as Rapists

The dissemination of publications with the idea that Muslims invade Europe and should be expelled represents 12.44% of publications with a total of 70 codes. Messages of this kind help to establish in public opinion the concept that Muslims are different, separate, independent, and do not share values with other cultures. According to the Migration Report (2015) [68], the number of Muslims living is thought to be seven times higher than the actual number in most countries. Therefore, Europe's Islamization and the Muslim invasion are a discourse promoted by certain groups far from reality, since European Muslims represent a minority population.

On the other hand, in fourth place, with 35 codes and with a representation of the sample of 7.60%, some publications emphasize the abuse of Muslims towards girls and women, based on unverified images, false news, and messages of hate with the intention of promoting the idea of #StopIslam through social networks. It is identified that followers of extreme right-wing political parties create profiles that share this type of disinformation during the specific campaigns, and then they are no longer active. It shows a clear intention to alter the algorithms to manipulate the information and get new followers.

Thus, some accounts are detected under the hashtag #StopIslam intending to do counter-narrative and fill social networks with positive messages under a negative label, although they are not enough to counteract the gap. Some of these accounts are @Jhditmwh with 259 followers and over 1500 posts and @quran_mylife2 with 56 followers and 52 posts (Figure 5).

4.4. Muslim Women Are a Security Threat

Finally, only 1.2% of the 557 emerging codes belong to the relationship between women and terrorism. This is because most of the posts that have been published under the analyzed hashtag are political and have significant interests in promoting the polarization of societies and the demonization of Muslim people by supporting the Muslim-terrorist binomial. Publications that refer to women are often more related to women's objectification and their dress than to the threat to national security (Figure 6).

Figure 5. Examples from the category Muslims should be deported and Muslims as rapists. Caption: What is the name of a man who with 50 years has as a partner a girl of 9? 1.8 million people call him the prophet Muhammad.

Figure 6. Examples from the category *Muslim women are a security threat*.

5. Discussion and Conclusions

The process of demonization through the #StopIslam hashtag is mainly carried out by portraying Muslims as executors of criminal acts, such as in the case of Fitna, a documentary launched in 2008 by Duch MP [69], in addition to showing them as disrespectful people who have difficulties in integrating. However, as one of the limitations of this study, it is noteworthy that the total proportion of demonization on Instagram is unknown, as this analysis is a case study. Although many people may avoid the messages sent with the hashtag due to their cultural level, interest in Islam, or sympathy with Muslims, as can be seen in the case of Fitna mentioned above, in which the authors show how the population turned against this demonizing attitude identifying terrorism with Islam and the people who practice this religion is the most severe Islamophobia [70]. According to a study carried out by Alanazi (2015, p. 588) [70] on the Spanish newspaper *El País*, 90% of the sources used to talk about Islam are Western, and only 4% of the Islamic terms appear in positive contexts. Most references are to Islamic terrorism, Muslim women, conflict, the incompatibility of Islam and democracy, Muslim resentment of the West, and the difficulty of integration [70], as we can also see in this research. In this regard and according to Putri et al., (2020) [23], some of the malpractices that encourage the demonization of Islam are sensational and exaggerated headlines, excessive use of false science, i.e., use of unreasonable statistical figures, misuse of Arabic vocabulary and concepts, disinformation, through the use of few sources and no verification of facts, excessive use of generalizations, a sexist portrayal of Muslims and instrumentalization of Islam, and use of references to Islam as a military ideology.

5.1. RQ1: How Does Instagram Foment the Islamophobic Hate?

One of the main conclusions of the present study is the evidence of how the social network Instagram, belonging to Facebook, serves as a platform to promote hate and Islamophobia, allowing the expansion of anti-democratic messages through hashtag #Stopislam. After reporting different accounts with Islamophobic content (Figure 3), it was found that the community standards policies followed by Instagram consider hate speech as an element or content that does not incite enmity. This behavior allowed by Instagram causes the gap between "us" and "them" to widen, polarizing societies, contributing to certain political parties gaining support and causing social conflict.

Therefore, it can be said that the combination of demonization and social media oppresses non-dominant cultures, limiting their freedom of expression, preventing the satisfaction of the basic needs of these people, and indirectly forcing them to pretend to be. Prejudices and stereotypes about the Arab world continue to expand and spread in the digital environment so that, in recent years, social alarm has increased over the ability of these media to increase and propagate hate speech [71]. The current media ecosystem offers social intercommunication, which has affected how societies are built, social relations, and the concept of "us" and "them".

On the other hand, this analysis detects the internalization of hate speech to such an extent that social platforms like Instagram accept it in their behavior policies. Moreover, a large number of false news, messages full of misinformation, and repulsion towards Muslims are detected under the hashtag #StopIslam. The main concern about these messages' permissiveness is the indirect support to extremist groups that move their discourse to the offline environment and increase Islamophobia and hate crimes.

Instagram serves as a platform to promote hatred of Islam by those who use the hashtag to post islamophobic messages and stereotyping and denigration of people who practice Islam, as can be seen in the examples given in the results. According to Ruiz et al., (2010, p. 38) [72], "Digital conversations contain anti-democratic, racist, xenophobic and anti-human rights comments, despite the express prohibition to disseminate them". In this sense, the hate mentioned above speeches is formalized through discursive practices, using pragmatic strategies and expressions of hate and threat, which are considered symbolic and discursive violence. Therefore, one of the behaviors that can be observed is that there is symbolic oppression on Instagram, attacking the oppressed invisibly, reproducing a series of categorical denigrations of Islam as a religion, community, and social movement, strengthening the

relationship between dominant and dominated and dehumanizing Muslim people. This is one of the behaviors found in this platform, demonstrated in the analyzed case.

5.2. RQ2: How Is Instagram Used to Demonize Muslims?

The hashtag #StopIslam promotes racism, Islamophobia, and invisibility through hate speech, agenda-setting, and framing the information. It can be argued that Instagram is a network that uses a group of people interested in demonizing Muslim people and meet under this hashtag. As we have observed in the documentary analysis results referred to ut supra, most of the posts related to Muslims are focused on political issues and terrorism, causing the sensation of threat and, therefore, fomenting hatred towards Muslims. Behind this information hides what we have seen throughout the analysis as 'modern racism', since it is relevant and contrasting news but hides subtle elements against the Muslim collective, which are based on the introduction of public opinion elements that will be accepted by society and will cause their deterioration. Besides, with social media and the algorithms behind them, this hate phenomenon is rising, causing more and more hate crimes in society.

The primary way to demonize Muslim people through this hashtag on Instagram is composed of three pillars, (i) through the political messages of extreme right-wing groups such as PVV, (ii) reinforcing and expanding the Muslim-terrorist binomial, and (iii) inciting fear of being invaded by a culture that does not fit with the European. Although the present study shows that most messages are related to the category *a war between Muslims*, according to the conclusive results of the Observatory on Islamophobia in the Media [Observatorio de Islamofobia en los Medios] extracted from the research An indisputable reality: Islamophobia in the media (Una realidad incontestable: la Islamophobia en los medios) (2018) [73], 90% of the news on Islam/Muslims refers to negative aspects, and the issue of terrorism dominates the reporting on Islam: out of 1659 articles examined, 1150 deal with terrorism.

On the other hand, incorrect terminology to describe Islamic aspects is detected, as seen through #StopIslam in publications about George Floyd. Are all black people Muslim? Finally, it shows how to simplify the context of the Arab world and personify Islam, showing it as if it were one person, delimiting Islam's diversity and respecting each of the followers of this religion [73].

5.3. RQ3: Which Are the Social Consequences of Demonization and Hate Speech?

After carrying out this analysis, we could extract as a novelty the reflection that the combination of social media with elements that have serious consequences such as demonization brings with its new consequences and phenomena still to be developed. This is because people abuse this and send offensive comments that could negatively affect the people [23]. Some of these consequences that we can name are changes in relating to the 'other', the emergence of new concepts such as the "mononational" that would be the identification and support of a single nationality, discrediting the rest, and, finally, total deglobalization.

As can be seen, these are consequences that would violate the human rights of people who belong to the minority, so responsible journalism is proposed as a solution to oppression and the promotion of social exclusion, in which people are not presented as categories, and sensationalist headlines are avoided, and more is reported than is misinformed. According to De Pablos, 2011 [74] this would help the information be free of impurities and relate important facts and social issues. Another relevant aspect to stopping this phenomenon is media education, through which the population is helped to identify the messages of hidden hatred and reflect on what is read, and to identify false news. The use of media literacy to prevent the spread of hate and decontextualized ideas in public opinion is fundamental, and a tremendous digital gap is detected that influences the way of understanding the social networks of each one. Therefore, it is proposed to carry out a program of education and communication both in the classroom and at a general level to counteract hate speech damage and teach the current denunciation of hate speech.

For further research, it is proposed to analyze the connection between the hashtags #StopIslam and #BlackLivesMatter to better understand African-Americans and Islam's relationship.

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Digital Literacy and Higher Education during COVID-19 Lockdown: Spain, Italy, and Ecuador

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Abstract: Digital literacy constitutes the basis for citizenship in order to be effective and efficient in the 21st Century in professional and personal lives. The set of skills and competences integrating digital literacy are expected to be guaranteed in higher education. During the lockdown globally imposed for the COVID-19 pandemic, educational systems worldwide had to face many disruptive changes. The aim of this research is to present a comparative study of three countries' higher education institutions (Spain, Italy, and Ecuador), analyzing how they have faced the global lockdown situation, focusing on the development of digital literacy. The methodological approach followed in this study was quantitative with an exploratory-correlational scope using a questionnaire designed ad hoc and applied in a sample of 376 students. Results point the necessity of enhancing the main aspects such as the teacher's digital skills, sources for learning that may be adapted, communication between universities and students, and teaching methodologies that should be appropriate to the current context. Conclusions may suggest rethinking higher education learning and reinforcing main issues for this transformation, mainly: communication, teaching, and digital competences. Otherwise, digital literacy is not being guaranteed, which means higher education is not accomplishing one of its main objectives.

Keywords: digital literacy; COVID-19; generation Z; students; lockdown; higher education; communication

1. Introduction

The development of the "knowledge society" implies social transformation in which citizens need new skills and competencies. On the one hand, technological availability has motivated world-class universities to develop innovative programs and new ideas to accelerate and improve both teaching and learning [1]. On the other, as Jonas-Dwyer and Pospisil [2] (p. 195) observe, even if "the technological revolution has been a catalyst for change in universities", "research has shown that introducing new educational technologies alone does not improve teaching and learning outcomes" if they are not accompanied by specific training. Therefore, in a context of development and expansion of an increasingly digital society, training in competencies within the scope of digital literacy of higher education students should be essential, nonetheless, it is often viewed as something that "is often taken for granted" [3] (p. 95). In Poore's words, today, more than ever, we have the opportunity and the technologies to assist us in the human project of shaping, creating, authoring, and developing ourselves, however "we will not be able to achieve a liberating, collective intelligence until we can achieve a collective digital literacy" [4] (p. 34).

Aligning with Pérez-Tornero's holistic approach, understanding media literacy as a concept embracing all the fields and all the competences related to media, digital literacy is understood as

the "acquisition of the technical competence for using information and communication technologies, understood in a broad sense, in addition to the acquisition of the basic practical and intellectual capacities for individuals to completely develop themselves in the Information Society" [5] (p. 29). Digital literacy may be understood as an inter-related set of skills or competencies necessary for success in the digital age [6], developed and evolved in different dimensions address in models acknowledge by countries and governments [7].

Within the context of the COVID-19 crisis, this has become even more evident [8]. The World Health Organization (WHO) declared COVID-19 as a global public health emergency of international concern on 30th January 2020 as well as a pandemic on 11th March 2020 [9]. As of 6th April 2020, UNESCO reported that there have been 1,576,021,818 affected learners out of 91.3% total enrolled learners in 188 countries in all levels of learning. Exactly as in many other aspects of everyday life, COVID-19 had a serious impact on students, instructors, and educational organizations around the globe [10]: the pandemic caused schools, colleges, and universities across the globe to shut down their campuses [11] and quickly move conventional education to distance and virtual learning [12]. Current educational circumstances are so unique that some authors accurately propose to define this new situation "crisis learning". Due to this uniqueness and exceptionality of past and current circumstances, many studies are emerging on the impact of COVID-19 restriction measures in different educational levels [10,13] and different contexts [11,14,15]. Most of these studies focus either on specific countries [13] or on specific aspects, such as technical aspects of e-learning [10] or psychological impact [14] or communicative perspectives [16].

The only—by the time—global study, developed by Crawford and colleagues [12], analyzing twenty countries educational responses, concludes that the educational sector needs to unite to postulate a future where students can be supported digitally, without compromising academic quality and standards of the curriculum. The aim of this research is to present a comparative study of three countries' higher education institutions (Autonomous University of Barcelona in Spain; University of Torino in Italy; and Technical University of Machala in Ecuador) analyzing how they have faced the global lockdown situation, focusing on the development of digital literacy.

2. Generation Z and the "Digital Native" Debate

Although there is no absolute consensus about the precise boundaries of Generation Z, most literature [17–19] considers that it is composed of individuals born between the years 1996 and 2010. Their most important characteristic is that they are the first generation that has never known a world without the Internet. Their lives are molded by the Internet, which has been converted in a natural part of their lives. Prensky [20] defines this cohort as "digital natives", implying that having been exposed to these digital technologies has endowed this generation with specific and even unique characteristics that make its members completely different from those growing up in previous generations.

Teräs, Myllyla, and Teräs [21] consider that, having grown up with highly sophisticated media, they are "naturally" more Internet savvy than their forbearers, displaying "natural skills of digital native learners" (p. 1). Veen and Vrakking [22], in the same line, propose to call this generation *homo zappiens*, considering that this cohort have developed all the metacognitive skills necessary for enquiry-based learning, discovery-based learning, networked learning, experiential learning, collaborative learning, active learning, self-organization and self-regulation, problem solving, by themselves. According to this vision, Generation Z students currently attending school or university are, therefore, considered experts in understanding technology, socially open through the use of technology, fast and impatient, and interactive and resilient multi-taskers [23]. Some research suggests that Generation Zers' brains are structurally different to those of previous generations [18,24]: surrounded by complex visual imagery, the part of their brain responsible for visual ability is more developed, making them more reactive to "visual learning", but with a shortened attention span.

Accordingly, there is a growing agreement that there is "a gap between higher education and 21st century skills" [21] and that educational institutions should adapt their methodologies [24]. Both

the concept itself and the description of the so called "digital natives" have been criticized, lacking any empirical evidence or substantive characteristics. Kirschner and De Bruyckere [16], for example, harshly criticize this definition, comparing "digital natives" to Yeti-like creatures: a myth, someone that everyone talks about but that nobody has ever seen.

A study carried out by Romero, Guitert, Sangrá, and Bullen [25], comparing students of different ages, for example, found that older students (>30 years and thus born before 1984) who exhibited the characteristics attributed to digital natives more than their younger counterparts.

In their research, 58% of their students, older than 30 showed the characteristics of the so called "digital natives" more than their younger counterparts.

In terms of learning environment, a study from the University of Barcelona [26] concludes that the "digital native" label does not provide evidence of a better use of technology, rather that technology use is mainly influenced by the teaching model. Consequently, in a research on first-year undergraduate students at Hong Kong University, Kennedy and Fox [20] found that while students appear to use a large quantity and variety of technologies for "personal empowerment and entertainment", they do always appear digitally literate in using technology to support their learning. This is particularly evident when it comes to student use of technology as consumers of content rather than creators of content specifically for academic purposes" [27] (p. 76).

Adding to this, Shatto and Erwin [28] consider that Gen Z students' ability to obtain information from online sources seems impressive, but they lack the ability to critique the validity of the information and, are likely to get frustrated if answers are not clear immediately. Thus, keeping the attention of the student and developing higher order thinking skills are critical components of successful teaching. In other words, many students entering university today have a high level of exposure to digital technologies and media, but they do not seem prepared to cross the bridge between personal and academic use of technology. Therefore, as academic know-how is gained through formal education, so too must technological prowess be gained through structured learning experiences [28]. For this reason, it is vital that higher education institutions promote explicit and intentionally reasoned digital literacy strategies, that combine the optimization of the competencies that both students and teachers possess as users, with the generation of new competencies [29].

3. Digital Literacy

As previously mentioned, there is a growing agreement that there is "a gap between higher education and 21st century skills" [21] and that educational institutions should adapt their methodology [1], promoting explicit and intentionally reasoned digital literacy strategies, that combine the optimization of the competencies that both students and teachers possess as users, with the generation of new competencies [29].

Accordingly, even though digital literacy "has been one of those key concepts whose relevancy and weight as a key element for a digital citizenship have shifted from being recommended to essential" [7], the concept itself of digital literacy is not standardized, its scope is broad and has been researched from different fields. The most common approaches so far have been those of media studies, educational studies, computer science, information science, and librarianship [5].

Due to this, the understanding of this competence can be diverse. On the one hand, the different understanding of digital literacy responds to the interests and scope of each era of literacy [30]. Therefore, emerging at the end of the twentieth century with the spread of ICT (Information and Communications Technology), the term mainly referred to computer literacy, that is to say to technological skills, while with the growing of the "knowledge society", has highlighted that digital literacy should be understood as an "inter-related set of skills or competencies necessary for success in the digital age" [6]. In particular, the so-called critical approach has been growing, mainly with the spread of media literacy studies.

This approach highlights critical thinking as one of the fundamental aspects. Aligning with Pérez-Tornero's holistic approach, understanding media literacy as a concept embracing all the fields and all the competences related to media, we understand digital literacy as the "acquisition of the

technical competence for using information and communication technologies, understood in a broad sense, in addition to the acquisition of the basic practical and intellectual capacities for individuals to completely develop themselves in the Information Society" [5] (p. 30).

Within this framework it is important to recognize that, since there is no unifying definition of digital literacy, many models and implementation are possible [7]. Accordingly, we will examine our result within the respective reference framework.

Digital Literacy Development Models

The development of digital literacy in Europe is based in both Spain and Italy on the DigCompEdu reference framework [31] in which six dimensions are established that teachers must promote for the development of adequate digital literacy with a series of sub-dimensions as shown below:

1. Dimension 1. Professional engagement, integrating organizational communication, professional collaboration, reflective practice and digital continuous professional development.
2. Dimension 2. Digital Sources resources, including the following subdimensions: selecting, creating and modifying and managing, protecting and sharing
3. Dimension 3. Teaching and learning, teaching, guidance, collaborative learning, self-regulated learning.
4. Dimension 4. Assessment within assessment strategies, analyzing evidence, and feedback and planning.
5. Dimension 5. Empowering learners, embracing accessibility and inclusion, differentiation and personalization, and actively engaging learners.
6. Dimension 6. Facilitating learners' digital competence which includes five subdimensions: information and media literacy, communication, content creation, responsible use, and problem solving.

In the context of Ecuador, Digital Agenda 2017–2021 [32] establishes 5 dimensions for the promotion of digital literacy:

1. Dimension 1. Hardware, which includes two subdimensions: connectivity and equipment.
2. Dimension 2. Digital learning, including the following subdimensions: curriculum; learning methodologies, content and digital sources.
3. Dimension 3. Teachers development, long life learning, pre-service teachers' education and professionalization, developing digital competences.
4. Dimension 4. Communication and promotion focusing on visualization, engaging and empowering, and web content.
5. Dimension 5. Innovation related with developing new skills and competences for teachers and learners.

The establishment of reference frameworks for the development of digital literacy in both contexts is very similar, as can be seen in their description, and they are the fruit of a collective awareness of the need to develop a new literacy according to the context of society of the information. In addition, its international recognition has implied an effort in recent years, from organizations, institutions, and governments so that this change was being put into practice. The objective of the work presented here is to carry out a specific temporal approximation (during the quarantine time for COVID-19, March–April 2020) with a study of the perception of university students to verify whether during this period of global confinement has sought the development of dimensions that guarantee the acquisition of digital literacy. To ensure greater significance of the results, the study was applied to three countries: Spain, Italy, and Ecuador, with a high incidence of COVID-19.

4. Materials and Methods

From the study of the reference frameworks for digital literacy in the three contexts studied (Spain, Italy, and Ecuador), the study dimensions associated with the variables that would later be included in

the design of the questionnaire were designed, based on the DigCompEdu [31] and the Digital Agenda 2017–2020 [32]. Thus, the study dimensions were established as follows:

- Dimension 1 [D1]. Teacher's professional engagement and collaboration: it is related to professional engagement, the capability to integrate organizational communication, professional collaboration, and effective practice and development.
- Dimension 2 [D2]. Digital learning and sources: this dimension is meant to be a rethinking of conventional sources of learning, complementing the development of other dimensions. It includes the necessity for citizens to be aware of how to responsibly use, access, and manage digital content.
- Dimension 3 [D3]. Teaching and teachers guidance and skills: Learning strategies will definitely develop an appropriate digital literacy by designing, planning, and implanting in the different stages of learning digital tools and technologies.
- Dimension 4 [D4]. Supporting/empowering students: having in mind this is a dimension related to the development of digital literacy, it will ensure not only access to digital learning resources and activities but empowering learners and fostering their digital competences.

These dimensions conducted to the definition of several variables of study for the design of the questionnaire. The methodological approach followed in this study was quantitative with an exploratory-descriptive scope [33], using three independent socio demographical variables of study (gender, age, and country) and 20 dependent variables distributed for the analysis of each dimension as follows: [D1] Teacher's professional engagement and collaboration with four variables; [D2] Digital learning and sources including six variables; [D3] Teaching and teachers guidance and skills integrating five different variables; and [D4] Supporting/empowering students with five variables.

The dimensions and variables defined allow us to specify the purpose of the study, drawing the following research questions: [RQ1] During lockdown do teachers from the university show professional collaboration coordinating and addressing the situation? [RQ2] What kind of sources have teachers used during the lockdown? [RQ3] Did teachers use new learning methodologies to guarantee quality in teaching? [RQ4] What was the perception of students about their teacher's digital competences? [RQ5] Did students perceive negative aspects in the teaching lessons during lockdown? [RQ6] Did students feel their education was damaged because of this situation? [RQ7] Did students feel they had enough digital competence level to face the situation? In the findings of all research questions, the analysis and results will offer or not differences among countries.

Based on this research questions, the following objectives were addressed: (1) first, describe the situation in three countries studied, focusing on the four dimensions designed related to digital literacy, and, (2) secondly, find out if there were significant differences among the three groups studied.

In order to reach the second objective, the hypothesis established were as follows:

Null Hypothesis (H_0): There were no differences among countries in the research questions defined
Alternative Hypothesis (H_A): There were differences among countries in the research questions defined.

This descriptive research applied a comparative study between Spain, Italy, and Ecuador on the specific dimensions: consumption of devices and content during the global health crisis of COVID-19, during the months of March–May 2020. The methodological proposal was designed from an exploratory perspective and applied the survey instrument, which reached 2956 responses from 376 university students from Spain, Ecuador, and Italy. In total, the study collected 65,032 pieces of evidence from the three countries.

4.1. Sample

The invited sample, conceived as the set of elements of the population that are asked to participate in the investigation [17] corresponds to undergraduate students of Communication, Journalism, and Education. The study was composed of 376 students aged between 18 and 40 years old (M = 21.94; SD = 3.28). As shown in Table 1, the description of the sample was: in Spain, the participation represents

42.3% of the sample (N = 159), whose ages range from 18 to 29 years. The students from Italy were the 33.2% (N = 125), whose ages average between 18 and 24 years. In the case of Ecuador, 24.5% (N = 92), aged between 18 and 40 years.

Table 1. Description of the sample according to age, gender, and country.

		Spain N = 159 (42.3%)	**Italy N = 125 (33.2%)**	**Ecuador N = 92 (24.5%)**	**Total N = 376 (100%)**
Gender	Male	45 (28.3%)	11 (8.8%)	33 (35.86%)	89 (23.7)
	Female	114 (71.69%)	114 (91.2%)	59 (64.13%)	287 (76.3)
Age	18–22	141 (88.6%)	95 (76%)	60 (65.21%)	296 (78.72%)
	23–29	18 (11.32%)	30 (24%)	32 (34.78%)	80 (21.27%)

The research was based on intentional sampling in the selection of the three participating universities. In this type of sampling, the subjects subjected to analysis and study are chosen by the researcher to be part of the sample with a specific objective [17] as they are considered adequate or suitable for the investigation. Three universities from different socio-geographical settings were selected, which received a strong impact from COVID-19, generating significant numbers of affected and deceased in their territorial environment. In this regard, the institutions that made up the study were: Autonomous University of Barcelona (Spain) participating with students of the degree of Journalism; University of Torino (Italy), with the participation of students of the degree of Education, and Technical University of Machala (Ecuador) that participated in the study with students of the Communication degree.

4.2. Instrument and Procedure

The design of the instrument was carried out with the objective of describing the observed situation and exploratory analysis of the research questions raised in order to analyze the established dimensions and find if there were differences among the three groups studied (Spain, Italy, and Ecuador). In the first phase, the instrument was submitted to the judgment of experts, six in total, academics from the study area, two in each country, in order to establish clarity and relevance to the items. This first step discarded a total of 5 items for being redundant or imprecise and allowed six of them to be reformulated. For the analysis of the reliability of the instrument from the statistical point of view, Cronbach's Alpha was carried out for each dimension of the study, all values being above 0.70. The instrument was designed with Google Forms tool and, prior to its completion, each participant's permission was requested. It is important to note that before the data gathering, researchers assured the ethical issues in each university were addressed. None of the three universities involved required authorization from the ethics committee due the nature of the study, only the express participant's permission. The final instrument consisted of independent variables that collected sociodemographic information and of dependent variables, a total of thirty-one as can be read in Appendix A, Table A1. Dichotomous type questions were chosen because of the nature of information the researchers intended to gather. The dichotomous question format is used when the issue under consideration most likely is thought of in two possible values [18]. Statistical analysis of data was made with package SPSS, version 22, descriptive and inferential analysis was addressed. In order to check the equality of variances Levene's test was applied, which is proper for two or more groups, obtaining a p-value below 0.05 ($p < 0.05$). Results confirm there was no normality in the distribution of variables so non parametrical statistics were required in our study. The study was conducted in two steps in order to reach objectives designed in the four dimensions: firstly, with basic statistics (frequencies and chi-square test), and secondly, to determine the strengths of associations after chi-square, we observed Cramer's V, (the suitable measurement in nominal variables) in order to reject or accept null hypothesis, showing which groups are different or where the groups differ. Accordingly, Norris et al. [33] and the interpretation for effect size (ES) in Social Science in Cramer's V should be considered as follows: ES ≤ 0.2 weak; 0.2 < ES ≤ 0.6 moderate and ES > 0.6 strong.

5. Results

In order to establish a clear explanation of results, they are presented as the following in the dimensions designed, responding in each case to the research questions involved.

5.1. Dimension 1. Teacher's Professional Engagement and Collaboration

Results for the first dimension [D1] were addressed in two steps as previously explained. Firstly, basic statics such as frequencies and chi-square for significance where analyzed in order to extract differences among countries, as can be seen in Table 2. In this regard, students where asked in four dichotomous nominal variables.

Table 2. Differences among countries for D1 and basic statistics (N = 376).

	Spain (%)		Italy (%)		Ecuador (%)		*p*		
	Yes	No	Yes	No	Yes	No	S-I	I-E	S-E
D1.1 Have teachers been well coordinated among them during the lockdown?	13.83	86.16	31.2	68.8	82.6	17.39	0.000	0.000	0.000
D1.2. Have you felt you were not supported enough?	80.5	19.49	50.4	48.8	63.04	36.95	0.000	0.139	0.002
D1.3. Have you felt you were properly informed about your lessons and proceedings?	44.02	55.97	52.8	47.2	60.86	39.13	0.142	0.236	0.010
D1.4. Have you received contradictory information anytime?	64.77	35.22	72.8	27.2	40.21	59.78	0.149	0.000	0.000

$p < 0.005$.

In this dimension, the results answer to RQ1: During lockdown, do teachers from the university show professional collaboration coordinating and addressing the situation? Descriptive statistics for the first dimension show significant differences among countries, for D1.1. *Have teachers been well coordinated among them during the lockdown?* So, null hypothesis is rejected. Results show statistically significant differences among all countries studied confirmed by Cramer's *V*: Spain–Italy (S-I) (χ^2 (1) = 12.51, $p < 0.005$), Cramer's V = 0.210 which is weak but statistically significant (ES ≤ 0.2); Italy–Ecuador (I-E) (χ^2 (1) = 56.22, $p < 0.005$), Cramer's V = 0.509 moderate (0.2 < ES ≤ 0.6); and Spain–Ecuador (χ^2 (1) = 14.25, $p < 0.005$), Cramer's V = 0.679 strong (ES > 0.6). D1.2., *Have you felt you were not supported enough?* This item only shows statistically significant differences between Spain–Italy (χ^2 (2) = 29.25, $p < 0.005$), Cramer's V = 0.321 moderate (0.2 < ES ≤ 0.6). D1.3., *Have you felt you were properly informed about your lessons and proceedings?* There were no significant differences among countries ($p > 0.005$), which means that in this item, null hypothesis is accepted. About last item D1.4., *Have you received contradictory information anytime?* Countries that differed most were Italy–Ecuador (χ^2 (1) = 23.25, $p < 0.005$), Cramer's V = 0.327 and Spain–Ecuador (χ^2 (1) = 14.25, $p < 0.005$), Cramer's *V* = 0.238 which is moderate in both cases (0.2 < ES ≤ 0.6).

Focusing on percentages, as seen in Table 2, bigger differences arise in the first and second items. While Spanish and Italian students consider teachers were not well coordinated among them during the lockdown, 86.16 and 68.8 percent respectively, in Ecuador students, a percentage of 82.6 consider the opposite about their teachers. About item D1.2., *Have you felt you were not supported enough?* The highest level is for Spain, 80.5 percentage of students have felt that during the lockdown they were not supported enough from their teachers.

Differences are evident once more when asking students about their perception about the learning situation. The Spanish ones declare in a high average that this learning context assumes them a higher workload, obligating them to be more autonomous and losing contact with classmates. Among Italian students, these issues seem to be less relevant as confirmed in Figure 1, and Ecuadorian are like Spanish in this regard.

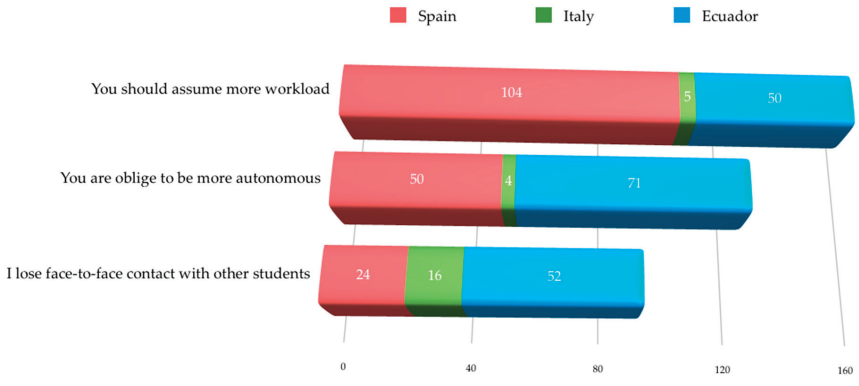

Figure 1. Student general perception about the learning situation during the lockdown among countries.

5.2. Dimension 2. Digital Learning and Sources

Regarding the second dimension, it is worth noting that students were asked ten items to check issues related to digital learning and sources during this period in which learning was mediated trough Internet. From D2.1 to D2.3. items (see Table 3), they were asked about what kind of sources did teachers use during the lockdown, and from D2.4. to D2.6. (see Table 3), what sources did they prefer for their lessons. As seen in Table 2, some items present differences statistically significant ($p < 0.005$) among countries, which means we could reject null hypothesis, it is worth noting that in the item D2.5., videos and audiovisuals as the preferred sources for learning from all students in all countries studied who seem to prefer videos and audiovisual sources for learning (>0.95%).

Table 3. Differences among countries for D2 and basic statistics (N = 376).

	Spain		Italy		Ecuador		*p*		
	f	%	f	%	f	%	S-I	I-E	S-E
D2.1. Papers and texts	145	91.19	59	47.2	67	72.82	0.000 *	0.000 *	0.000 *
D2.2. Videos and audiovisuals	54	33.96	118	94.4	78	84.78	0.000 *	0.018	0.000 *
D2.3. Podcast	19	11.94	26	20.8	28	30.43	0.043	0.105	0.001 *
D2.4. Papers and texts	65	40.88	64	51.2	58	63.04	0.083	0.082	0.001 *
D2.5. Videos and audiovisuals	152	95.59	121	96.8	89	96.73	0.602	0.980	0.750
D2.6. Podcast	72	45.28	48	38.4	55	59.78	0.244	0.002 *	0.036

$p < 0.005$. * differences statistically significant, null hypothesis is rejected in these cases.

These results give answer to [RQ2] about the kind of sources teachers have used during the lockdown. The situation in Spain shows that for 91.19 percent of students, teachers have used texts and that 95.59 percent of them will prefer video sources and audiovisual materials. Spanish students show significant differences from Italian (S-I in Table 3) (χ^2 (1) = 66.94, $p < 0.005$), Cramer's $V = 0.486$ results are statistically significant between both countries and are also moderately different ($0.2 < ES \leq 0.6$). Spanish students from Ecuadorian (S-E in Table 3) (χ^2 (1) = 14.98, $p < 0.005$), Cramer's $V = 0.244$ show lower differences, which indicates to us that in both countries, papers and texts have been the most used sources. In Italy, the situation seems to be more consistent than in Spain, where 94.4 percent of students declare that teachers have used video sources and 96.8 percent confirm that they prefer this kind of materials for learning. Italian students show different perceptions from Spanish students in item D2.1 (as explained above), and from Ecuadorian students as well (I-E in Table 3) (χ^2 (1) = 14.29, $p < 0.005$), Cramer's $V = 0.257$. A similar situation occurs in Ecuador with 84.78 percent declaring teachers used videos and audiovisuals and 96.73 consider these as the best materials for lessons. As an

overview of these results, it is worth noting that 52.2 percent of all students in the sample declared that materials used for lessons during lockdown were not appropriate. From these responses, 62.3 percent of them argue that sources were not suitable for distance education, and 15.2 percent said that sources were boring for distance education.

Responding to research question [RQ4] about if teachers used new learning methodologies to guarantee quality in teaching, the 77.35, 94.4, and 55.43 percent from Spain, Italy, and Ecuador, respectively declare that their teachers did not used any of these methodologies.

It should also be noted, as seen in Figure 2, that teachers using new learning methodologies in this situation did not obtain all positive responses from students, 6.3 percent declare they were unusable and 15.3 said they were not well designed. We find only 18 percent of students from those who respond yes (22.34 percent from N = 372), finding this innovation "engaging" and 56.8 percent "engaging and useful".

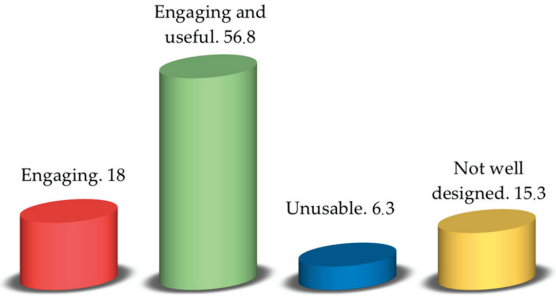

Figure 2. Student in percentage rating the use of active methodologies during the lockdown.

5.3. Dimension 3. Teaching and Teachers Guidance and Skills

The third dimension studied aspects related to teaching and teacher's guidance and their skills, in this regard, results show that students felt a positive perception about classes in this situation, 61.7 percent of the total sample declare they were positive and 38.3 felt they were negative. If we focus on each country, results are similar. As shown in Figure 3, in Spanish students, 72.32 percent perceive classes during this situation as positive, followed by Ecuadorian students at 63.04 percent, and Italian 47.2 at percent.

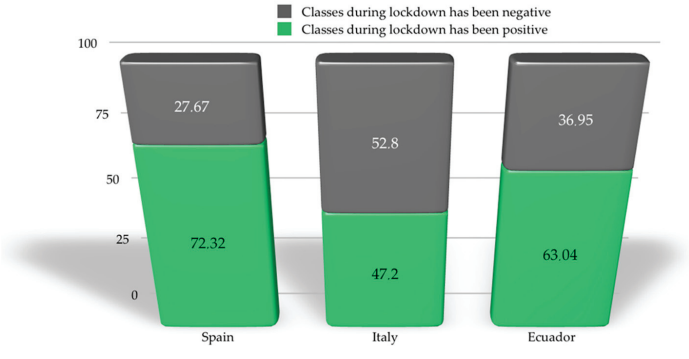

Figure 3. Student's perception about classes during the lockdown.

On the other hand, results of the third dimension give us a response to [RQ5]: Did students perceive negative aspects in the teaching lessons during lockdown? When asked about positive aspects, only 64.36 percent of students answered and only 43.08 percent responded about negative aspects.

Keeping in mind these results, as could be seen in Table 4, Italian (46.26%) and Ecuadorian (37.09%) students felt time was better organized and almost half of Spanish students (48.42%) and Ecuadorian ones (42.39%) perceived lessons as similar to face-to-face classes. About negative aspects, it should be noted that there are barely no significant differences ($p > 0.005$), confirmed with the percentages: 3.26, 5.67, and 5.11 for Spain, Italy, and Ecuador, respectively, in the first negative aspect studied; and 40.07, 40.29, and 46.51 in the second unfavorable aspect analyzed. In this case, null hypothesis was not rejected, no differences were found in the perception of students in all countries ($p > 0.005$).

Table 4. Positive and negative aspects perceived by students among countries about teaching during lockdown.

	Items	Spain		Italy		Ecuador		n	*p*		
		f	%	f	%	f	%		S-I	I-E	S-E
D3.1. Positive issues	Time is better organized	36	31.85	31	46.26	23	37.09	90	0.053	0.291	0.507
	Similar to face-to-face classes	77	48.42	36	28.8	39	42.39	152			
D3.2. Negative issues	Force me to be aware any time	17	3.26	38	5.67	22	5.11	77	0.013	0.808	0.020
	Do not adapt to online learning	25	48.07	27	40.29	20	46.51	72			

Positive aspects N = 242; Negative aspects N = 162.

To conclude this dimension, students were asked about the fluency and skills of their teachers managing digital tools in this situation. As can be seen in Figure 4, differences among countries are clear, while only a percentage of 24.53 of students in Spain perceive their teachers have appropriate skills, in Italy and Ecuador, the percentage is triplicated with 74.4 and 76.08, respectively. These results are confirmed by chi-square test and Cramer's *V*, demonstrating which countries differ from each other: Italy–Spain (χ^2 (2) = 94.5, $p < 0.005$) and Cramer's $V = 0.496$ and Spanish and Ecuadorian students (χ^2 (1) = 63.05, $p < 0.005$) and Cramer's $V = 0.501$.

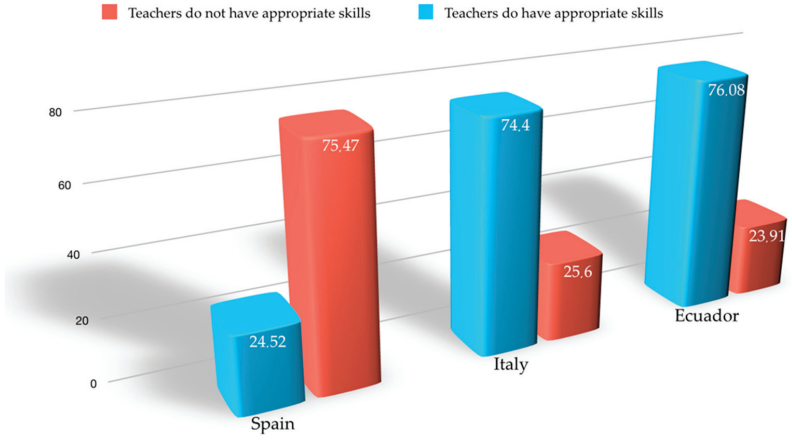

Figure 4. Students' perception about classes during the lockdown.

5.4. Dimension 4. Supporting–Empowering Students

Empowering students and supporting them is the fourth dimension defined, it is essential for an appropriate digital literacy. This dimension ensures the accessibility to learning sources, and the use of technologies to foster learners' active and creative engagement. In a global situation of lockdown, to guarantee this dimension implies offering the opportunity for students to follow personalized learning pathways. The first data analyzed in this regard do not indicate students have felt confident about the situation. From the whole sample, results show that the 86.2 percent of students get the impression of their learning process being damaged because of the situation and the way it has been solved. Data

from countries reveal similar results, being Spain the country in which students felt more damaged: Spain, 93.08%; Italy, 79.2%; and Ecuador, 83.7%.

Data collected in Table 5 give response to [RQ6]: Did students feel their education was damaged because of this situation? From the seven items studied, two main variables were analyzed: D.4.1. This situation has damaged your teaching (D4.1.1. to D4.1.4.) and D.4.2 Negative aspects in learning (D4.2.1 to D4.2.3). Differences among countries could be observed. In the first item, it is worth noting that 35.8% of Spanish students declared that the quality of teaching was the worst, and similar data for Ecuadorian students was found that in a percentage of 85.8 said that the learning process was at a lower level teaching. It also should be noted that half of Italian and Ecuadorian respondents (51.5 and 52.1, respectively) felt that learning was less stimulating, and all of them agreed that this situation lead to an increase in homework in their daily learning process.

Table 5. Positive and negative aspects perceived by students among countries about teaching during the lockdown.

		Spain		Italy		Ecuador		n	*p*		
		f	%	f	%	f	%		S-I	I-E	S-E
D4.1	D4.1. 1 The quality of teaching is the worst	57	35.8	10	10.1	4	4.34	71	0.000	0.000	0.000
	D4.1.2 More homework is demanded	46	28.9	30	30.3	4	4.34	80			
	D4.1.3 Learning process has lower level	35	5.03	8	36.3	36	85.8	79			
	D4.1.4 Less stimulating	21	13.2	51	51.5	48	52.1	120			
D4.2	D4.2.1 Boring	25	15.7	1	0.81	40	43.4	66	0.000	0.000	0.000
	D4.2.2 More demanding	23	14.4	6	4.87	19	20.6	48			
	D4.2.3 Too much homework	88	55.3	79	64.2	22	23.9	190			

f = frequency.

In order to reject or not the null hypothesis (H_0) in variable *D.4.1. This situation has damaged your teaching* (D4.1.1. to D4.1.4), after chi-square significant differences for values $p < 0.005$, Cramer's V values were observed. For Spain–Italy (S-I in Table 5) (χ^2 (3) = 54.80, $p < 0.005$) we reject null hypothesis, value for Cramer's $V = 0.461$ indicates that results are statistically significant and are moderately associated ($0.2 < ES \leq 0.6$). Spanish students felt more damaged than Italian students. Regarding Italy–Ecuador (I-E in Table 5), significant differences were also observed, χ^2 (3) = 40.16, $p < 0.005$, value for Cramer's $V = 0.459$, showing that results are statistically significant and are also moderately associated ($0.2 < ES \leq 0.6$). Comparing Spain and Ecuador, significant differences are also appreciated χ^2 (3) = 79.70, $p < 0.005$, value for Cramer's $V = 0.564$.

Regarding the variable *D.4.2 Negative aspects in learning* (D4.2.1 to D4.2.3), null hypothesis (H_0) is also rejected. After chi-square showing significant differences, Cramer's V explains the effect size. For Spain–Italy (S-I in Table 5) (χ^2 (4) = 43.27, $p < 0.005$), Cramer's $V = 0.392$ indicates that results are statistically significant and are moderately associated ($0.2 < ES \leq 0.6$). In relation to Italy–Ecuador (I-E in Table 5) (χ^2 (4) = 90.05, $p < 0.005$) value for Cramer's $V = 0.647$ show strong association ($ES > 0.6$), Italian and Ecuadorian students felt really different about this variable. Results in the case of Spanish and Ecuadorian students (S-E in Table 5) χ^2 (4) = 32.77, $p < 0.005$, value for Cramer's $V = 0.361$ indicate moderate differences.

Keeping in mind students had not a very high feeling in the empowering dimension studied, the following data give more context about the situation, responding to [RQ7] about the students' perception about their own digital competence level to face the situation. It seems clear observing Figure 5 that all students participating (n = 376) were confident about their own digital competences.

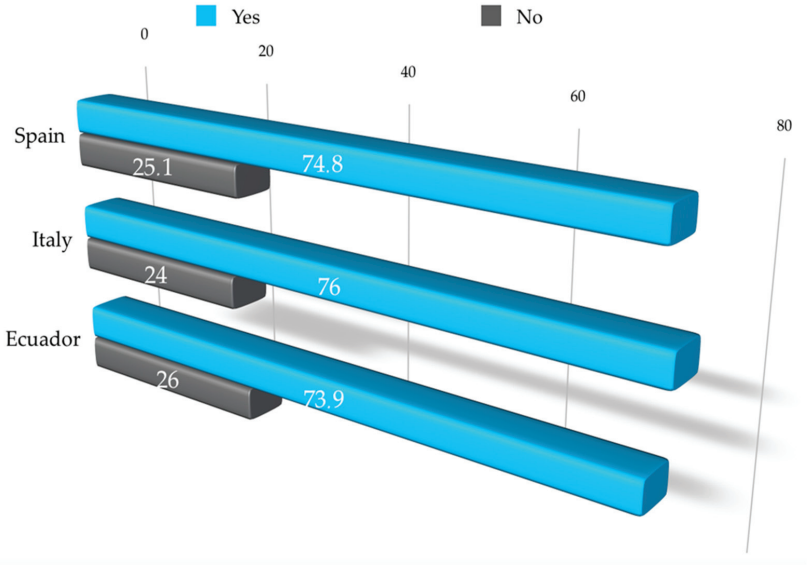

Figure 5. Students' confidence about their own digital competence and skills.

As can be observed in Figure 5, three quarters of all countries felt confident (74.8 percent in Spain; 76 in Italy, and 73.9 in Ecuador). These data are also supported by results in the last questions about fake news. To use technologies within a pedagogical purpose is essential for them to have the transversal skills needed for deep and critical thinking. In this regard, students in all countries declared receiving fake news during the lockdown but not almost sharing them as seen in Table 6.

Table 6. Students reception and sharing of fake news during lockdown.

	Spain		Italy		Ecuador		n	*p*		
	f	%	f	%	f	%		S-I	I-E	S-E
D4.9. Have you received fake news during lockdown?	145	91.1	106	84.8	89	96.7	376	0.135	0.006	0.119
D4.10. Have you shared fake news during lockdown?	20	16.3	10	8	12	13.04	376	0.047	0.259	0.585

f = frequency; $p < 0.005$.

It should be noted the high percentage of students in all countries studied received fake news: Spain 91.1, Italy 84.8, and Ecuador 96.7. There is no significant difference among countries ($p > 0.005$) as observed in Table 6, students mostly respond "Yes" to question D4.10, *Have you received fake news during lockdown?* (M = 1.1; SD = 1) and "no" in question D4.11, *Have you shared fake news during lockdown?* (M = 1; SD = 2).

6. Conclusions and Discussion

Since Glister defined digital literacy in 1997, the concept has been generally accepted and its development is inherently merged to educational development [34–36]. In this regard, since the beginning of this century, changes and challenges in the educational environment such as new competencies, new digital media, open digital sources, digital communication, and critical thinking have been related evolving all together in the multidimensional concept of digital literacy [7,37]. Already two decades since not only the international community strives to develop this digital literacy through education [38,39],

but also all countries and governments around the world [30–32], education should ensure digital literacy whatever modality it acquires.

The aim of this research was to present a comparative-descriptive study analyzing how high education in three different countries has faced the global lockdown situation in terms of ensuring the development of digital literacy. Having in mind the unusual situation caused by COVID-19 seems to be a disruption for education [39] that will obligate countries and governments to rethink educational systems, it really makes sense to analyze what has happed during the lockdown situation in order to face future decisions with empirical information [40]. In this regard, it could be said that one of the limitations of this study is that it only analyzed three countries, future pathways could amplify the research area in order to study the impact of this situation in a wider perspective.

In line with previous and recent research [29,41,42], this study presents an overview of the development of digital literacy in three different contexts: Spain, Italy, and Ecuador. The novelty in this case is that research is framed in the global lockdown caused by COVID-19, allowing us to make interesting conclusions for the near future in which the pandemic situation still affects education and global health. Dimensions defined and analyzed support findings and results in line with main frameworks defining digital literacy [30,31,39]. In this regard, we could highlight the following conclusions from results obtained:

In first place, and regarding dimension one studied, *Teacher's professional engagement and collaboration*, related to the capability to integrate organizational communication, professional collaboration, and effective practice and development, results make us conclude that significant differences exist among the three countries studied. For Spanish and Italian students, teachers have not been well coordinated in this situation, they felt they were not properly informed and declare receiving contradictory information. Nonetheless, all samples, Spanish, Italian, and Ecuadorian students, felt they were not supported enough with statistically significant differences between Spain and Italy, and Spain and Ecuador. Spanish students were the most disappointed in this regard. This evidence should be interpreted taking into account, that in March 2020, the Italian government [43] announced it would equip schools with digital platforms and tools for distance learning, lend digital devices to less well-off students, and train school staff in methodologies and techniques for distance learning. Significant differences are shown as well among countries in the case of receiving contradictory information, Spanish and Italian students declared 24 points and 32 points above Ecuadorian students.

About dimension two, *Digital learning and sources*, analyzed, it can be concluded that digital sources used during the lockdown by teachers, mainly texts and papers, were not the ones the students would prefer as digital sources for learning, which were videos and audiovisual materials. Differences among countries are interesting in this point, showing that Spain was the county in which teachers used papers and texts the most and videos and audiovisuals less. This may be one of the reasons for the high level of displeasure among students from all countries on the way teachers and universities have addressed the situation. These results are in line with the Organization for Economic Co-operation and Development Report [39] (p. 10) highlighting several universities have "struggled and lacked the experience and time they needed to conceive new ways to deliver instruction and assignments".

The third dimension analyzed, *Teaching and teacher's guidance and skills,* gives evidence that students perceive positively the issue following their classes in a distance learning modality, however they perceive too many negative aspects such as online lessons being too similar to face-to-face classes, not adapting properly to the online philosophy. In the case of Spain, these results are reinforced in the fact students felt teachers did not have appropriate skills to manage distance online teaching. Summarizing student's perceptions, the situation has given the worst quality of education, less stimulating and boring lessons, and more homework to do. It is worth noting that no differences were found among countries in this regard, so in future actions, this dimension should be reinforced and enhanced. Teachers' digital skills still continue being a key point in digital literacy development as previous research indicated [21,23].

All international frameworks and mostly nationals highlight dimension four as fundamental for a proper digital literacy enhancement, *Supporting-empowering students*. Existing literature also emphasizes

this area as essential [28,29]. This dimension gives them the engagement that ensures the accessibility to learning sources, and the use of technologies to foster their active and creative engagement [44,45]. Results in this dimension have no significant differences among countries studied: Spanish students felt the most that the quality of teaching was the worst, and Ecuadorian ones think the most learning process has lower level during the lockdown. About too much work being demanded, Spanish and Italian students were the most displeased groups. Students felt confident about their digital skills and competences to face online distance learning. They all show a mature behavior receiving and evaluating fake news; they mostly declared getting them but not sharing it at all.

The work presented is found in line with the last report by the OECD, *The Future of Education and Skills, The future we want* [38] that constitutes part of the OECD Learning Framework 2030, but focusing on new concerns related to the development of proper digital literacy during and after COVID-19. These conclusions give interesting insights from students to face future challenges that the crisis has brought to light: firstly, universities would need to rethink and reinvent learning environments, not only based on a digital platform, striving to give learning possibilities through digitalization that expands and complement students learning; secondly, digital skills and competences should be reinforced in teachers as a key point in new learning scenarios, and it may be teachers are not ready enough for digital learning opportunities, so efforts in technology investment are not enough to guarantee learning for the near future.

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Appendix A

The appendix A provides important information in order to clarify dimensions established, items studied in each dimension and finally the coding scheme for each item. These data will help in the understanding of data analysis and results.

Table A1. Dimensions, items in each dimension and coding scheme used in the questionnaire.

Dimension	Items	Coding scheme	
		Type of Codification	Values
D1. Teacher's professional engagement and collaboration	D1.1 Have teachers been well coordinated among them during the lockdown?	Dichotomous	Yes = 1 No = 2
	D1.2. Have you felt you were not supported enough?		
	D1.3. Have you felt you were properly informed about your lessons and proceedings?		
	D1.4. Have you received contradictory information anytime?		
	D1.5. Worst aspect about online teaching during lockdown	Numerical coding, no scale	
D2. Digital learning and sources	D2.1. Papers and texts	Dichotomous	Yes = 1 No = 2
	D2.2. Videos and audiovisuals		
	D2.3. Podcast		
	D2.4. Papers and texts		
	D2.5. Videos and audiovisuals		
	D2.6. Podcast		
	D2.7. Were the materials used by teachers adequate?		
	D2.8. Were they appropriate for distance learning?		
	D2.9. Did teachers used new learning methodologies to guarantee quality in teaching?		
	D2.10. Can you value these methodologies if they have been used	Numerical coding, no scale	

Table A1. *Cont.*

Dimension	Items	Coding scheme	
		Type of Codification	Values
D3. Teaching and teachers guidance and skills	D3.1. Students perceptions on online lessons	Dichotomous	Positive = 1 Negative = 2 Yes = 1 No = 2
	D3.2 Did you feel time was better organized?		
	D3.3 Did you feel classes were similar to face-to-face classes?		
	D3.4 Did you feel they force me to be aware of a moment/hour of the day?		
	D3.5 Did you feel they do not adapt to the philosophy of online learning?		
	D3.6. Did you feel teachers have appropriate skills?		
D4. Supporting-empowering students	D4.1. Do you think the quality of teaching was worst?	Dichotomous	Yes = 1 No = 2
	D4.2. Do you think more homework was demanded?		
	D4.3. Do you think learning process had lower level?		
	D4.4. Do you think learning process was less stimulating?		
	D4.5. Do you think learning process was boring?		
	D4.6. Do you think learning process was more demanding?		
	D4.7. Do you think learning process had too much homework?		
	D4.8. Did you feel you have the proper digital skills?		
	D4.9. Have you received fake news during lockdown?		
	D4.10. Have you shared fake news during lockdown?		

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