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Misinformation in EU elections 2019: A post Analysis

Alexandros Tsakalidis

SID: 3305170018

Supervisor:

Assist. Professor. Vasileios Peristeras

SCHOOL OF SCIENCE & TECHNOLOGY

A thesis submitted for the degree of

Master of Science (MSc) in e-Business and Digital Marketing

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Abstract

This dissertation is written as a part of the MSc in e-Business and Digital Marketing at the International Hellenic University.

By this Master Thesis, we conduct an analysis for one of the most important issues that our society faces during the last years, misinformation. Misinformation is not a totally new concept, however, in the recent past, it has become a major topic for discussion and gained the attention of the research community since it spreads through the internet globally. Misinformation has become an important problem that our society faces during the last years aiming mostly at political interference. This thesis investigates the concept of misinformation with the European Elections (EU) 2019 as a case study. First, we explore the Code of Practices published by the European Commission to address the spread of online misinformation and its compliance status with online platforms, leading social networks, and the advertising industry. Second, we analyze the social media profiles of main political figures in the elections in terms of misinformation. Finally, we investigate the previously fact-checked articles related to EU elections 2019 by using state-of-the-art and open-source fact-checking tools. We employ open source free tools.

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Alexandros Tsakalidis

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1 Introduction

Over the last years, misinformation has arisen in various formats and different aspects of society. The rapid spread of misinformation can influence millions of people, impacting elections and financial markets. Misinformation is seen as a serious problem across the globe including Europe. To curb the rising influence of misinformation, some countries have made the creation and distribution of deliberately false information as a crime (133). They have also established national laws to tackle misinformation. However, simply passing a law against misinformation may not be the best way to deal with the problem. Such laws create a dilemma balancing free speech and access to accurate information in the era of misinformation. There is no doubt that modern technologies have accelerated the speed at which fake news spread. Technology has made lying easier, faster and more credible (133).

In the literature, the term information is the solution of uncertainty and it is based on real and truthful facts, while misinformation is a term -used for unreal information- which mainly refers to information that is not accurate and valid (7). On the other hand, disinformation is presented as false information which is spread with the intention to deceive its recipients. Thus, it is important to categorize those 2 terms not as synonyms -as many people believe- but as 2 separate entities. (28)

Fake news has become a trait of our generation. Fake news is inaccurate or false information, however, there is no clear separation whether it is intended or not, to deceive the recipients (48, 49). Many types of fake news exist, though propaganda and conspiracy theories are the most used for political purposes and campaigns (59, 61, 62, 63). Of course, social media platforms could not be absent from the fake news analysis, as they are inextricable with the creation and spread of fake news content. Nowadays, when social media platforms are so popular it has become very easy to share any type of content through social media to a specific audience and then due to the echo chamber effect to be spread among “side users”, according to their community and searches. The only issue for fake news creators is the fact that even social media users sometimes seem to question

the credibility and accuracy of social media content in comparison with traditional media sources. (76, 77)

As previously mentioned, fake news is used in political campaigns, however, not necessarily directly from politicians. Media outlets take on the role of the intercessor and do the job on behalf of the political parties, without investing in obtaining accurate information. (53) Satirical memes, outdated content and coordinated inauthentic behavior are some tactics used by those media outlets in order to serve specific interests. (94, 95)

Nevertheless, there are some plans and actions to tackle misinformation that are taken at governmental and EU levels. For example, after 2016 there was a cooperation of 43 governments in order to proceed with a plan of fake news tackling. this plan consists of 4 pillars that include targeting social media platforms, targeting offenders, targeting governmental capacity, and targeting citizens, civil society and media organizations (113).

Concerning the EU (116), a Code of Practices was created to provide a major protection layer to EU citizens. Under this context, the EU decided to cooperate with the 3 social media giants (Google, Facebook, and Twitter) and put them responsible for this serious issue. The main sectors of the collaboration would be to ensure scrutiny of advertisement placements, political advertising transparency, and integrity of services.

A high-level experts committee on online misinformation was formulated by the European Commission. The objective of this committee was to create a report (115) for the present and future course of action. These actions were focused on 5 specific elements. Such elements include transparency enhancement of online news, media, and information literacy promotion, development of tools for users and journalistic empowerment, safeguard the diversity and sustainability of EU news and media ecosystem, and promote continued research on the disinformation impact in the EU through monitoring and reporting.

One of the means to spread misinformation over social media is malicious accounts also called bots. A bot is a software which is programmed to perform simple and repetitive robotic tasks (97,98) and can be categorized as malicious (bad bots) or well-intentioned (good bots) (103, 104), Bots are widely used in election campaigns and are programmed to automatically produce content and interact with other users (83).

Facebook and Twitter have decided to collaborate with 3rd party fact-checking organizations in order to provide an extra protection layer on online disinformation (116). These organizations aim to search and conclude on whether a claim is accurate or not.

They may choose non-partisanship media outlets that provide truthful information without the intention to deceive (119, 120). To manage this context, the IFCN (International Fact-Checking Network) decided to create a Code of Principles and many organizations from 27 countries responded and became members. These organizations are obliged to follow the Code of Principles which mainly promotes transparency and empowers the extinction of partisan media. (122-124)

Scope of subject research work

The goal of this research work is to examine the concept of misinformation in relation to the European Elections (EU) 2019 as a case study. First, we explore the Code of Practices published by the European Commission to address the spread of online misinformation and its compliance status with online platforms, leading social networks, and the advertising industry. Second, we analyze the social media profiles of main political figures in the elections in terms of misinformation. More specifically, we study what are the tactics used by the political carriers in order to attract people and get more votes in the election. Furthermore, we also present how social media campaigns were used by the European party leaders during the last EU election 2019. Finally, we investigate the previously fact-checked articles related to EU elections 2019 by using state-of-the-art and open-source fact-checking tools. We employ open source free tools. We also provide some analysis of fact-checking tools for tackling misinformation.

The structure of the remaining thesis is as below:

In chapter 3, we explain our research methodology and describe how the data was collected, how do we use the data sources and why 4 political leaders (Manfred Weber, Philippe Lamberts, Dacian Ciolos, and Iratxe Garcia Perez) were selected. It is important to mention that we use already existing data for our research. A case study approach was adopted as a research methodology to investigate misinformation in EU elections 2019 based on social media sources. The last part of this section refers to the trustworthiness of the study.

In chapter 4, We conduct an experimental analysis of the main online social media (Twitter, and Facebook, etc.,) activities of EU political parties and the impact of some fact-checking tools. We investigate the behavioral differences among all four political leaders

and analyze the results. We also present analysis using open-source fact-checking tools that include but not limited to MisinfoMe¹, NewsGuard², etc., In chapter 5, we provide the conclusion of our research work.

¹ <https://misinfo.me/misinfo/home>

² <https://www.newsguardtech.com/>

2 Literature review

In this section, we present the results of the literature review regarding the most important concepts of misinformation. The main search source was Google Scholar, and then we were being redirected to various electronic libraries. The keywords strings which we used are “MISINFORMATION”, “DISINFORMATION”, “FAKE NEWS IN ELECTIONS”, “FAKE NEWS TYPES”, “MISINFORMATION TACKLING”, “FAKE NEWS ON SOCIAL MEDIA”, “MISINFORMATION/ DISINFORMATION IN ELECTIONS”. Then we read all relevant articles and started forming the chapters of the thesis, as per the Contents structure. We selected only scientific articles and publications in the English language without strict date restrictions, by taking into account that articles regarding definitions and general information can be taken from old publications, but case studies and analysis for specific situations (i.e. 2016 US election) should be taken from recent publications done in the last 2-3 years. This part of the thesis covers the RQ1 (Chapter 3.1) and help us define the most important concepts of misinformation.

2.1 Misinformation and disinformation

In this section, we present various definitions of the literature for both disinformation and misinformation terms. These definitions will be used as a basis and introduction for our analysis. To understand the meanings of misinformation and disinformation, we may first gain an understanding of the information as a concept.

2.1.1 What is information

Merriam- Webster defines information as, the solution of uncertainty and answer to the question “what an entity is” by defining its characteristics. It relates to both data and knowledge (7). The data rely on different parameters and knowledge relies on the level of understanding a concept.

Dretske stated that information is an objective of two parts, which include its technical composition and the ordinary sense of the term information (44). Through the technical

composition, Dretske addressed the analysis of behavior based on specific information, whereas the concept of the ordinary sense is primarily utilized in areas where the news, the learning and the knowledge perform a critical role. Dretske also believes information contains a dimension of truthfulness since it refers to incidents that have happened in the real world (44). In this paper, we examine the “ordinary sense” of information and its negative consequences, i.e. disinformation and misinformation (1,2).

Another philosopher of information, Luciano Floridi, influenced by Dretske but not fully congruent supports that the term information is a composite and complex concept, so cannot be analyzed only by the SDI (Standard Definition of Information, which supports that information is meaningful and well-structured data) and needs to be revised. The SDI concept supports that even false information is part of the term “information”, but he cannot accept that as he strongly argues that the adjective “false” can define overall the term “information” (3,5). The information has to be a sincere concept by default and adds its truthfulness part, while SDI is much more generic including the “false” side of information (3). He claims that “false information” is not a valid term and should be reverted either to misinformation (when the content is false, but not on purpose) or disinformation (when the content is intentionally created to mislead the recipients) (6). Simpler, he separates information from its false derivatives and gives a truthfulness dimension to the terminology.

In the same direction, De George also focuses on the important asset of information, the concept of truth. When information contains misleading or fake parts, then we need to follow different approaches and definitions. De George separates data and information due to the fact that data do not contain any point of truth when they are raw and not processed or structured, while original information does (42).

Brock and Dhillon (40) define information as a generic term like the “ether” of the middle ages, that can be spread around but cannot be caught, giving a more abstract approach to the matter.

Ulrich (41) analyzing the concept from another aspect and connects information with data and supports that if data are raw incidents of the world, information is data with a specific meaning. This happens when data obtain a meaningful context and then can be perceived as information.

2.1.2 What is misinformation

Merriam-Webster defines misinformation as false or not accurate information (13). According to the UK Parliament misinformation refers to the unintentional sharing of false information (14). Floridi defines misinformation as a false section of semantic content, in which it exists as a subcategory of the term disinformation (6). While Fox believes that misinformation must be treated in the same way as information, the sole difference is that misinformation is always false while information is alethically neuter. For Fox, the alethic value of misinformation is standard and is always “false”, while the alethic value of information is “true” (45).

Sille Obelitz Sør (15), quotes the definitions of Floridi & Fox as per below:


Floridi (6) defines misinformation as the false section of semantic content, in which exists as subcategory the term disinformation, while Fox (45) believes that misinformation has to be treated with the same way as information, with the only difference that misinformation is always false while information is alethically neuter. For Fox, the alethic value of misinformation is standard and is always “false”, while the alethic value of information is “true”. Fallis defines misinformation as the different types of content that contain inaccurate information. For Fallis, the intention characterizes whether content will be captured as misinformative or disinformative (16, 17). Loose defined misinformation as information that is just incomplete (19) and Karlova & Lee (20) also stated that misinformation might be not accurate, uncertain, misleading (not clear) or ambiguous.

Another approach of Libicki (2007), indicates that misinformation is accepted or more easily accepted by people that support or share the same ideas and vision. Thus, it is more likely to be misinformed (34,35). The biases and beliefs that somebody may have in terms of politics, religion or general issues, can be a critical factor of misinformation acceptance, comparing it with the acceptance of unbiased and impartial audiences. In fact, there are cases that by trying to tackle misinformation, led to opposite results and finally strengthen the misinformation claims (37,38).

Biases and personal beliefs (political, religious, national, etc.) are very important parts of the misinformation concept and as Kumar and Geethakumari (2014) state in their analysis, the most dominant source of misinformation is the media. Especially in the last years, when governments and politicians can be described as crucial players of the misinformation development. Of course, social media networks (platforms, blogs, etc.) have

played a key role, considered as the most important sources of misinformation spread, due to the speed of dissemination and the direct interaction with the users. Amplified by the social media platforms in some cases, forming of cyber- ghettos based on echo-chambers and human biases, have also played a role in the diffusion of misinformation and finally resulted in false beliefs on serious topics (politics, religious, etc.) in parts of the general public (36).

Picture 1 presents the seven different types of misinformation, and the scope that each type serves, according to Watts (2018, 73). Useful patterns can be found in the below matrix, while it is easier to understand the motives that lead to any different type of misinformation.

FIRSTDRAFT		MISINFORMATION MATRIX						
								
	SATIRE OR PARODY	FALSE CONNECTION	MISLEADING CONTENT	FALSE CONTEXT	IMPOSTER CONTENT	MANIPULATED CONTENT	FABRICATED CONTENT	
POOR JOURNALISM		✓	✓	✓				
TO PARODY	✓				✓		✓	
TO PROVOKE OR TO 'PUNK'					✓	✓	✓	
PASSION				✓				
PARTISANSHIP			✓	✓				
PROFIT		✓			✓		✓	
POLITICAL INFLUENCE			✓	✓		✓	✓	
PROPAGANDA			✓	✓	✓	✓	✓	

Picture 1: Misinformation matrix (73)

2.1.3 What is disinformation

Disinformation is false information spread intentionally to mislead the intended receivers. They equally considered it as a subcategory of misinformation (22, 23, 24). Bellemare has the same view and defines disinformation as the deliberate creation of false content to mislead recipients (25). Floridi defines disinformation as a subcategory of misinformation. He also focused on the intentionally given misleading part of the false semantic content (6).

Fallis has done the most extensive analysis of the term. His main definition is that disinformation is “information that is intentionally misleading that is likely to lead the people to accept false beliefs”, continuing by saying that the operation of misleading people can be obtained in 2 ways, either by evolution or by design, both of them intentional. In the case of designed disinformation, there are examples of lies and political propaganda, which is implemented by the source after a plan that has political or other benefits, while in the evolution case there are examples of conspiracy theories that are used regularly so as to favor only the creator. Fallis, adds also another dimension of disinformation by introducing the term “semantic or representational content” and by saying that a fact is not necessary to happen so as to be depicted with a text or an image and there are possibilities that representational content can be either true or false. He has also analyzed the terminology “true disinformation”, which mainly refers to the implication of trying to convince somebody for something false by using something literally true and as an example (26, Adler, J. 1997) he uses the situation where a man is asked by a criminal where is his friend and he answers “ around Nevada” in order to mislead the criminal with a generic, but also true information . This method is also called falsely implication and it is not accidental, but when true disinformation is being spread in the web with no intention to mislead the recipient might believe that the information is correct and accurate (8-12).

He has (27) also enriched the term of disinformation by referring to its subcategories as per described below:

- *Disinformation on the governmental or military level:* By deliberately spreading false news that serves the goals of specific strategies. This can be achieved even by single individuals with high public influence.
- *Disinformation as part of a planned fraud:* Hackers have the skills to intentionally tamper information in the web, but there are also cases where individuals have done so, either in Wikipedia or a political context.
- *In-direct disinformation:* There are many examples where disinformation comes indirectly from actors that were not initially created the content and do not serve directly their goals. An example could be political parties interacting with biased media for specific news spreading.
- *Another type of disinformation (not written or verbal):* Another type of disinformation which is used can be doctored images that try to present an image either in a negative or positive way, hiding its real state.

- *Targeted disinformation*: Specific messages that refer to a particular team or organization.
- *Machine targeted disinformation*: Web crawling is an example of machine targeted disinformation, where a manager of a website tries to trick a search engine by referring to a competitor's page in order to gain sessions and views.

Another approach to disinformation (18) defines it as deliberately deceptive information, containing unknown incentives that might be political, social, benevolent or even personal. Karlova and Fisher believe that disinformation (and misinformation) is a sub-section of information, due to the fact that even disinformation might have truthfulness sometimes.

2.1.4 The impact of misinformation and disinformation

This section explains the differences between disinformation and misinformation and their impact on general public beliefs. For example, disinformation and misinformation differ in intent. It will be interesting to further explore either disinformation or misinformation have differences and commonalities.

Information, misinformation, and disinformation are spread through people (media, politicians, public carriers, etc.) targeting the general public and its sub-categories, but sometimes it is difficult to separate and categorize content as information, misinformation or disinformation.

Under this context, Karlova (20) tried to distinct them as inaccurate information (misinformation) and deceptive information (disinformation) and emphasized in the fact that people may spread any kind of news -misinformative or disinformative- even if they don't support it or believe it, but just because it is related with the most recent hot topics of the public interests.

In table 1, below, tries to summarize the features of each term (information, misinformation, disinformation), based on four attitudes: True, Complete, Current, Informative and Deceptive, due to the fact that sometimes is difficult to distinguish the motivation and incentives of any unique piece of information, that finally can be misinformation or disinformation depending on the data of the below fields.

	Information	Misinformation	Disinformation
True	Y	Y/N	Y/N
Complete	Y/N	Y/N	Y/N
Current	Y	Y/N	Y/N
Informative	Y	Y	Y
Deceptive	N	N	Y
Y= Yes; N= No; Y/N= Could be Yes and No, depending on context and time			

Table 1: Summary of features of information, misinformation & disinformation (20)

A similar view is presented by Thorson (28) who claims that both disinformation and misinformation are false, not accurate and misleading, but their main difference occurs from the intention to cheat the recipients of the content. Although there is a tendency by the journalism community to confuse those 2 terms and treat them as synonyms and name every single piece of inaccurate information as misinformation, Thorson and Wardle (28,29) claim that this does not represent the reality.

When misinformation and disinformation are being handled as two identical terms, the sense of the intense is being lost thus there is no separation from content creators that are causing harm deliberately and the rest that might cause harm as well but without any intention and maybe due to their biases or low level of education. So, it is important to treat those two terms separately with their own peculiarities respectively. (3,4,9,10,11,12, 30). Mahon (31) also agrees and endorses by referring to the importance of the above-mentioned categorization, which finally leads to the overall distinction of lies (content that is wrong but believed that is accurate), misleadingness (inaccurate but based on verbal & gesture complexities) and deception (successful misleading on purpose).

Another analysis on the topic can be done if we consider the opinions of Hernon (1995) and Fetzer (2004), for the element of lying. When somebody disinforms somebody else, it means that there is the intention to lye, but this doesn't mean that when somebody spreads lies has always the intention to deceive, as this person might be simply misinformed. (32,33)

Stahl (39) looks into the term "semantic attack" in order to explain the differences between misinformation and disinformation. He actually believes, that it is a hard task to

separate and title content either as misinformation or disinformation and that there many cases in the web that due to semantic attacks the final information that the users receive is misleading.

Fallis (8), draw our attention to the chain of communication before the false information reaches an audience and claims that in order to name something as disinformation it doesn't need to be sent directly from the initial source. The main difference here is that in a chain of misinformation, there might be users that they know that this specific piece of information is false, but they still spread it so as to serve a goal (disinformation), while some other users may spread it due to the fact that they believe that this information is correct (misinformation).

According to Bernd Carsten Stahl (43), the element of truth distinguishes the term information from mis/ dis information. Information is always true while the rest are not. Then defines (based on the Oxford English Dictionary) that while misinformation is just “wrong or misleading information”, disinformation is known wrong information and more specifically refers to disinformation spread by governments. So, he also agrees for the element of “intention” in order to define and distinct both terms.

He (Bernd Carsten Stahl, 43) enriches his claims by presenting two unique approaches to the differences between misinformation and disinformation from two influential philosophers, Jürgen Habermas and Michel Foucault.

According to Habermas point of view, misinformation is not something defective, as he believes that is just a piece of information that is controversial and can be discussed. In an ideal context of communication between two parts, the first has to elaborate on the reasons he/ she supports that this claim is false, and the other part has to juxtapose that the claim is true. On the other hand, Habermas says that disinformation is problematic because the part that deliberately spreads it shows disregards for the recipient and thus the recipient is being misled. This would not be an issue if the recipient could juxtapose her/ his points and correct the one that spreads disinformation, but in most of the cases, this doesn't happen as the recipient does not have the capabilities to do so.

On another approach, Foucault says that the existence of difference between misinformation and disinformation is real and admits that there is a universal truth for all topics that are reflected by the percentage of bias, prejudice, and intention of the speaker and enriches by supporting that the finding of bias and intention it is not always an easy task. So, Foucault focuses on the discovery and why individuals are vulnerable to be deceived,

rather than identifying the purpose of organizations and individuals. So, his main support on this topic would be to offer a field of discussion and categorization on the well-intentioned and the malicious organizations of the general public.

2.2 Fake news

In this section, we define fake news, fake news taxonomy, and actors of fake news. We also explore the sources (including social media) of spreading fake news across the globe. Although there is not a unique and agreed definition for fake news, various writers and authors have tried to address this concept and by doing a Google search of the term, more than 1.3 billion results will be received. Thus, it is more than obvious that it is a topic/term that interests a huge part of the world, either from a scientific scope or for various other reasons for the social life. Below we present some definitions and opinions for the term.

Lilleker (48) supports that due to the plethora of definitions that exist in the literature for fake news, the diversity of the term might lead to being evolved as a generic term and in the same context Oremus (49) spars with the journalists for calling everything fake news. They both believe that it is a term that cannot be used in all aspects of misinformation. A group of authors agrees with Oremus in some of his definitions. More specifically, Plothow (2017, 52) defines as fake news a story totally invented from thin air to mislead on purpose and this approach is also being adopted by Allcott and Gentzkow (2017, 53) who define fake news as stories with no real basis. Similarly, the organizers of the Fake News Challenge (2017, 54) determine as fake news “a totally fabricated claim with an intention to deceive, often for secondary gain”.

As per Klein & Wueller (2017, 50), an important asset of fake news is the online medium that the fake story will emerge, as there are mediums that they are very favorable in creating false stories. Fake news can be defined as “the online publication of intentionally or knowingly false declarations of facts”.

As mentioned by Oremus (2017, 51), even if fake news is not equal with false and inaccurate stories, it comprises elements either “invented from thin air”, “completely fabricated”, “100% false content” or “with no factual basis”. He has also revised the term “fake” with “false”, in order to describe more accurately what is the meaning of the term

and he concludes that it is “information that is designed to be tangled with real news and is intentionally false”.

Dentith (2017,46) defines as fake news “the claim that a story is misleading”, while Gelfert (2018, 47) believes that -even if this is an interesting point of view- doesn’t structure things with the correct order. Gelfert claims that we should first examine the term “fake news” from its tactical perspective and expediency, along with its intention to deceive and then review -as per Dentith- the reputedly claim of the article or story based on the lack of some further information that when unveiled would change the status of the initial story. The tactical perspective is captured in the definition that Gelfert gives about fake news as “the deliberate presentation of (typically) false or misleading claims as news, where the claims are misleading by design”. More specifically he refers at the end of his definition the phrase “by design” which is connected with the tactical context of the creation of a fake news story.

Bakir and McStay (2017, 55) expressed a twofold definition, as per the following: “as either wholly false or containing deliberately misleading elements incorporated within its content or context” without excluding the possibility of a fake news story that contains accurate parts. In similar to the above approach, Lilleker (2017, 48) has given another twofold approach, separating traditional news media and social media. He defined fake news as “the deliberate spread of misinformation either via traditional news media or social media”.

Examining the issue from another aspect, Levy (2017, 56) has pointed out the role of the disseminators which is crucial, rather than the fake story itself. He defines fake news, the quotation of false stories that claim to be about the world in a context that is similar to credible media organizations. Thus, his main focus is the source of the content rather than the content itself. The above definition is akin with the opinion of Rini (2017, 57) who define as fake news stories that claim to be happening in the real world, mimicking the ways that credible media sources doing the job. Their creators know from the beginning that the content is false, and their main targets are the wide re-transmission of the false story and of deceiving at least some of the recipients. So, she also states the media sources with the term “mimicking”, and she enriches by adding the goals of the initial creators of fake news.

Rochlin (2017, 58) focuses on another part of the term and examines the biases that people might have, thus it is easier to be cheated by news outlets that publish content affiliated

with their beliefs and similarly decline or flag as fake news whatever is against their personal convictions. While Rochlin primarily examines the term from the biases context, he agrees with Rini and Levy and includes in his definition the role of the media source, by saying that fake news can be defined as “a knowingly false headline or story written and published on a website that is designed to look like real news site and is spread through social media”.

At this point it useful to refer that “fake news” is not a valence term. There are carriers that have dismissed the term and revert it with others. An example is a report by Digital, Culture, Media and Sport Committee (2018, 59) which substitutes the term “fake news” with the terms “misinformation” and “disinformation” and more importantly incite the UK government to follow the same approach. Likewise, (2018, 60) a report from Lund University ordered by Swedish administrative authority also modifies the term and suggests using “disinformation” rather than “fake news”, in an attempt of introducing a more comprehensive approach.

2.2.1 Types of fake news

This section covers different definitions, types, sources of fake news from the literature. After presenting the various definitions of the literature for fake news, it would be useful to proceed with a categorization of the different types of fake news.

According to various writers and authors (59, 61, 62, 63) an initial categorization of the types of fake news can be done as per below:

- *Propaganda* (61,62)

Propaganda includes the political dimension of fake news, as it is mainly created by political parties in order to serve specific political goals as part of an overall strategy. This is not a newly introduced concept, as it is used from World War, so as to influence the public opinion and alter election results.

- *News fabrication* (59, 61, 62)

News fabrication is defined as false content that has no real hypostasis and is intentionally created to deceive. The issue, in this case, is that this kind of content is published by partisan groups in websites and social media platforms, trying to mimic credible media sources so as to “hide” their biased identity. In fabricated news, we could also include the

imposter content that has similar characteristics and its validity can be searched through the sources and authors.

- *Satire* (59, 61, 62)

Satire is used in order to present content that is fake, under a humoristic approach. It is mainly created by comedians who deal with the current affairs and their actual purpose is not to deceive the public opinion, but to entertain it. Nonetheless, there is criticism that in some instances people are misled by satire shows.

Similar to satire, parody can be also seen as a type of fake news, which is commonly used by comedians in order to demean (mainly) political personalities.

- *Manipulated content* (59, 61)

Manipulated content (image, video, text) is defined as content that has been distorted for a purpose. There are various techniques for all kinds of distortion, but photos are the most easily manipulated type of content, either by adding/ deleting features or changing technical characteristics.

- *Advertising & public relations* (61)

This category refers to the advertising and public relations of specific items in an illegitimate way, under an original news statement for gaining profit.

- *False context of connection* (59)

False context of connection is the case where valid content is combined with false content. A common instance is the title of a story that does not represent the information written in the article.

(65-69) In this subcategory of fake news, we can include the term “clickbait”, which is widely used so as to describe eye-catching headlines that creates a “curiosity gap” for the readers and finally lead to the click on the link of the article. This approach would not have been connected with any bad definition if the eye-catching title of the article was reflecting the main body text content. Instead, in clickbait cases, the title is misleading so as to force the user to click the article’s link and this action leads to advertising revenues for the creators of the article.

- *Conspiracy theories* (62)

Conspiracy theories are defined as news stories that are presented in a way that has no factual proofs. They are used by various actors in order to harm politicians and cause outrage to the public for a person that has been victimized. (64) The most recent and well-known conspiracy theory happened prior to the 2016 US Presidential election, called “Pizzagate”. That story was implicating Hillary Clinton and her campaign leader John Podesta in a child sex ring. This fake story proved how dangerous a conspiracy theory can be. A man who believed that the story entered the pizzeria and start firing with his rifle. Hopefully, nobody was hurt, and the man was arrested, but this situation was an alert to all involved that such practices can lead to destructive results.

A similar categorization has been also followed by Zannettou, Sirivianos et al. (2018, 72), although they exclude some terms. They defined “false information” as the umbrella term, which consists of 3 groups. Their main group is “fake news” and they break it down as per below: fabrication, propaganda, imposter content and conspiracy theories.

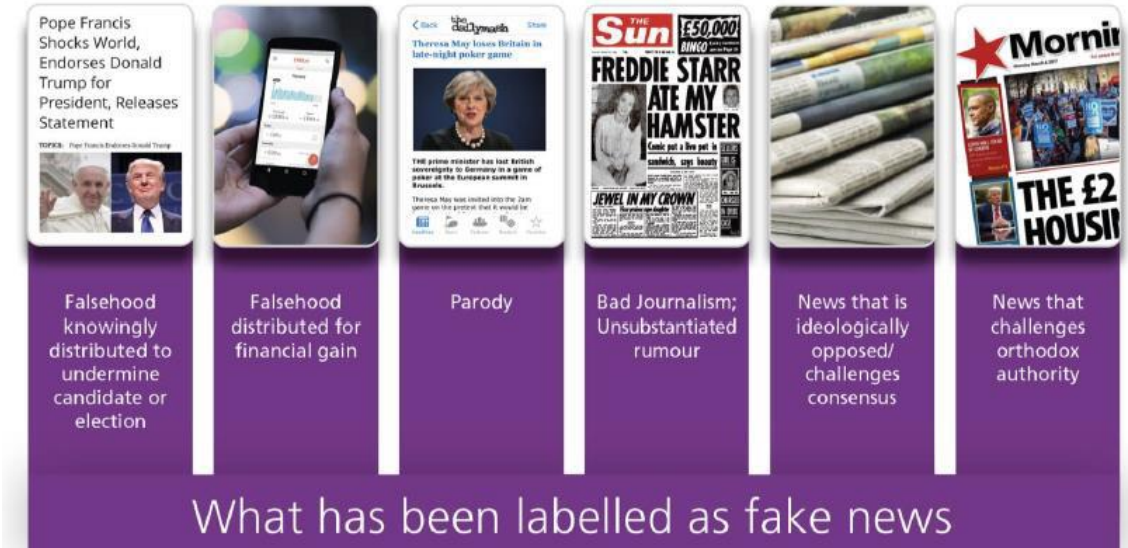
The above structure is useful for categorizing fake news, but below we briefly present some other views for the grouping of the term in order to enhance the level of the understanding of the term.

Tandoc Jr., Zheng Wei Lim & Ling (69,70) reviewed many papers from the literature and finally categorized fake news in 6 types: satire, parody, fabrication, manipulation, propaganda, and advertising. The common factor that these categories have, is the attempt made by the creators to present these types of fake news as real and finally deceive people either in high or low levels. In table2 we can see the level of deceiving, per sub-category.

	Author’s immediate intention to deceive	
Level of facticity	High	Low
High	Native advertising Propaganda Manipulation	News satire
Low	Fabrication	News parody

Table 2: Typology of fake news definitions (69, 70)

London School of Economics (71) has done a report on public policy responses on fake news and has separated the term as per the following classes: falsehood knowingly shared to undermine candidates in elections, falsehood knowingly shared for financial profit, parody, bad journalism/ unsupported rumors, news that is ideologically opposed and news that challenges orthodox authority. (Picture 2)

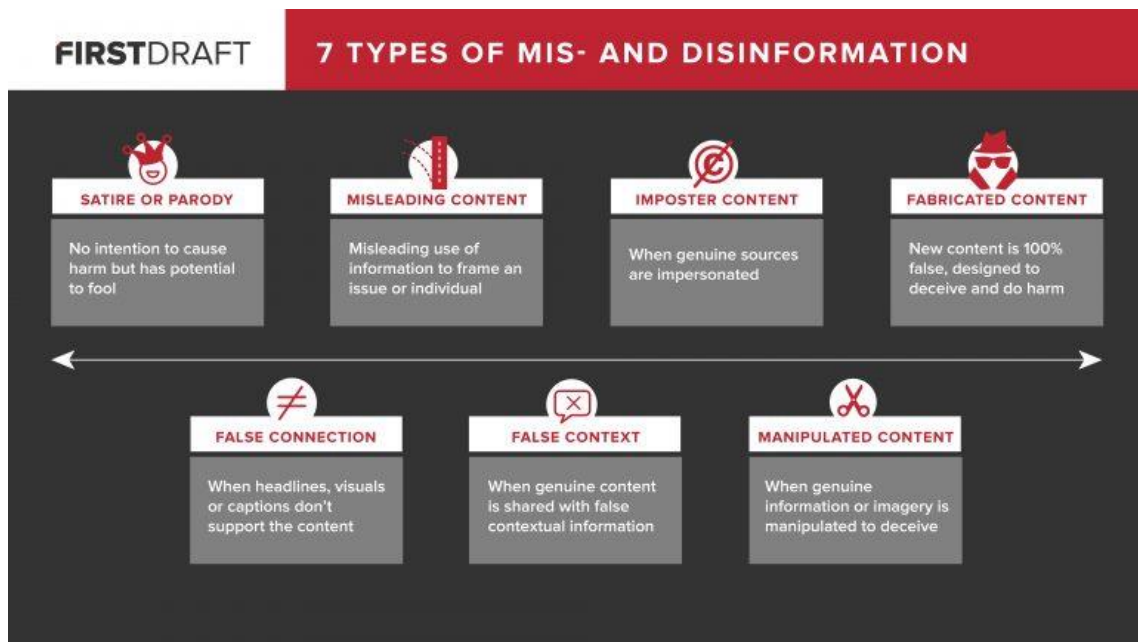


Picture 2: LSE Media Policy Project - The 6 fake news types (71)

Watts (2018, 73) also review the term fake news and its sub-classes, separating the term as per the following: satire or parody, misleading news, sloppy reporting, conspiracy theories and intentionally deceptive news, while Claire Wardle (2017, 74) follows a different approach and while she believes that the term “fake news” is not helpful as it cannot include the complexity of the problem. For this reason, she groups “fake news” in a broader spectrum, under misinformation and disinformation and break it down as per below from the most to least harmful (5):

- Fabricated content
- Manipulated content
- Imposter content
- False context
- Misleading content

- False connection
- Satire/ parody



Picture 3: 7 types of mis- and disinformation (73)

2.2.2 Fake news on social media

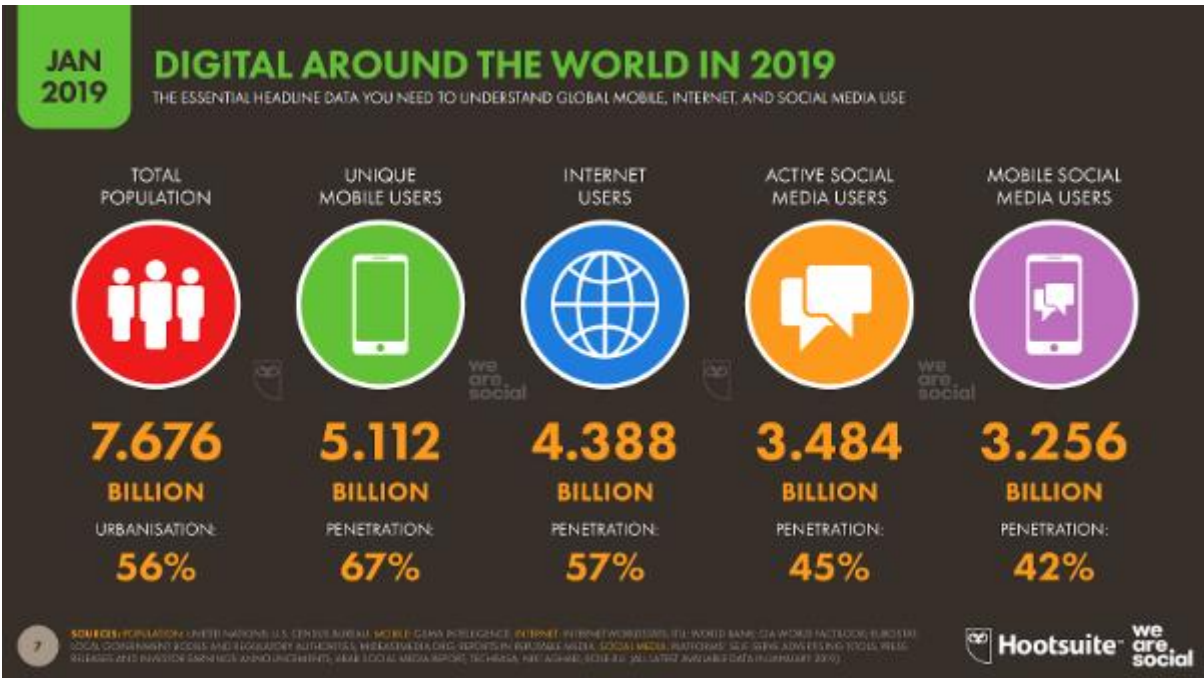
This section will describe the usage and patterns of fake news on social media platforms. In addition to this, we will explore the main challenges and key players that primarily influence the global community opinion in the selection of their political leadership through elections.

Over the last years, social media platforms have become the main channel of communication for many people around the world. Some of them use social media as a news website, but there is a big percentage that perceives it as a centre of personal relationships. (76) People nowadays spend plenty of time on social media, interacting with other people who share the same interests and beliefs with them and also use the platforms as a way to share news or opinions.

This is one of the main reasons that misinformation is spread so fast through social media (77), as in some cases a simple user with no specific background or renown can reach the same audiences, as credible news sites.

Furthermore, it is important to mention that over the last years there is an alteration from traditional media sources (newspapers, TV) to social media. One of the basic reasons for this revert is the financial aspect (social media are free in most cases), but additionally less time consuming for the users. Another important reason is the interaction context. Social media users can share content, comment, participate in debates, while the traditional news media sources provide a more static context with almost zero interaction. (81,82)

In picture 4 we may have an overview of social media penetration worldwide, with more than 3.8 billion active users all over the world.

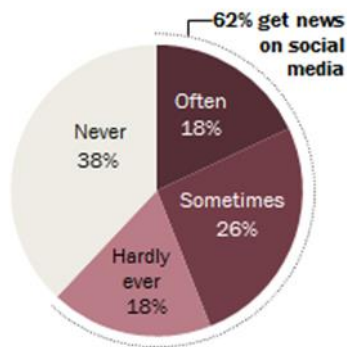


Picture 4: Digital around the world in 2019, January 2019, Hootsuite & We Are Social (90)

Additionally, picture 5 presents the acceptability level of social media on US citizens, for the news updates of the current affairs.

**About 6-in-10 Americans
get news from social
media**

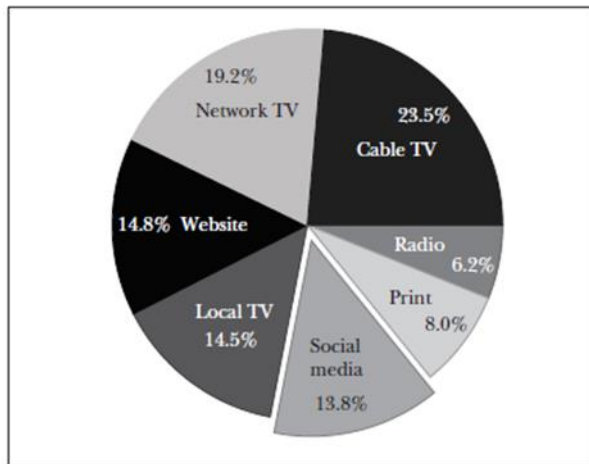
*% of U.S. adults who get news on a
social networking site ...*



Picture 5: Survey conducted 12/01- 08/02/2016. “News use across social media”. Pew Research Center (82)

On the other hand, the prosperity of social media sometimes causes serious problems, when the news quality and credibility is low and cannot reach the levels of traditional news media sources. Thus, it is much easier to diffuse fake news and reach large audiences for different kinds of purposes. (81)

This situation causes many problems, especially when fake news is connected with social media and use the platforms as a tool. One of the most remarkable examples of fakes news usage through social media is the 2016 US election, where fake news played a key role in the election of Donald Trump as President (53). More specifically, as per Gottfried & Shearer (2016, 78) 62% of the US adults are informed for the news through social media, (2016, 79) Facebook was the main channel of sharing fake news stories (pro-Trump in their majority) and (2016, 80) the most worrying part is that most of them were being believed by the users. In picture 6, it is clear that social media was one of the most important sources of election news, with percentages almost equal with websites and local TV (53).



Notes: Our post-election survey asked, "Which of these sources was your most important source of news and information about the 2016 election?" This figure plots responses. Observations are weighted for national representativeness.

Picture 6: Most important source of 2016 election news (53)

2.2.2.1 Key characteristics of fake news on social media

Below we present the most important features of fake news usage in social media platforms.

- *Malicious accounts for propaganda*

The nature of social media has given the ability to users to create easy, quickly and low-cost profiles that might be used for illegitimate purposes and in some cases are not human beings. Those accounts are called malicious and they consist of social bots, cyborg users and trolls (83). The common characteristic of all different kinds of malicious accounts is their intention to cause harm, but each of them with its own way. (81)

- *Echo chamber effect*

Social media gives to users a new way of receiving the news, contradictory to the past. Nowadays, news can be provided with a direct manner to users, instead of the traditional news where there is intermediation (2016, 84). Users are now exposed to news that is identical to their psychological state and beliefs, due to the fact that they have selected to follow specific people and pages based on them (2016, 85). Thus, social media users have an inclination to form groups based on their interests and opinions, creating the echo chamber effect. This effect enhances the procedure of fake news dissemination due to the following reasons (2016,86): 1) Social credibility, because people are more likely to be convinced for the accuracy and credibility of a story, when other people of the group

consider it as accurate and 2) frequency heuristic, as people are more possible to believe an information that they are often exposed and finally form a positive opinion for it (87, 88).

The result of this effect is the creation of ecosystems with limited information credibility, which increases polarization and misinformation spread (2016, 89).

2.2.3 Common practices in election

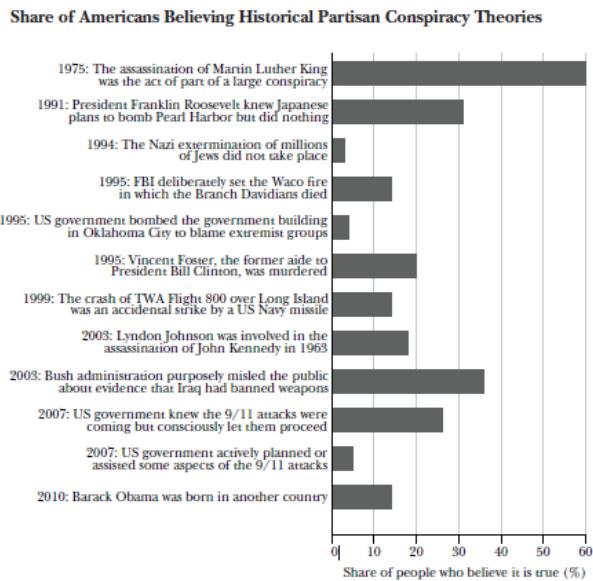
It is obvious that historically fake news is an important tool that is used for political purposes, but not directly by politicians. The question that arises at this point is why an individual or organization would start creating and sharing fake news. According to Subramanian (2017, 92) there are 2 reasons: 1) for financial gain through advertising, like the teenagers at Veles that were creating both pro-Trump & Clinton fake stories prior to the 2016 elections in US and 2) according to Townsend (2016, 93) due to ideological identification, like the Romanian who owned the website [endingthefed](http://endingthefed.com)³, stating that he did it so as to help Donald Trump.

These kinds of venues spend zero in obtaining credible information and additionally, they don't care to build relationships of trust among their readers (53).

In this section, we explain the common practices of politicians and political parties for spreading fake news during the election campaign. We present the concept of fake news and disinformation from its political aspect and more specifically what are the ways and tactics used by the political carriers in order to achieve their scopes. Moreover, we examine the usage of social media networks (Facebook & Twitter) during the 2019 EU election in some countries, based on the reach of various media outlets (professional news content, political news content, junk news content, etc.).

Fake news in politics is not a new issue that has arisen, but it has been a major topic for discussion after the 2016 Presidential election. It is said that in the months prior to the 2016 US election, the average American adult saw and remembered 1.14 fake news stories (53). Picture 7 shows some of the conspiracy theories that have been used before 2016, in order to influence the US voters.

³ www.endingthefed.com



Picture 7: Share of Americans believing historical partisan conspiracy theories (91).

2.2.3.1 Tactics of fake news spread for political purposes

Below we present some of the tactics used by fake news creators in order to deceive readers, after studying the reports published by BBC Monitoring (94, 95):

- *Memos designed to discord*

Low-cost memes creation or distorted images that show politicians degrading poses, in order to politically weaken them.



Picture 8: President Macron has appeared in memes containing false or distorted claims



Picture 9: Donald Trump distorted image



Picture 10: Bernie Sanders distortion

- *Coordinated inauthentic behavior*

This tactic was detected by Facebook which implicated 4 Italian groups with coordinated behavior. Those groups “liked” each other, had identical names and also numbers (each group had the same name and different number, i.e. The Great Deception 1, 2, 3, etc.) in case that some of them were being blocked.

Facebook finally decided the deletion of those pages with almost 2.5 million followers cumulative, either due to “false or duplicated” accounts violations or “spreading incorrect information”.

- *Resurfacing debunked stories*

In some cases, there are some stories that presented as news of the current affair, but in reality, they are past stories that have been counterfeited to deceive. An example of such a story happened also in Italy, prior to the election, accusing the mayor Chiara Appendino for transforming the city of Turin into a “halal city”. This story was debunked, as the original article was published in 2017 and referred to a meeting with tourism carriers prior to a forum of Islamic Finance.



Picture 11: Turin’s mayor was accused of turning it into “halal city”

- *Outdated content with topical hashtags*

Another tactic for political fake news spread is the usage of very popular hashtags in social media platforms, so as to connect bad publicity content with politics. An example is the use of the hashtag #EUElections2019 in a video showing a man vandalizing a monument in Italy, supporting that he is a Muslim immigrant. The video becomes viral with more than 2.7 million views. After the frenzy, was proved that the original video was dated in 2017 in a town of Algeria and various media reported that it was fake.

- *Conspiracy theories*

Conspiracy theories is another tactic that is widely used in politics. More specifically, conspiracy theories try to implicate politicians or other people that affect the political scene in stories that will have negative consequences for them. An example is a 16-year-old activist, Greta Thunberg, that was displayed in memes making an analogy of her with the daughter of Heinrich Himmler, known for his Nazi activity.

Greta Thunberg conspiracies



Picture 12: Climate activist Greta Thunberg has appeared in conspiratorial memes in several languages

George Soros had been also connected with her somehow by an article saying that he is the hidden person behind the activity of Greta Thunberg. The claim has finally debunked by Wired⁴.

George Soros was also implicated in other conspiracy theories, like the “Master Card” case, where Soros was appeared –by a Slovenian website- to give two million pre-paid Master Cards away to migrants in November 2018. The story was also debunked by the fact-checking website Snopes⁵.

2.2.3.2 How social media platforms were used for spreading fake news in 2019 EU election

In this section, we present a study published by the University of Oxford (96) on how social media was used prior to the 2019 EU Election, in order to circumvent the result of the election. The platforms examined are Facebook & Twitter.

⁴ www.wired.com

⁵ www.snopes.com

Twitter

As a general observation, we can say that Twitter had low percentages of fake news and negligible amounts of content published from Russian websites like rt.com and sputniknews.com. Opposite, the main sources of fake news circulated by regional or hyper-partisan media outlets and minor proportions of them were connected with political parties.

In picture 13, we present social media data from seven countries associated with professional news outlets, professional political sources, junk news content, other political news/ information, and other social media types.

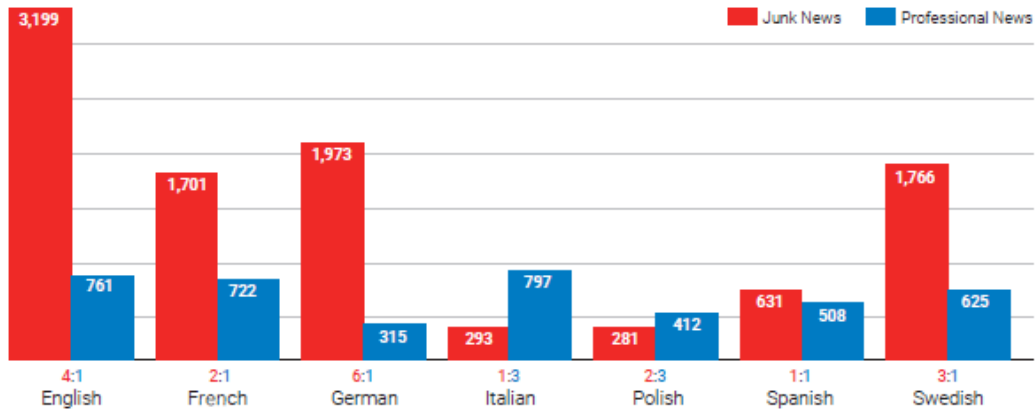
At this point, it is useful to mention that Poland had the highest volumes of junk news circulation (21,8%), while the second-highest country was Italy with a much lower proportion (8,7%).

Type of Source	English	French	German	Italian	Polish	Spanish	Swedish	Total
Professional News Outlets	20.1	51.5	28.1	38.9	13.0	44.6	54.8	33.9
Professional Political Sources	29.5	18.7	16.9	13.6	7.1	20.2	6.3	22.2
Junk News Content	1.4	4.0	2.8	8.7	21.0	1.6	6.7	3.6
Other Political News & Information	36.5	18.6	36.9	23.5	27.4	19.1	21.6	29.0
Other Social Media Types	12.5	7.2	15.4	15.3	31.5	14.5	10.6	11.3

Picture 13: Types of political news and information shared over Twitter (%) between 5 April – 20 April 2019, University of Oxford (96)

Facebook

On the other hand, Facebook has a different operation and it is a useful tool so as to measure the levels of influence that news articles have. In this platform and taking into account average stats, it seems that fake news outlets can achieve greater scores in the reactions buttons, compared with the credible media outlets that appear weaker in this part. The only countries where interactions of professional media outlets outweigh the fake ones are Italy and Polish. Totally opposite that the Twitter graph, where those two countries have the largest proportions of junk news sharing. In picture 14 we quote the stats.



Picture 14: Average Facebook interactions, per story (Shares, likes & comments) between 5 April- 5 May 2019, University of Oxford (96)

On the contrary, it is clear that credible media outlets outweigh the junk news sites on the overall public engagement numbers of the research. In picture 15, we can realize that even the most popular fake news outlets cannot reach the interaction levels of the least popular credible news sources.

Domain	Article Count	Like	Share	Comment
infowars.com	102	83,659	29,511	28,573
damocles.co	10	31,640	13,324	13,126
journalistenwatch.com	1,065	91,842	60,279	26,758
ilprimatonazionale.it	299	202,019	41,718	50,261
publiszer.pl	63	3,573	4,825	705
elcorreodemadrid.com	241	46,136	14,859	11,364
friatider.se	313	275,948	42,300	68,182
theguardian.com	8,420	12,520,907	3,398,042	3,305,281
lefigaro.fr	12,682	4,343,473	1,040,745	1,262,727
tagesspiegel.de	3,384	184,199	64,589	73,755
ansa.it	16,699	2,115,803	557,857	587,936
wgospodarce.pl	1,223	44,025	7,704	10,427
publico.es	2,812	2,252,549	771,029	541,380
svd.se	5,351	253,131	48,600	65,299

Picture 15: Total Facebook interactions, most shared junk (red)/ professional (blue) news sources between 5 April- 5 May 2019, University of Oxford (96)

2.3 Malicious accounts/ bots

This part mainly refers to the presentation and analysis of the automated accounts, called bots, which are used to propagate misinformation. We briefly refer to malicious accounts in a previous chapter, but in this one, we provide further analysis of the role of those accounts in elections.

The concept of bots is not new, as the first IRC (Internet Relay Chat) bot was created back in 1989 (102). The main idea before IRC bots creation was completing tasks for a person, while he was doing something else. After some years bots became popular and the first botnets were created, which were anything else than groups of bots communicating with each other or with a single botmaster. (105, 106) The word botnet comes from the words “robot” and “network” and describes how a group of programs can cooperate in order to perform malicious tasks.

Bots are software, which is created to perform simple, repetitional, robotic tasks and they have the ability to quickly reproduce messages, mimic themselves and mislead users that those messages come from real human accounts. When they are used to complete licit tasks, they provide credible information, but when they are used in order to deceive, they become malicious by sharing different kinds of fake news. (97,98)

(99) Social media is the main channel of operation for malicious accounts/ bots either through propagation algorithms or programmed accounts that are used for political purposes (political bots). (100) As part of political propaganda, those accounts tend to target users in order to influence conversations and form false beliefs based on fake news. (101) Political bots are globally used by politicians with different kinds of patterns. In 2014, prior to the Indian election, Narendra Modi seems that was using a pattern, as many of their 4 million Twitter followers were twitting the same message 24 hours per day: “I think Narendra Modi should be #TIMEPOY”, so as to help her win the Time Person of The Year award.

2.3.1 Types of bots

As per botnerds ⁶(103, 104), we can have a basic categorization of bots, based on their intention.

Good bots: Chatbots, crawlers, transactional bots, informational bots, and entertainment bots.

- *Chatbots:* Chatbots are agents that communicate with humans, through text messaging. They are programmed to respond like humans and normally are used for technology testing purposes.
- *Crawlers:* This type of bot is used to retrieve data from APIs or websites and interact based on the directions that its master has given. For instance, somebody can “hide” a website from specific search engines, by blocking their search engine spiders.
- *Transactional bots:* Those bots can be programmed in order to interact with systems on behalf of humans, by completing transactions.
- *Informational bots:* Bots of this category feature different kinds of information like breaking news or push notifications.
- *Entertainment bots:* In this category, we mainly feature game bots, like the bots in shooter games so as the user can practice and improve her/ his game or video game bots that you normally play against.

Bad bots: Hackers, spammers, scrapers, impersonators.

- *Hackers:* Hackers are initially designed to deceive people, spread malware and hack networks. They try to take advantage of weak security systems and inject malicious code into websites.
- *Spammers:* Spambots are designed to disseminate false content on the web and finally lead people to specific websites in order to gain traffic. Also, they have activity in blog posts and social media, by adding comments with links to spam sites.
- *Scrappers:* Scrappers are designed to steal data from websites. Then the scraped content is published for advertising reasons, i.e. to “catch” users searching for specific keywords.

⁶ www.botnerds.com

- *Impersonators*: Those bots are used mainly for political purposes and propaganda dissemination, by creating social media profiles that seem to be real, but they are fake.

2.3.2 Social bots in election

After the analysis of the general types of bots, below we present another sub-section of malicious account/ bots (if the bot intends to cause harm), the social bots.

A malicious social bot is a social media account that is manipulated by an algorithm, automatically produces content and interacts with other social media users with the intention to deceive (83). A week before the 2016 US election, researches show, that about 19 million bot accounts were posting either pro-Trump or Clinton tweets, a serious indication for the volume of automated activity and possible corruption of the result (107). Such campaigns are sometimes called “Twitter bombs” (110).

A strong indication that an account might be a social bot is the re-posting activity just a few seconds that the original post was published. Another sign is when a famous and influential person is mentioned (i.e. @realDonaldTrump) in debunked claims.

Research shows that malicious social bots tend to target users with many followers, in order to increase the chances that the content will reach large audiences, but surprisingly it is proven that humans do most of the fake news retweeting (deceived by bots), almost equal with their retweeting activity from human users. The previous claims are signs that human users can be deceived by malicious social bots. (108)

Social bots have been used for political aims, to manipulate the stock market, scrape personal data and diffuse misinformation. (109)

2.3.2.1 Detection of social bots

(109) In this section a social media bots taxonomy is provided, separated into 3 sections, although in some cases it is not easy to clearly divide them as some of their features are mixed:

- Detection based on social media data (graph-based detection), where detection strategies are done based on social graphs that can reveal the connections between social bots (sometimes called sybils). (111)
- Crowdsourcing social bot detection: (112) Wang et. Al introduced the crowdsourcing detection method, by using data from Facebook and Renren (a Chinese social media

network) and assigning the work of detection to humans rather than the machines, from simple information of their profiles.

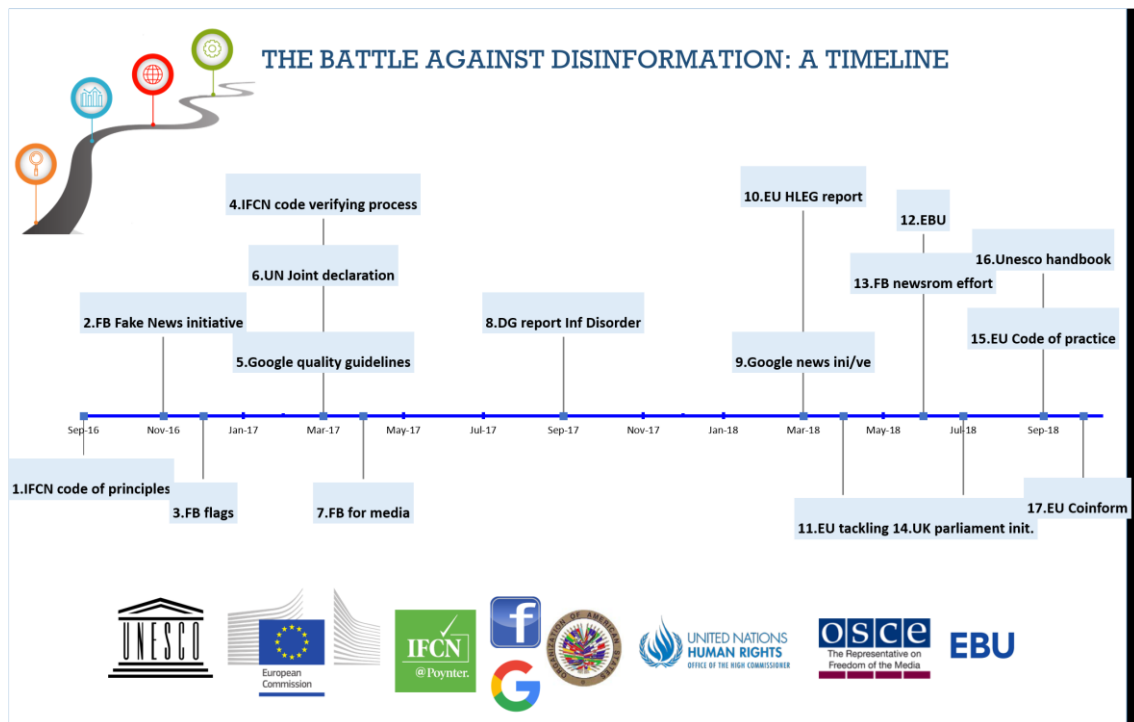
- Feature-based social bot detection: This method works by using machine learning techniques, based on the behavioral patterns of the social bots. Various classes are automatically created depending on the activity of the bot.

2.4 How to tackle fake news

In this section, we will describe key approaches to tackle the disinformation including fake news in elections. We have included 3 axes/ subchapters for the tackling of this phenomenon.

The first refers to the measurements taken by governments, the second to the EU code of practice that contains the specific actions that EU has done and is currently doing and the last to the fact-checking tools that are widely used by various organizations in order to assess the validity of information shared through the web.

Under this context, different stakeholders have taken action for this important issue, either co-operating - in some cases- for the commonweal or by nonrecurring actions. In picture 16 we present some of them which are further analyzed in the below sections.



Picture 16: Disinformation initiatives timeline (69)

2.4.1 Governmental measurements

This subchapter mainly refers to the measures that have been taken at the governmental level for misinformation tackling in social media.

After 2016, about 43 governments have either suggested or executed various measurements in order to provide solutions for the huge problem of disinformation. We can do a basic categorization of the measurements, as per the following categories (113):

- Measures targeting social media platforms
- Measures targeting offenders
- Measures targeting government capacity
- Measures targeting citizens, civil society and media organizations

Measures targeting social media platforms

We break this category down into 3 sub-categories, as per below:

- *Content takedowns by social media platforms*

As social media has become the main platform for political information, governments can nowadays remove (after communicating with social media companies), block and filter content that has been considered malefic, either in democratic or authoritarian regimes. Many countries work in this direction and try to create the legislative framework in order to become feasible for social media companies to track and remove harmful content. The process is executed under the supervision of each government.

- *Advertising transparency*

Despite the fact that in most countries there are clear regulations for print advertising in politics, the online part of political advertisements has still progress to be made. Transparency improvement remains a major issue for online political advertising and some countries demand from the social media platforms providers to reveal to users which political parties or politicians have paid to be advertised. Also, social media companies try to block exterior funding for indigenous campaigns.

- *Data protection*

Data is an important asset for political campaigns through social media, including mean-spirited campaigns, and are used for targeting purposes. Millions of social media users have been exposed to manipulative content over the last years, so even the companies are

now able to understand it and treat it as a major problem. Although it has been accepted that this issue has to be tackled, there are still countries that have not taken any measures yet, but there have been also positive steps in this direction. The new General Data Protection Regulation (GDPR) which is valid in Europe from May 2018 is a sign of improvement, but still, many more actions have to follow at a global level.

Measures targeting offenders

We break this category down into 2 sub-categories, as per below:

- *Criminalization of disinformation and automation*

Criminalization of misinformation diffusion is used by some countries as an extra measure of protection. Financial fines are imposed on violators, but also imprisonment in some cases. Additionally, there are countries that try to solve the problem of automation (bots campaigns), by penalizing the automated activity of political parties or individual politicians.

- *Expanding the definition of illegal content*

As already described, the current legislation has some gaps regarding the comprehensive tackling of online disinformation. Under this context, the action is planned for reconsideration of the existing legislature, devoted implementation and innovative definitions of illegal online content. For instance, Australia has created a strict framework of punishments for non-complaint users.

Measures targeting government capacity

- *Parliamentary inquiries and Congressional hearings*

Parliamentary inquiries are the governmental tool for situations that the existing legislation has become inadequate. They are used in order to initiate the procedures of changing or correcting any defective part of the regulation in use and many countries have followed this approach so as to comprehend the social media effect in democracy. Furthermore, the US has applied Congressional hearings in order to look into the Russian implication in the 2016 Presidential election.

- *Security and defense*

The foreign involvement in the domestic election has raised also cybersecurity and defense issues which are handled by the appropriate governmental authorities so as to maximize the security levels. Measurements such as systematic observation of the web, offenses identification, strategic analysis of the offenses, reporting, and debunking are already taken by some countries.

- *Monitoring and reporting*

Some countries work on different dimensions by creating portals that users can point out and report pieces of misinformation. The G7 countries have initiated the establishment of a Rapid Response Mechanism for disinformation reporting, especially for the election. Also, Italy has made a portal to monitor misinformation dissemination where citizens can report any piece of information that they consider as fake, in order to be assessed by the appropriate authorities.

Measures targeting citizens, civil society and media organizations

- *Media literacy and watchdogs*

The part of media literacy and watchdogs refer to the long term strategy that should be followed by governments in the next decades. In this context, the harmful usage of social media can be tackled by enhancement of digital public literacy, skills in browsing on the web and quality assessment of the available online content. Many countries have started working on this direction by funding long-term strategic programs against misinformation.

- *Media accreditation and journalistic control*

This section has a bipolar meaning. When governments control media, various negative consequences may arise, as guided journalism that serves specific goods of the government without being impartial. On the other hand, setting up rules and validating the media quality in a transparent context can increase the credibility of information and the citizens' sense of safety on the web.

2.4.2 EU measurements

In this section, we explore the EU practices against misinformation and its compliance status. It is pertinent to mention that these codes of practices were devised in a collaboration with social media platforms which include Google, Facebook, and Twitter, etc.

EU Code of Practices on disinformation in cooperation with Google, Facebook and Twitter (116)

One of the major actions that the EU has taken to counter disinformation, was to cooperate with the social media giants (Google, Facebook & Twitter) and take decisions regarding the problem. To this end, these social media platforms are committed to publishing monthly reports on the actions taken and the progress that they have done on disinformation tackling. Those actions have to be fully compliant with the EU Code of Practice against disinformation and they mainly (not exclusively) concern political disinformation on election regarding scrutiny of ad placements, political ads transparency and integrity of services. Below we briefly present the results of those measurements during May.

Google

Google reported (116) that has taken 16.960 actions on EU Google ads accounts regarding scrutiny of ad placements, for infringing the company's policies on misrepresentation and another 5.465 actions for violations of inadequate content.

As regards political ads transparency, Google approved for launching 174 out of 676 political campaign applications. Most of the applications failed due to the fact that were not compliant with the required documents needed. More than 50.000 ads were blocked to be displayed because they fail to meet the verification specifications.

Concerning the integrity of services, YouTube removed over 860.000 channels for spam, deceptive practices, and scams policy infractions. Also, another 60 channels were removed for policy on impersonation violations.

Facebook

As regards the scrutiny of ad placements, Facebook (116) didn't publish any data on low-quality ads removal and took back its intention to delete deceptive, misleading and false content. For this reason, the EU Commission incited Facebook to provide the data on a regular basis, in order to become feasible to constantly monitor and act when necessary.

Regarding political ads transparency, Facebook published an Ads Library report which gives information on political ads spending and issue-based ads in the EU, including information for each advertiser, the "paid for by" disclaimer, the total amount and a link to the original advertisement. From the end of March until the end of May almost 20 million political ads were spent across the Member States.

Concerning the integrity of services, Facebook removed some pages, accounts, groups and also confine users who have violated Facebook live.

Twitter

As far as the scrutiny of ad placements is concerned during May, Twitter (116) denied 1.428 ads for violating with its Unacceptable Businesses Practices. Additionally, it did not allow 1.975 ads to be displayed across the EU for not complying with its Quality Ads policy, which should include user bio, destination URL, content (image, video, text) and lucidity. As regards the political ads transparency, Twitter dismissed 503 political ads due to the fact that it did not meet the certification process. Moreover, Twitter provided a report with the countries which run political campaigns and a breakdown per Member State. Although they recalled that the operation of the ATC (Ads Transparency Centre) will continue, the EU Commission called them to create an issue-based policy for transparency improvement.

Concerning the integrity of services, pre-challenged 9.775.179 accounts that might be fake or spammy and received 344.987 reports by users about spammy accounts. Also, they revised their election integrity policy by forbidding 3 categories of content. 1) Misleading information on how to participate in the election, 2) voter intimidation and 3) false or misleading affiliation.

The "HLEG" report on online disinformation

Tackling the dissemination of misinformation is one of the most important projects for the European Union, in order to defend the democratic values that have introduced and

represents. Thus, the EU is obliged to do its very best so as to tackle the dissemination of misinformation and protect its citizens from being exposed to harmful content (114). In order to achieve the above, EU formed a high-level group of experts (“the HLEG”) for the creation of a report (115) that includes the main pillars against misinformation as per below:

- *Transparency enhancement of online news*

Transparency is a major issue for improvement in the digital world of information. By increasing transparency, we empower the media literacy on both citizens and journalists sides, thus all concerned parts will be able to evaluate news quality and the whole process of news production, in a wider spectrum. For those reasons the European Commission works in cooperation with the Member States in the below axes, in order to upgrade transparency levels of online news:

- i. Increase transparency of funding sources

All online pieces of information have to clearly mention its creator, in order to be feasible for the readers to identify the person who is behind each news article. Also sponsored content has to be totally identifiable, especially in terms of political advertising.

- ii. Increase transparency of online news sources and journalistic processes

Online transparency indicators have to be created, so as to ensure users that the content is accurate, credible and qualitative. Investments in fact-checking and journalistic training are some of the fields that need improvement to achieve the target. Additionally, the visibility of accurate content has to be enhanced, in order to weaken the disinformation sources. In this direction, news websites may reveal the way that their algorithms are developed without biased motivations.

- iii. Increase transparency and efficiency of fact-checking practices

Fact-checking practices are another major axe to be improved by the collaboration of fact-checking organizations, verification organizations, and newsrooms, all of them, under the EU guidance. The outcome of this effort should be an “open” fact-checking market, totally excluding monopoly practices. In this direction, independent European Centres could support this attempt and ensure the interdisciplinary and fact-checked based research, while online platforms must be able to provide privacy-compliant access to data for the recognition of disinformation creators and evaluation of fact-checking practices.

- *Media and information literacy promotion*

Media and information literacy have become, nowadays, the starting point for critical thinking progress concerning all kinds of information. Thus, the main objective of this pillar is the life-long education starting from young kids to older people. To this end, the HLEG suggests the below for the improvement of media and information literacy:

- i. Promoting a reassessment and adjustment of educational policies

Media and information literacy are key objectives for tackling disinformation and this point of view has to be adopted at a national level, in order to start being part of the schools' curriculums. Under this context the teachers should obtain the educational background to impart the knowledge, thus governments have to provide their assistance by mandating teacher training colleges.

- ii. Support for information and literacy programs for citizens of all ages

Support of information and literacy programs should be encouraged for all ages and demographics groups, instead of being only a privilege of the younger ages. All relevant parts should work and collaborate to dismiss silos and maximize efficiency and more specifically the European Commission may support attempts in this direction.

- *Tools development for users and journalists empowerment*

Users' and journalists' empowerment is another key component to counter disinformation. The accomplishment of this target can be achieved with the deployment of tools that provide quality signals identification. Below we quote the main fields of action:

- i. Users (citizens) empowerment

Different kinds of applications should be developed to strengthen users and provide them the ability to better check the online content that they are being exposed to. At this end, client-based interfaces may be created and allow users to access content according to the quality signals. This would be the initial step for the basic control of information that users are exposed to.

- ii. Journalists empowerment

Nevertheless, efforts for journalism empowerment should not hesitate. By strengthening, credible media representatives citizens level of trust increases, thus accurate media outlets are rewarded and supported to keep up the good work. Professional automatic content

verification tools for audio-visual and text-based reports published online are required to empower media outlets' reputation. Furthermore, training and media innovation may have a significant impact on the success of the project and should be treated with increased attention.

- *Safeguard the diversity and sustainability of the European news media ecosystem*

Taking for granted that producing disinformation is easier and cheaper than accurate news, it is crucial to create an information framework where any form of censorship will be dismissed. In order to achieve this target, all relevant actors should work with a long-term vision and protect the financial sustainability of the news media ecosystem. Below we present the axes of improvement:

- i. Actions at European level

Taking as landmark the US funding strategy (120 million USD) for the protection of the election prestige from foreign interference, the HLEG expects equal level funding, through Horizon 2020, to be used mostly in empowering qualitative news media, fact-checking organizations, training journalists, sources verification, disinformation tracking, investing in media literacy and research programmes.

- ii. Actions at the national level

HLEG fully supports news media independence and does not think that governmental control will have a positive impact to counter disinformation, thus no interference by public authorities is encouraged. Also, any available public funding approved by the State Aid had to be used carefully and under the EU Member States protocols.

- *Promote continued research on the disinformation impact in EU through monitoring and reporting*

The above-mentioned pillars have to be set under a centralized context so as to maximize the results and apply the strategy against disinformation in an effective manner. Below we present the main axes:

- i. A structured implementation framework

The HLEG suggests that a structured plan, specific timeframes for evaluation, collaborating of all relevant stakeholders and continuous evaluation are the very basic steps that need to be implemented to set the working framework.

ii. Scope of a general European Code of Practices to counter disinformation

In order to create a European Code of Practices for tackling disinformation, it is essential to adopt a multi-dimensional approach by:

- 1) Clearly identifying the relevant stakeholders
- 2) Set up rules for each group of stakeholders based on the HLEG agreed framework
- 3) An evaluation mechanism development for the processed measurements
- 4) Safeguarding coordination among the EU centres
- 5) Identification and filling of the existing gaps
- 6) Avoiding the substitution of self-regulatory systems
- 7) Synchronization of mechanisms already in use

iii. A multi-stakeholder engagement process

A group of all relevant stakeholders should be formed including online media, news media outlets, journalists, content creators, advertisers, and fact-checkers, in order to be feasible for each of them to contribute to disinformation tackling.

iv. Key principles and roadmap to guide the Code of Practices

The key principles below, have been approved and agreed between the HLEG committee.

- 1) Platforms should apply the follow-the-money principle and discourage any motivation of disinformation diffusion for profit
- 2) Platforms have to guarantee transparency and public accountability, taking into account human privacy, freedom and media multidimensionality
- 3) Sponsored content has to be clearly identified
- 4) Platforms should give access (GDPR compliant) to data to fact-checking organizations
- 5) Platforms should collaborate with public and private news outlets and provide accurate and credible news to users
- 6) When feasible, platforms should combine news with related news recommendations
- 7) Platforms should be easy-to-use and easily connected with fact-checking websites

- 8) Platforms that are created based on users interactions should be protected by systems so as to avoid being abused
- 9) Platforms should give access to their functioning and algorithmic data to academic researchers, so as to help them discover a common approach to tackle the diffusion of disinformation

v. Independent and permanent evaluation

A permanent review mechanism should be developed so as to constantly monitor the progress of the Code of Practice

vi. Coordination with the European centres for research on disinformation

The HLEG believes that the achievement of the suggested measurements is totally connected with the establishment of the European centres, which are going to be leaders of interdisciplinary projects against disinformation

2.4.3 Fact-checking

In this section, we will study the role of fact-checking tools in disinformation. This work will help us to determine the role of social media through the use of fact-checking tools, and how they contribute overall to disinformation tackling.

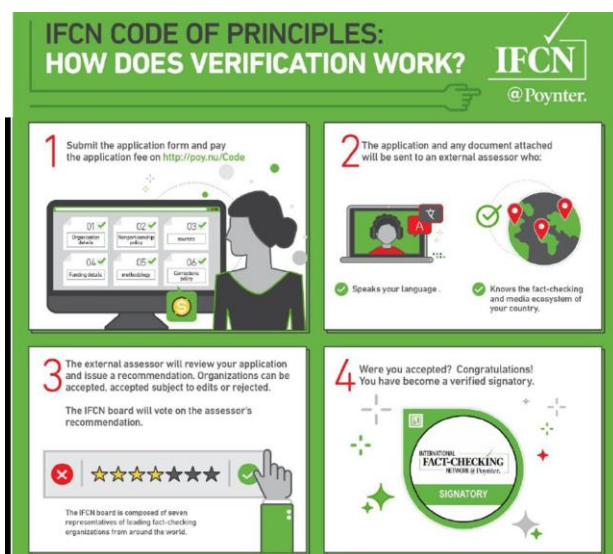
The term “fact-checking” refers to the process of converting an incomprehensible fact to something understandable (117). Taking this claim as a basis a contemporary model has been created, for the fact-checking term, -mainly- regarding the credibility of political claims and statements (118). Thus, the main objective of fact-checking organizations nowadays is to conclude whether a claim is accurate or not and then inform the public, improve political speech and motivate other journalists (119, 120). In order to succeed on this, fact-checkers are highly dependent on other media outlets that might spread their analysis through the media ecosystem (118,119) and through this wider media framework fact-checkers have to be very careful on the media that will choose to interact in order to avoid implications with partisan media outlets (119, 120).

Code of Principles

The International Fact-Checking Network (IFCN) has created a Code of Principles which consists of 35 organizations from 27 countries, as signatories. This code is mandatory to be followed by all signatories to avoid partisanship and promote fairness and transparency (123, 124). The Code comprises some commitments as per below, for all signatories (122):

- Non-partisanship and fairness
- Transparency of sources
- Transparency of funding and organization
- Transparency of methodology
- Open and honest correction policy

Those principles have to be followed by all organizations publishing credible and non-partisan reports on the accuracy of various claims in regard to societal issues. (125) The importance of the Code has been also mentioned by Facebook and Google. Facebook obligates -as a minimum requirement- its fact-checkers to become signatories of the Code and Google marked fact-checked claims produced by signatories in its search engine results. (126) Due to the acceptance of the Code, the IFCN decided to develop a verification process, in order to assure that the minimum standards will be kept. When a signatory accomplishes the verification process, it has the privilege to be considered part of the IFCN including the positive impact for its reputation. In picture 15 the verification process is visualized.



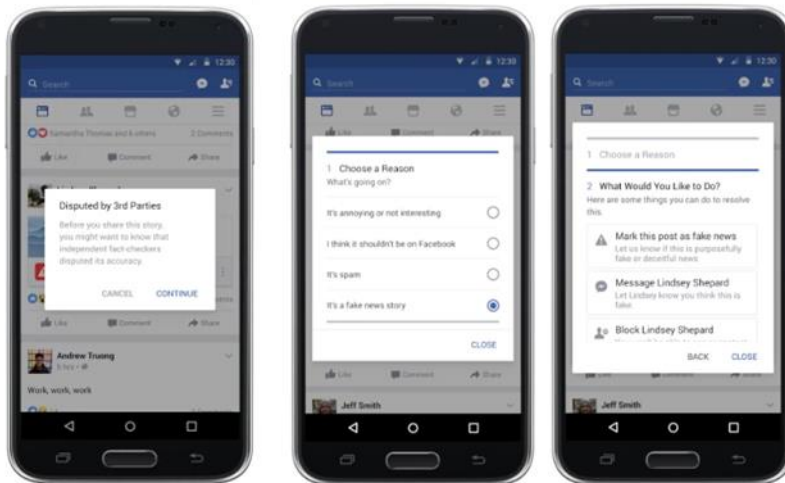
Picture 17: IFCN Code of Principles verification process (126)

Facebook and Twitter

Both platforms have attempted to use fact-checking tools in order to provide solutions for disinformation. Below we may see what has been done by each of them and what are the plans and the challenges for the future.

Facebook (127)

Facebook has started cooperation with 3rd party fact-checking organizations, in order to be feasible for the company to find misleading content and immediately remove it i.e. natural disasters images shown as a present-day event (129) and at this end they introduced a fact-checking program in Karnataka -a small Indian state- to the first test in and then scale it up for other countries. (130)



Picture 18: Facebook warnings to fake news (128)

Also, the fact-checking website boom⁷ checks posts with controversial content and a machine learning algorithm have been created for the revelation of false content based on users' feedback. Then fact-checkers have to check the content and advice for the misleadingness of it. (130)

⁷ www.boomlive.in

Twitter (127)

Twitter has also done partnerships with fact-checking organizations like Fact Popup and Hoax but still tries to understand how fake news can be easily spread to huge audiences and where are the original sources exist. (131)

As regards to fact-checking solutions of the problem they have thought to develop AI mechanism and also is being discussed to introduce the edit option, although this solution can have negative consequences because an original tweet that has been retweeted in its original state, is edited, then retweeted and finally the same tweet is shared 2 times with different content. (132)

Summary matrix of fake news tackling

In table 3, there is a summary of the 3 main pillars of fake news tackling and their sub-categories. All of them contribute separately in the attempt of fake news tackling and can be characterized as prerequisites for confronting the problem in a comprehensive manner.

Fake news tackling measurements								
	Social media	Offenders measures	Government capacity	Media/citizens	EU CoP ⁸	HLEG report	CoP ⁹	Facebook & Twitter
Government	✓	✓	✓	✓				
EU					✓	✓		
Fact-checking							✓	✓

Table 3: Summary matrix of fake news tackling (113, 116, 122, 127, 129, 130-132)

⁸ Code of Practices

⁹ Code of Principles

3 Data and methods

3.1 Research questions

In the research methodology section, we will define the research problem, goals research questions and selected research approach. This section will also cover our search process which we will opt to find relevant research publications from the well-known electronic libraries and other sources.

- 1) RQ1: How does the literature review help us to define and further understand some of the most important concepts of misinformation?
- 2) RQ2: How do social media data extraction tools and sentiment analysis help us to determine the politicians' attributes in terms of negative-hate speech, neutral or positive?
- 3) RQ3: How do we perform validity and accuracy checks on web articles, by using fact-checking websites?

3.2 Data

The first part of the analysis is related to social media platforms. These platforms play an important role in the election as part of the political parties' strategy, thus that was the main reason for this kind of analysis choice. On the other hand, the 2nd part of the analysis refers to the fact-checking tools and platforms which is indissolubly connected with the disinformation tackling.

The analysis/ findings part of this thesis is done by collecting secondary data (already existing data and not questionnaires, surveys or interviews) from various sources. Our main data sources were the social media accounts (Facebook and Twitter) owned by the four leaders of the EU political parties that dominate in the election, on May 26. Further to the social media part data collection, and analysis for the fact-checking tools is presented. We try to quote how the fact-checking tools can facilitate the process of misinformation tackling, by providing an introduction of some tools that either fact-check - mainly- fake articles from non-credible sources regarding the election or assessing the validity and credibility of the websites that spread the news.

Total tweets and Facebook posts

In figure 1 we present the following two (02) graphs regarding the total tweets and Facebook posts for all leaders, before the extensive analysis of the social media graphs. Iratxe Garcia Perez is the leader who dominates on Twitter with more than 900 tweets, while Manfred Weber has posted more times than any other leader on Facebook.

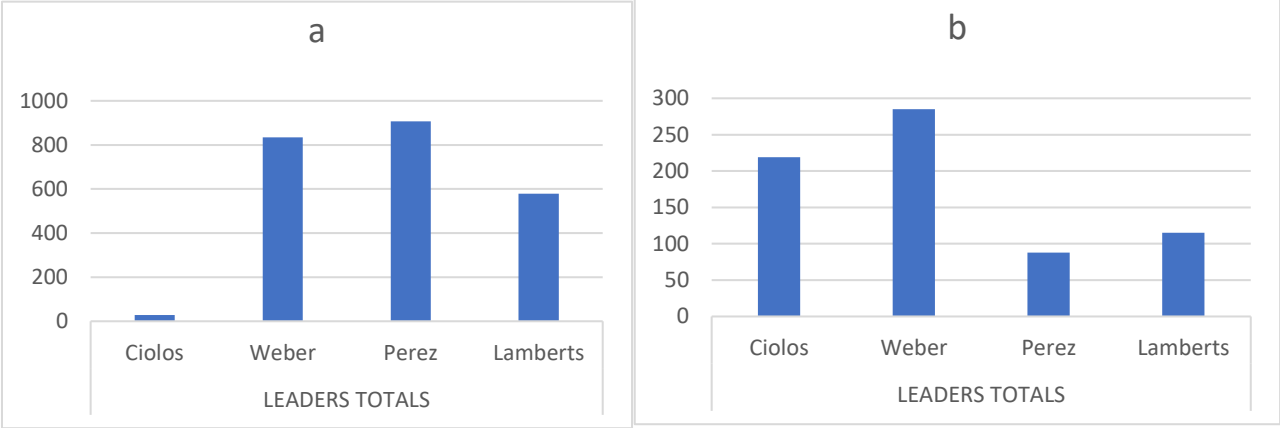


Figure 1: a) Total number of tweets and b) total Facebook posts per leader

3.3 Methods

The research methodology of this thesis can be called “case study”. A case study is a research methodology that presents the results of an analysis of various behaviors of persons or groups¹⁰. In this thesis, we selected 4 political leaders in order to complete a -post-analysis of the 2019 EU election, related to misinformation. We selected those 4 leaders as they represent the leading parties of the European parliament, as per the 26th of May results. Additionally, those parties represent almost all political beliefs sides and this also a factor that leads to select those parties and leaders.

Fact-checking - text analysis

The tool textalyser¹¹ can be used by either uploading a file for analysis or pasting the text. The tool analyses each word of the requested text and provides the ranking of the

¹⁰ <https://www.pressacademia.org/definition-of-case-study/>

¹¹ www.textalyser.net

frequency of each word. The 1st column (Word) refers to the specific word found into the text, the 2nd column (Occurrences) refers to the exact number of words found into the text, the 3rd column (Frequency) refers to the frequency percentage of each word in the text and the last column (Rank) shows.

Frequency and top words :

Word	Occurrences	Frequency	Rank
you	11	2.9%	1
news	8	2.1%	2
media	7	1.9%	3
misinformation	6	1.6%	4
your	5	1.3%	5
what	4	1.1%	6
get	4	1.1%	6
facts	4	1.1%	6
help	4	1.1%	6
how	4	1.1%	6

Picture 19: Example of a text analyzer tool with all above-referred columns

Twitter credibility

MisinfoMe¹² is a tool that checks and assesses the credibility of Twitter profiles, based on some specific elements. The tool has been developed as part of the Co-Inform EU project and its main target is to measure the impact of misinformation in social life. The application executes some steps in order to deliver the results. Below the steps:

- Retrieval of the tweets, based on the search term
- Extraction of the related URLs
- Score provision to the account, based on the assessment of the URLs against the credibility model. More specifically, the URLs are cross-checked with fact-checkers results and based on their (fact-checkers) evaluation, the final score is assigned

In this thesis, we present the analysis of the 4 leaders' Twitter profiles, using misinfo.me. The tool analyzes a number of tweets from any Twitter user (4 leaders in our case) and

¹² www.misinfo.me

finds the number of web links found in the tweets. Then evaluates the quality of the links, based on their website origin and provides a ranking of the profile credibility. Each website's credibility is assessed by fact-checkers and external partners.¹³

Foller.me is a tool that receives requests for Twitter profiles analysis, by checking tweets content and basic statistics. The below metrics are used by the tool in order to provide the results:

- Basic information on Twitter profiles
- Statistics
- Topics, hashtags, and mentions metrics
- Insights (tweets, retweets, tags, replies, mentions, links and media)¹⁴

3.4 The trustworthiness of the study

In order to complete this thesis, we use the following scientific sources and journals to obtain literature, and insights regarding the subject matter, and its associated areas:

- The Philosophy of Information Quality
- Journal of the American Society for Information Science
- Journal of Philosophy
- Journal of International Information Management
- Journal of Information Technology Theory and Application
- Journal of Internet Law
- Journal of Economic Perspectives
- Journal of Pragmatics
- Journal of personality and social psychology
- International Journal of Communication

¹³ <https://misinfo.me/misinfo/about>

¹⁴ www.foller.me

In this section, we conduct an experimental analysis of the main social media activities of EU political parties and the impact of some fact-checking tools that we discover. The analysis timeline refers to activities during the pre-election period (January- May 2019). Our approach will be based on the following steps:

- i. Collect social media data (posts, tweets) from all leaders by using data scraping tools
- ii. Conduct sentiment analysis to both Facebook posts and tweets in order to find different patterns and behaviors regarding the social media strategy of each leader
- iii. Explore various fact-checking tools trying to discover ways to tackle misinformation

3.5 Social media data analysis

In this section, we conduct an analysis by collecting and analyzing social media data from Facebook and Twitter, from the accounts of all leaders. In this way we try to quote and explain the behavioral differences among all leaders, then analyze the results and extract conclusions.

Facebook data have been collected from 1/1/2019 until 25/05/2019, one day prior to the election. We retrieved Facebook data by using the data-miner¹⁵ tool and scraping text, links, images, and reactions. The reactions (likes, love, etc.) have been collected manually as the tool could not extract the separate reactions by itself.

Regarding Twitter data prior to the election on May 26 (also from 1/1/2019 until 25/05/2019) we collected all four leaders tweets and reactions and furthermore 1k tweets with the hashtag #EUelection. We have chosen this hashtag in order to find the most relevant tweets, regarding the 2019 EU election, during the most intensive pre-election period. Also, we collected data with tweets mentioning each of the leaders (i.e. @ManfredWeber, @CiolosDacian, @ph_lamberts, @IratxeGarper), so as to comprehend the opinion and the general view of Twitter users for the leaders. Below we present the graphs and the conclusions of the analysis.

We have conducted sentiment analysis in order to categorize positive, negative and neutral tweets and also the compound score. The positive, negative and neutral scores are ratios for proportions of text that fall in each category and are very useful metrics for

¹⁵ www.data-miner.io

multidimensional analysis of a text. All these 3 metrics add up to 1. The compound is computed by adding the score of the meaning of each word, with a range from -1 (the most negative) until 1 (the most positive). This metric can be used for the composite analysis of tweets or Facebook posts that contain various lexicon content.¹⁶

This part of the thesis covers the RQ2 “Research Question 2” (Chapter 3.1) and provides some results on how social media platforms can assist us in politicians' behavior analysis, by using sentiment analysis.

3.5.1 Twitter

Dacian Ciolos

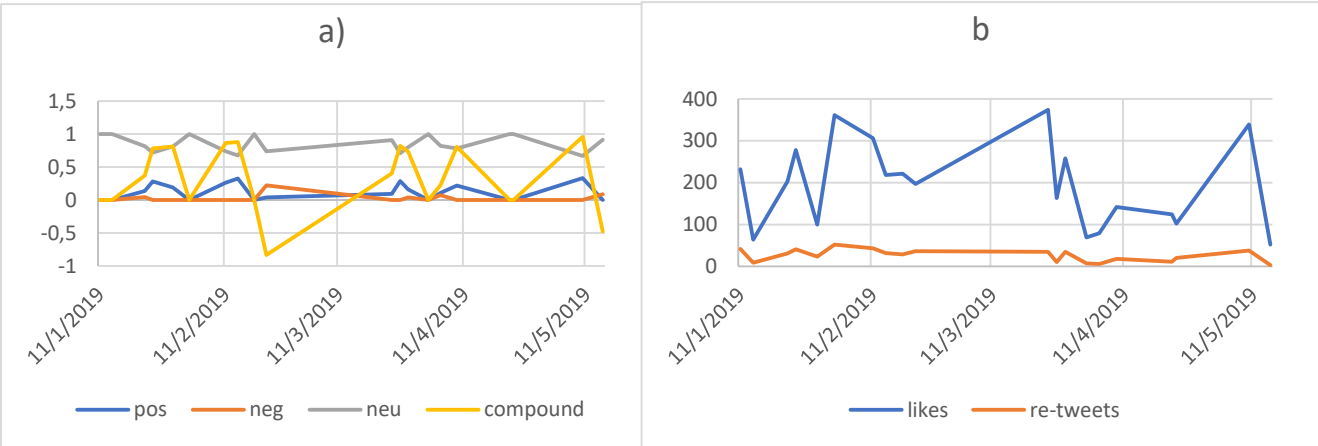


Figure 2: a) Twitter sentiment scores and b) reactions over time by Vader tool

In figure 2a we may see that Dacian Ciolos do not use his Twitter account so much and this might be due to the fact that his main social media communication channel is Facebook, where he owns an account of more than 400k followers. The same situation is valid for figure 2b, where Dacian Ciolos fluctuates at a low level.

	Likes	Re-tweets
Total	3.882	521
Average per tweet	194,10	26,05

Table 4: Dacian Ciolos Twitter totals

¹⁶ <https://github.com/cjhutto/vaderSentiment#about-the-scoring>

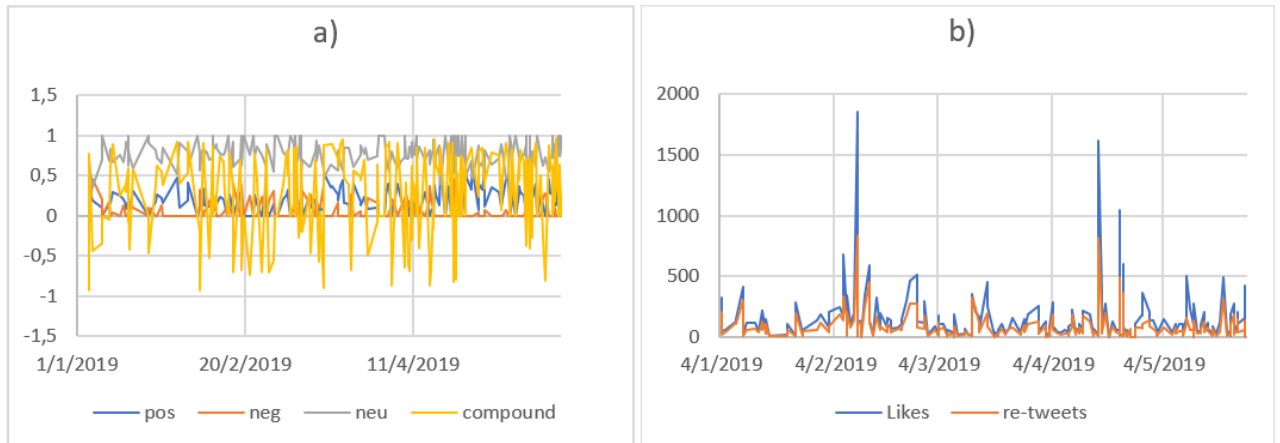


Figure 3: a) Twitter sentiment scores and b) reactions over time by Vader tool

In 3a we may see that there is not any unusual behavior that could be related with the election date and we can observe that all curves follow a random direction, which is quite logical by taking into account that Iratxe Garcia Perez most probably didn't follow any social media plan and was normally tweeting for the current affairs.

In 3b we may understand that Iratxe Garcia Perez tweets have a specific range during the pre-election time, with some outbreaks, but outside of a planned context. This means that there was not any action plan that changed her way of tweeting when the election date was approaching.

	Likes	Re-tweets
Total	33.155	19.840
Average per tweet	137,57	82,32

Table 5: Iratxe Garcia Perez Twitter totals

Philippe Lamberts

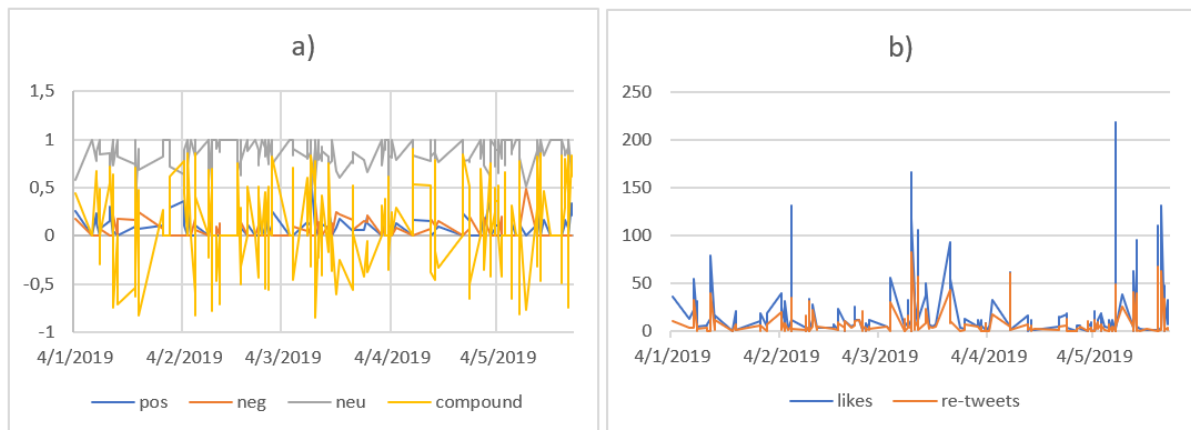


Figure 4: a) Twitter sentiment scores and b) reactions over time by Vader tool

Regarding the sentiment analysis of Philippe Lamberts (4a), we see that the compound is balanced and that means that his content mainly approaches neutrality. Also, neutrality levels are pretty high, and we cannot find any specific pattern on the sentiment analysis.

Inversely with Iratxe Garcia Perez, in 4b we can see that the graph of the reaction of Philippe Lamberts displays some peak periods and some low periods. This might be the result of a planned strategy that produces content which is targeted to reach specific audiences and then lead to reactions.

	Likes	Re-tweets
Total	3.801	1.739
Average per tweet	13,58	6,21

Table 6: Philippe Lamberts Twitter totals

Manfred Weber

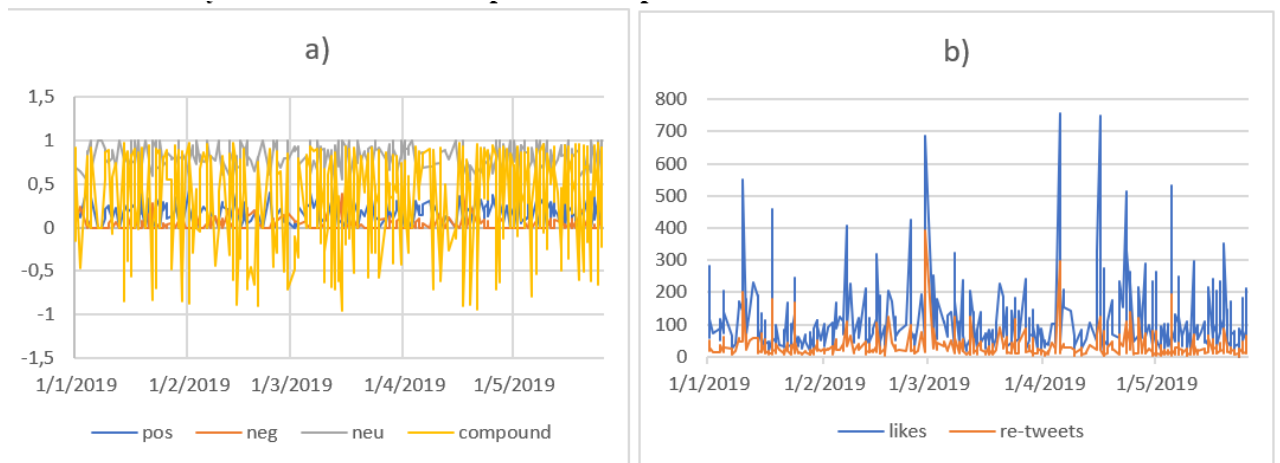


Figure 5: a) Twitter sentiment scores and b) reactions over time by Vader tool

Manfred Weber seems to have a positive impact on his followers (5a), as during all the pre-election periods the positive sentiment overcomes the sentiment and the same happens with the compound which is mainly over the 0 levels and only in few cases below.

Concerning the reactions part (5b), we can see that there is not only one peak period and that when the election was approaching there was a reduction. This might be part of a strategy or paid activations, but we should also consider that maybe the current affairs developments led to those results.

	Likes	Re-tweets
Total	48.501	14.696
Average per tweet	91,68	27,78

Table 7: Manfred Weber Twitter totals

4.1.1.2 1K tweets with hashtag #EUElection (pre-election period)

In this section, we have retrieved and analyzed 1.000 tweets, prior to the EU election, with the hashtag #EUElection from various users. Then we did sentiment analysis as per below:

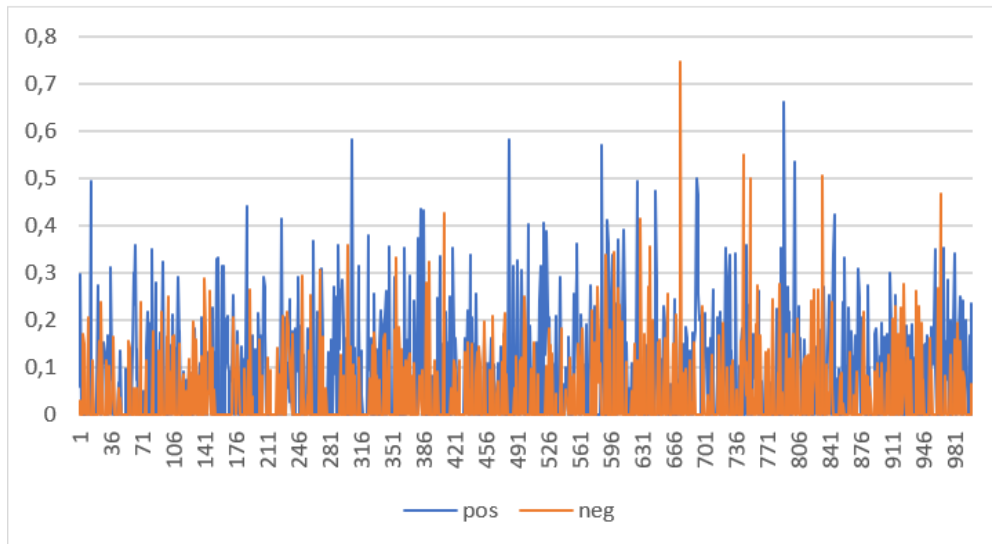


Figure 6: Twitter sentiment scores: Positivity vs negativity last week prior to the election

In figure 6 we do a comparison regarding the tweets mentioning the hashtag #EUElection, during the last week prior to the election. We can see that the situation is balanced with both positive and negative tweets, but we can draw a conclusion that all the extreme tweets (more than 0,4- either positive or negative) are mainly positive, an indication that users supported and participated to the election.

4.1.1.3 1K (or less) tweets mentioning or replying to each leader

In this section, we analyze 1.000 tweets mentioning the Twitter account of each leader prior to the EU election. The sentiment analysis is applied either in replies or retweets that comments on a leader's tweet.

- @ManfredWeber
- @CiolosDacian
- @ph_lamberts
- @IratxeGarper

Manfred Weber

1K tweets mentioning or replying to @ManfredWeber (18-24/05/2019)

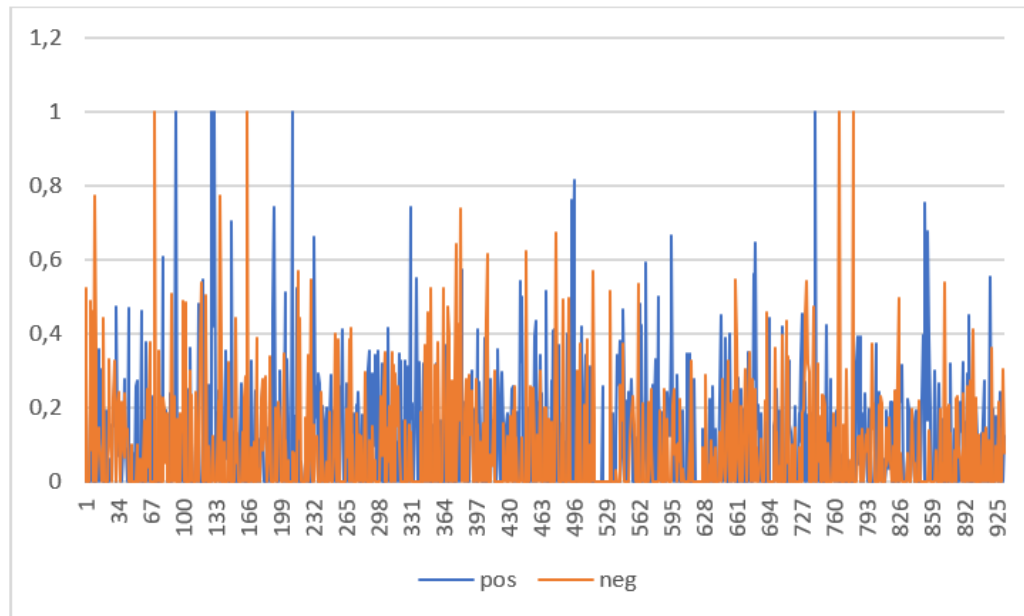


Figure 7: Twitter sentiment scores: Positivity vs negativity

In figure 7 we may see the sentiment analysis -positivity versus negativity- of Manfred Weber prior to the election when users mentioned his name. It seems that the situation is balanced for the extreme positive or negative tweets (more than 0,6), while it is also balanced in the middle of the chart. Furthermore, it is important to mention that while almost all positive mentions are ranged above 0,1 level, many of the negative are ranged near to 0 and that maybe means that the majority of users do not use plenty of negativity in their tweets when mentioning Manfred Weber.

Dacian Ciolos

1K tweets mentioning or replying to @CiolosDacian (01/01- 23/05/2019)

*Dacian Ciolos had 610 tweets mentioning his name during the pre-election period, another clear sign that Twitter is not a social media platform that he bases many of his actions.

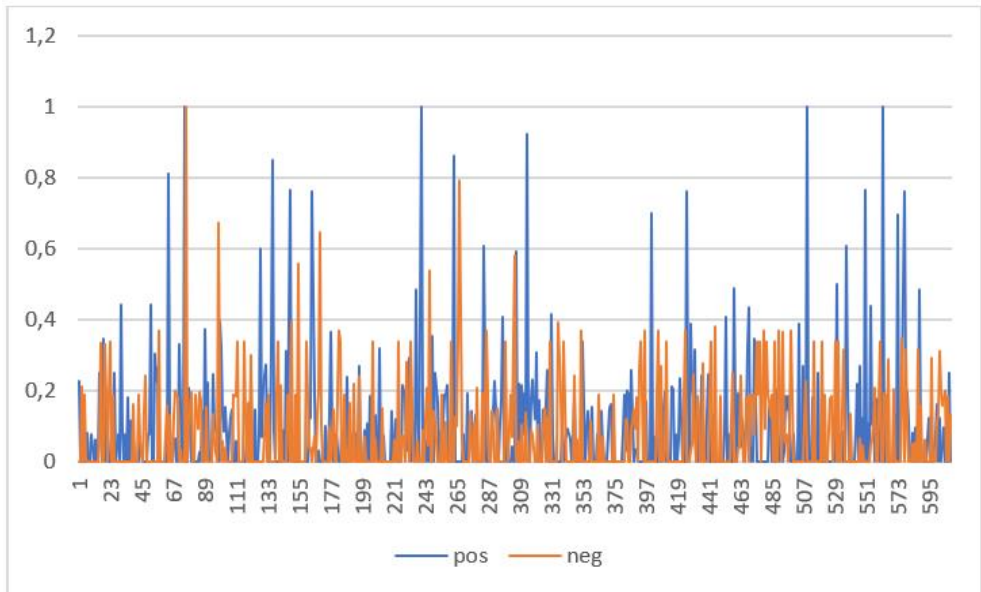


Figure 8: Twitter sentiment scores: Positivity vs negativity

In figure 8 we may see that Dacian Ciolos extreme reactions are mainly positive. The rest mentions are balanced without any time pattern and we have the same situation as Manfred Weber with the negative mentions that approach 0 levels.

Philippe Lamberts

1K tweets mentioning or replying to @ph_lamberts (period: 10/04-24/05/2019)

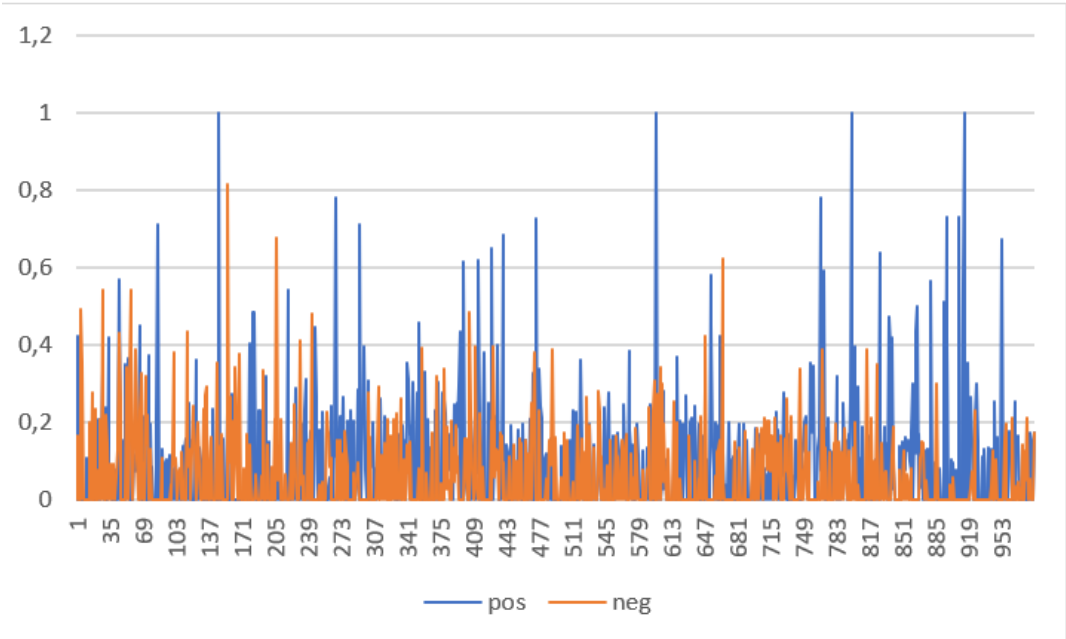


Figure 9: Twitter sentiment scores: Positivity vs negativity

As per figure 9, Philippe Lamberts seems to have a positive impact on his followers when they mention him or replying to his tweets. This conclusion is more obvious as the most extreme tweets are positive and only 3 mentions exceed the 0,6 level, while similarly with Manfred Weber and Dacian Ciolos negativity is mainly ranged between 0 and 0,2.

Iratxe Garcia Perez

1K tweets mentioning or replying to @IratxeGarper (period: 07-24/05/2019)

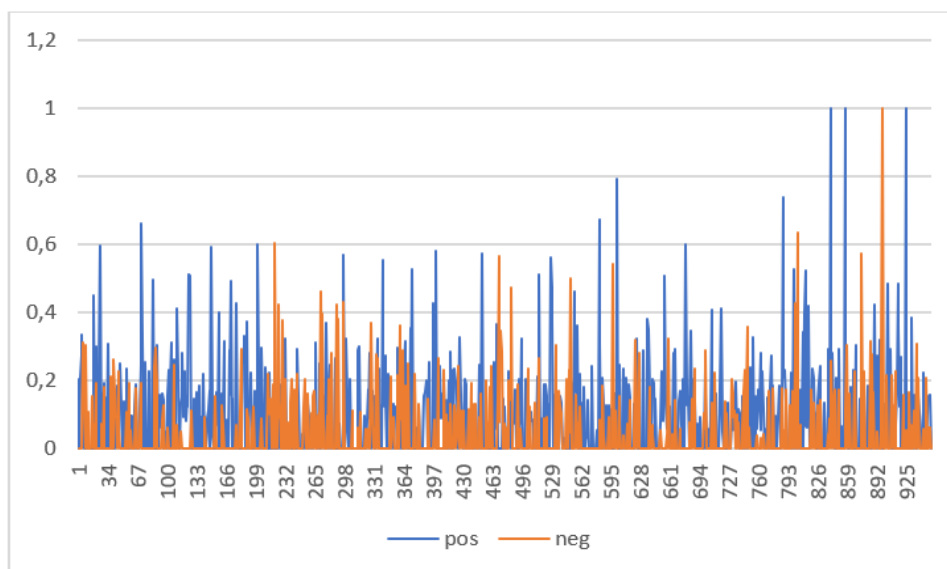


Figure 10: Twitter sentiment scores: Positivity vs negativity

In figure 10 we can see that Iratxe Garcia Perez has also a positive footprint on Twitter, taking into account the mentions and replies to her tweets. Although she is the only leader with so extreme tweets (reaching 1 in the ranking), only one of them is negative and if we do a comparison for the rest, their majority is also positive.

3.5.2 Facebook

Dacian Ciolos

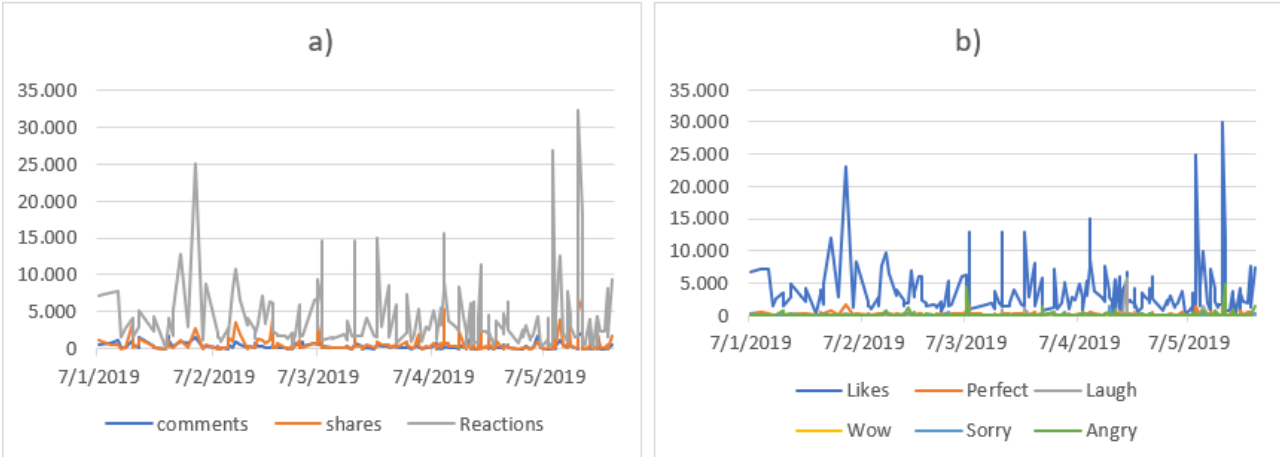


Figure 11: a) Facebook comments, shares, overall reactions and b) separate reactions over time

In figure 11a we may see that Dacian Ciolos is the leader who really dominates in all categories compared with the rest. Regarding the overall reactions, we can see that there is a high peak in May, the election month, as part of his social media strategy. During the rest period of time, there also some peak periods, but those should be related to his actions and the current affair.

Regarding the separate reactions (11b), there is a logical progression of likes according to the popularity of the post and this is more intensive a few weeks prior to the election. Angry reactions are ranked in the 4th position and that means that much of his content creates negative reactions to his followers, although sometimes a post might refer to a negative fact, so the negative reaction applies for the fact and not the person.

	Comments	Shares	Reactions	Likes	Perfect	Laugh	Wow	Sorry	Angry
Total	73.774	133.832	789.228	697.817	37.838	15.265	3.957	10.297	24.054
Average	363,42	659	3.888	3.438	186	75,20	19,49	50,72	118,49
Percentage			100,00%	88,82%	5,16%	1,67%	0,46%	1,15%	2,74%

Table 8: Dacian Ciolos Facebook totals

Iratxe Garcia Perez

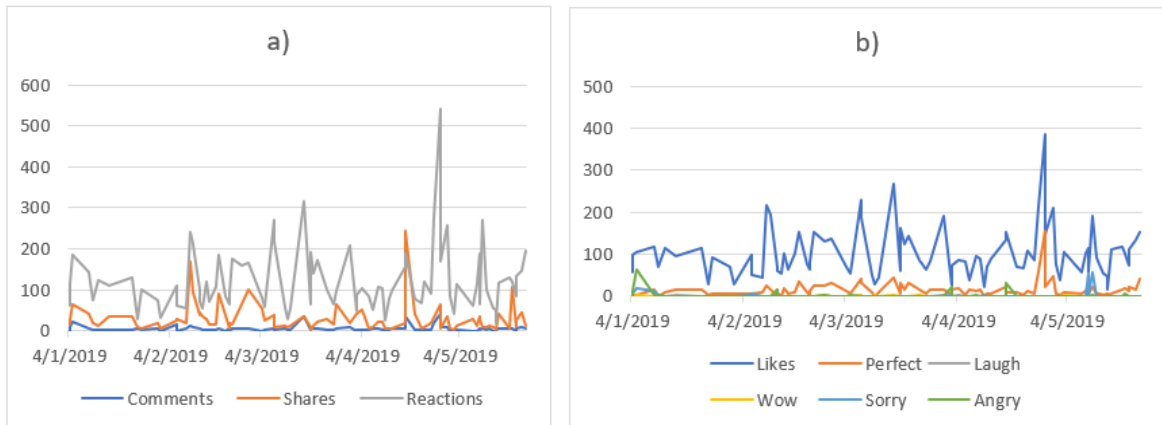


Figure 12: a) Facebook comments, shares, overall reactions and b) separate reactions over time

In 12a we see that Iratxe Garcia Perez is the leader with the least impact and popularity on her Facebook posts. Nevertheless, in the above graph, we may see a small peak in reactions and shares the last week prior to the election, compared with the rest period of time.

Similarly, with all posts from all leaders and Facebook users, likes are the leading category, love follows, and all the rest are negligible. (12b)

	Comments	Shares	Reactions	Likes	Love	Laugh	Wow	Sorry	Angry
Total	455	2.594	10.323	8.724	1.259	4	23	160	153
Average	5,29	30,16	120,03	101,44	14,64	0,05	0,27	1,86	1,78
Percentage			100,00%	84,51%	12,19%	0,06%	0,22%	1,54%	1,48%

Table 9: Iratxe Garcia Perez Facebook totals

Philippe Lamberts

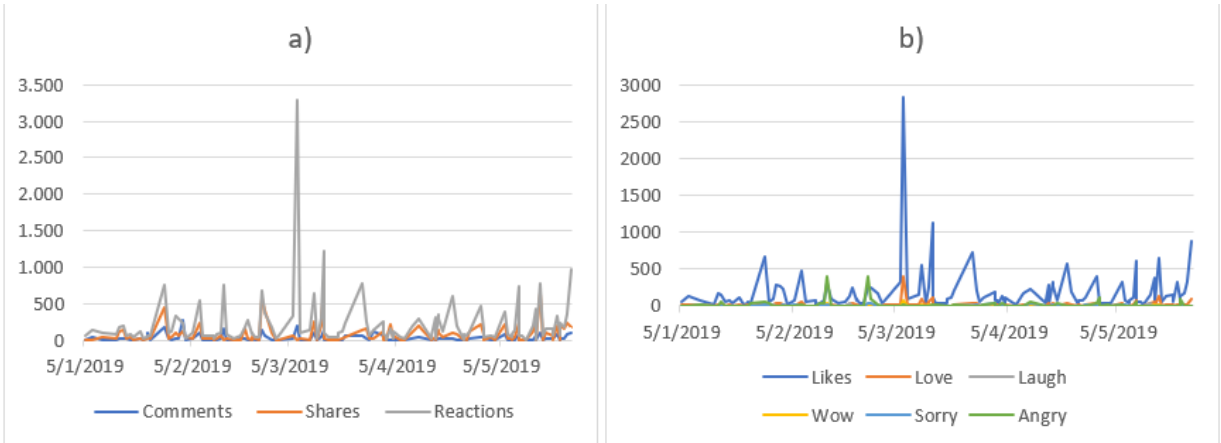


Figure 13: a) Facebook comments, shares, overall reactions and b) separate reactions over time

Philippe Lamberts overall picture shows us a more linear pattern (13a), with small peaks arising repeatedly after specific time periods, with an exception over March when a huge peak took place.

Similarly with the rest leaders (13b), “likes” is the leading category while the rest reactions do not have any specific pattern either chronologically or quantitatively.

	Comments	Shares	Reactions	Likes	Love	Laugh	Wow	Sorry	Angry
Total	3.811	9.653	25.280	20.895	1.950	204	246	296	1.688
Average	33,14	85,42	219,83	181,70	16,96	1,77	2,14	2,57	14,68
Percentage			100,00%	82,65%	7,72%	0,81%	0,97%	1,17%	6,68%

Table 10: Philippe Lamberts Facebook totals

Manfred Weber

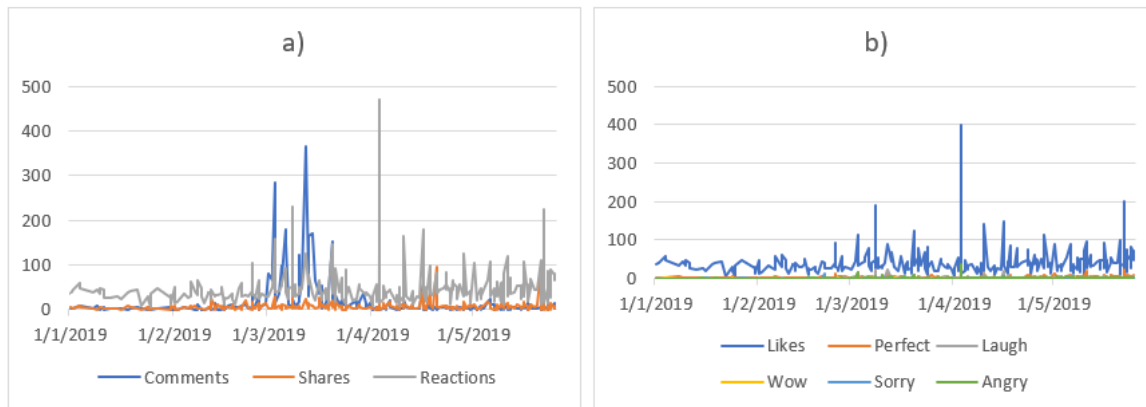


Figure 14: a) Facebook comments, shares, overall reactions and b) separate reactions over time

In figure 14a we may comprehend that Manfred Weber is the only leader where comments overcome reactions in some of his posts (middle March to the beginning of April), a clear sign that his content causes conversations for various topics. After the beginning of April overall reactions becomes again the dominant category.

Similarly with Philippe Lamberts, in 14b we see that separate reactions do not follow a specific pattern based on a social media strategy plan and all peaks that arise are not related to the election period.

	Comments	Shares	Reactions	Likes	Perfect	Laugh	Wow	Sorry	Angry
Total	4.267	2.069	12.555	10.934	852	356	58	41	314
Average	15,75	7,63	46,33	40,35	3,14	1,31	0,21	0,14	1,16
Percentage			100,00%	87,08%	6,79%	2,84%	0,47%	0,32%	2,50%

Table 11: Manfred Weber Facebook totals

3.5.3 Comparative analysis

Twitter

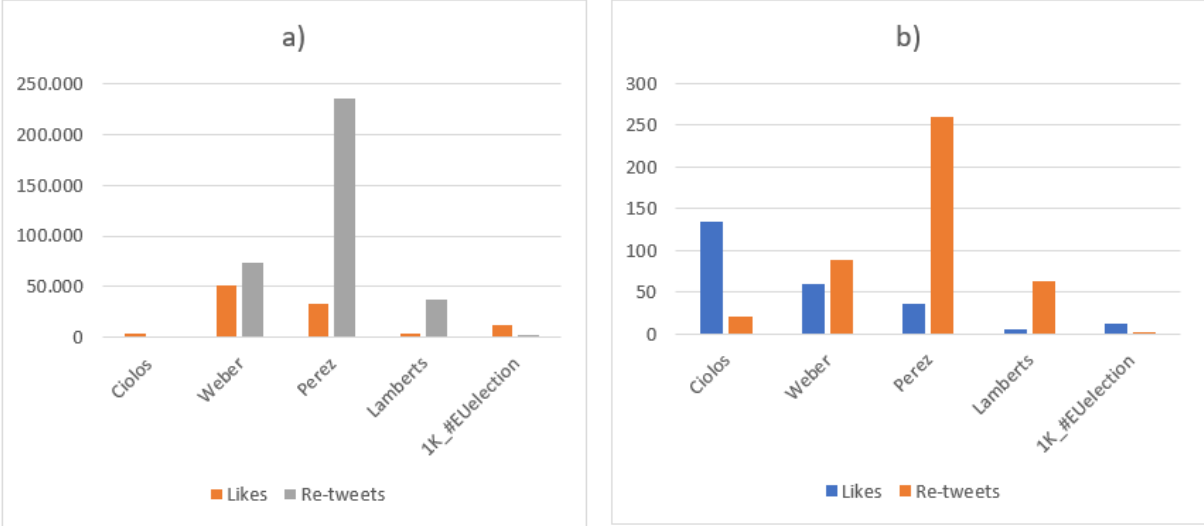


Figure 15: a) Total and b) the average number of likes and re-tweets per leader on Twitter

Figure 15a presents Twitter's total figures, likes, and re-tweets. Iratxe Garcia Perez and Manfred Weber lead likes and re-tweets categories respectively, but Perez has tweeted more times overall. Both of them increased their totals by the retweets that have been done. Concerning the 1k tweets with the hashtag #EUelection, 1 week prior to the election, the engagement seems quite normal taking into account the total numbers of the leaders.

Based on the total numbers and the total posts, in 15b we quote the averages of all figures. It is impressive that Dacian Ciolos leads the likes per tweet category, by tweeting only 29 times prior to the election, while the rest leaders have at least twitted almost 600 times. This is a sign that users are engaged with his content, either positively or negatively.

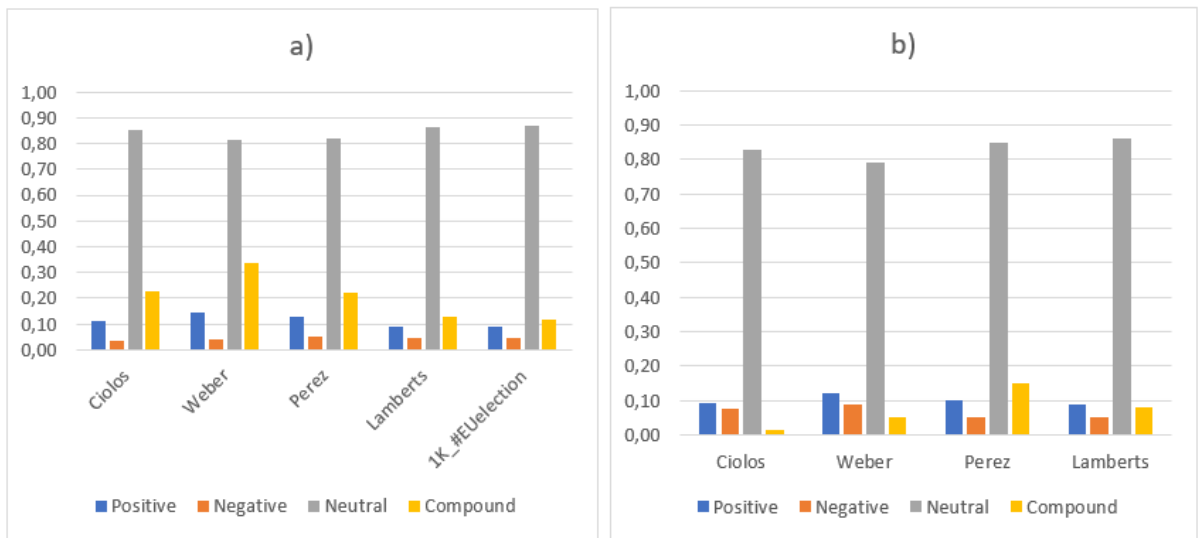


Figure 16: a) Average sentiment scores for each leader's tweet and #EUelection hashtag and b) average sentiment scores for each tweet mentioning each leader

Regarding the sentiment analysis of the leaders (16a), we may see that Manfred Weber has the most positive speech, while Iratxe Garcia Perez and Philippe Lamberts lead in the negative. It is important to mention that deviations are minor in positivity and negativity and most of the tweets have been pointed as neutral. Sensibly, Weber also leads in the compound score, which confirms that has the most positive speech. Of course, it is clear that neutrality is by far the most dominant metric for all leaders and this is normal if we take into consideration that the majority of tweets refer to news/action announcements and general comments for various topics.

In figure 16b we present the sentiment analysis of 1k tweets for each leader, by users mentioning their names. Similarly, with the previous graph Manfred Weber is the leader with the most positive impact on the user's content, while it is interesting that at the same time, he is the one that receives the most negative content from users as well. This metric seems not normal but can be interpreted if we take into account that politicians have fanatic followers and haters that produce those results.

Foller.me¹⁷

In this section, we present the Twitter statistics of each leader by using foller.me and we try to draw some useful conclusions.

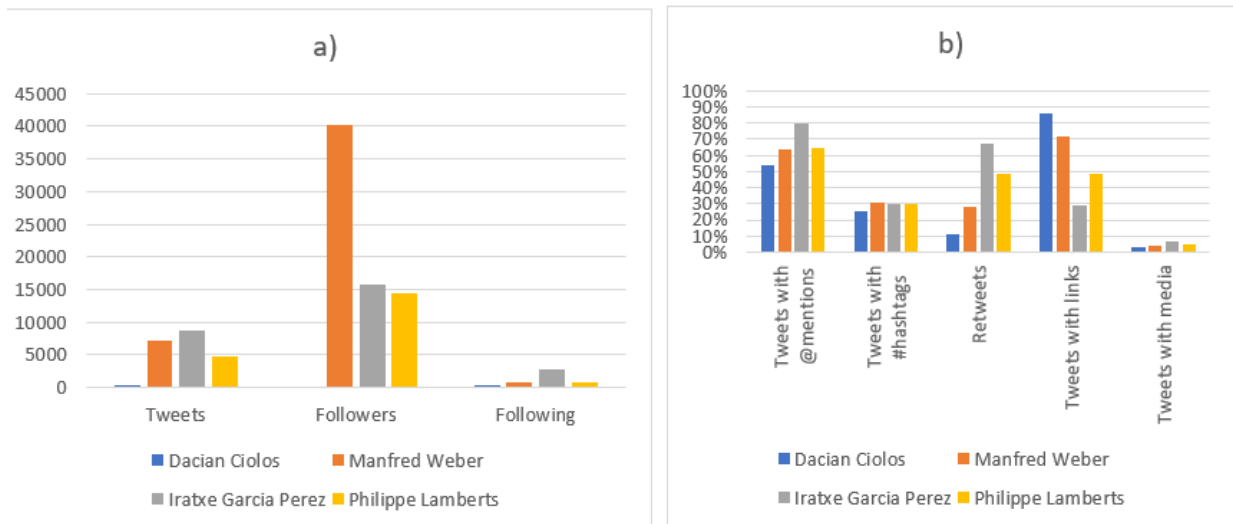


Figure 17: a) Total number of tweets, followers, following and b) tweets with mentions, tweets with hashtags, retweets, tweets with links, tweets with media

In 17a we may comprehend the dominance of Manfred Weber in almost all categories, while Dacian Ciolos seems to be very “weak” in Twitter compared with the best leaders. In 17b, we can conclude that the situation is more balanced than the previous graph, where Dacian Ciolos was almost non-existent in most categories. Here, we can see that tweets with hashtags and media are ranged at the same level, while Manfred Weber leads the tweets with links category and Iratxe Garcia Perez the tweets with mentions and retweets.

¹⁷ www.foller.me

Facebook

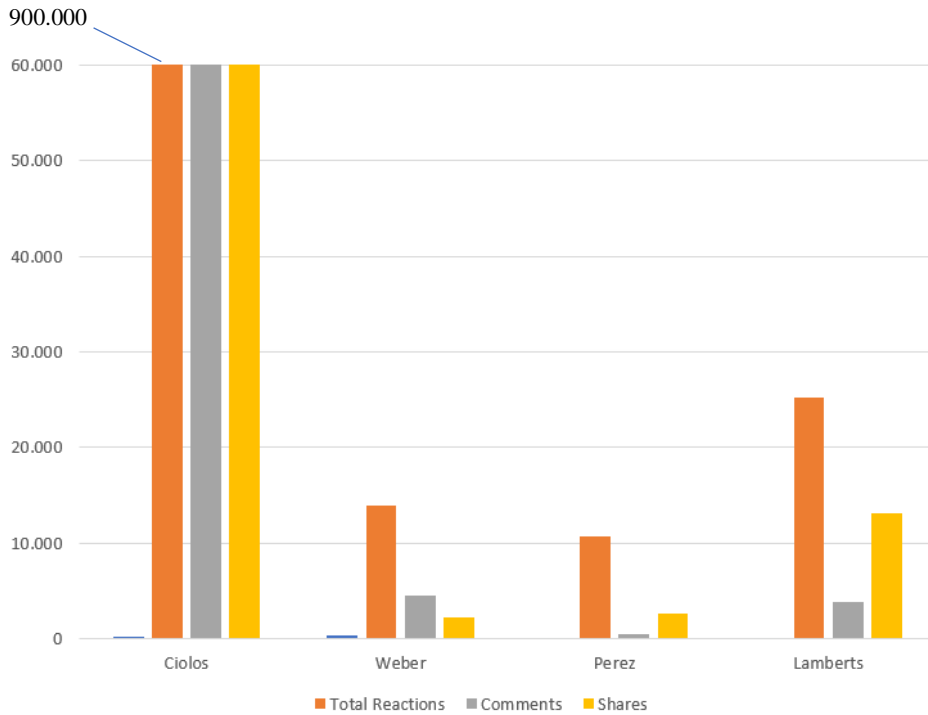


Figure 18: Total reactions, comments, and shares of each leader on Facebook

In figure 18, we may see the total reactions, comments, and shares of all leaders during the pre-election period (1/1/2019 till 26/05/2019). The dominance of Dacian Ciolos is more than obvious in all categories, while the rest leaders are ranged in - less- the same level. This might be the result of sponsored posts, the 405k followers that he has on his Facebook page or a combination of both, as the difference with the rest leaders is tremendous.

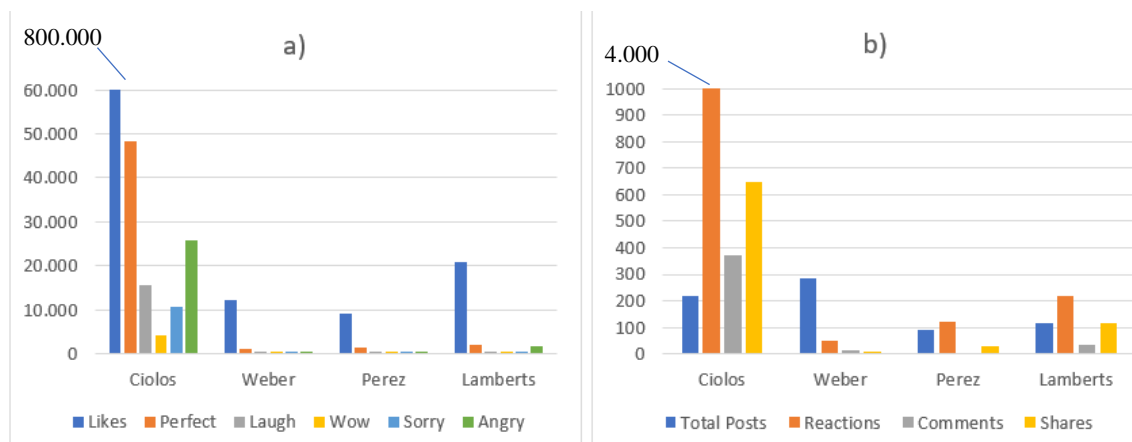


Figure 19: a) Total number of separate reactions and b) the average number of total posts, reactions, comments and shares per leader on Facebook

Of course, the same situation exists in figure 19b, where Ciolos reactions are ranged much higher than the rest leaders.

In this graph, we can also see the ascendancy of Dacian Ciolos and it is interesting that he has posted few times than Manfred Weber who has done 66 more posts, but it is important to mention that Manfred Weber has 60k followers, almost 10 times less than Dacian Ciolos.

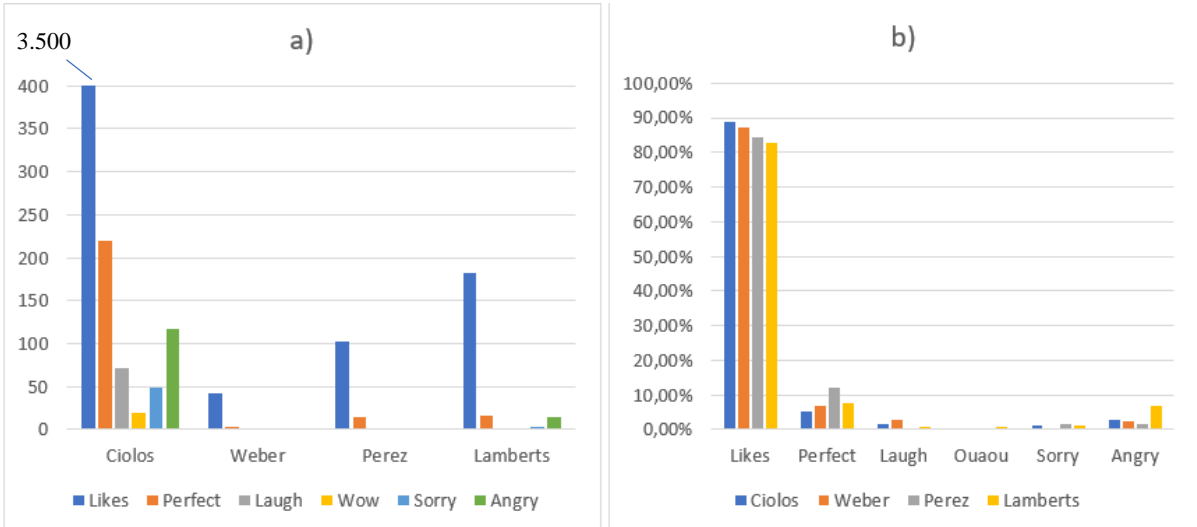


Figure 20: a) Average numbers and b) average percentages of separate reactions on Facebook, per leader

Following the totals, in 20a we present the separate reactions averages, while in 20b we provide a comparative analysis among the separate reactions percentages compared with the total, for each leader. We may observe that “likes” is the top category for all leaders, as expected, and Dacian Ciolos leads it. Furthermore, we can see that Iratxe Garcia Perez owns the top “perfect” percentage, a sign that her followers react very positively to her posts. Last, it is interesting that Philippe Lamberts leads the “angry” category percentage and we can give 2 interpretations. The first one is that the content of his post consists of hate speech and extreme opinions, while the second interpretation is that his posts reveal some bad strands of our society and the users react in such a way. We believe that the second interpretation accumulates the most possibilities.

3.6 Fact-checking tools

In the below section we present the results of the fact-checking tools research we have done for the 2019 EU election.

The 1st part refers to the analysis of the fact-checked articles regarding the election and the 2nd part presents a websites credibility tool (newsguardtech¹⁸) which give us the capability to examine the accuracy and credibility (by checking various factors) of the websites that publish the original articles that were fact-checked in the 1st part. Although t tool was not able to provide credibility results for all webpages, we present the results for the rest.

This part of the thesis mainly covers the RQ3 (Chapter 3.1) and introduces some fact-checking tools.

3.6.1 Fact-checking websites analysis

We collected 45 news articles related to misinformation in the EU election 2019 from the following fact-checking websites:

- [euvsdisinfo](http://euvsdisinfo.com)¹⁹
- [eufactcheck](http://eufactcheck.eu)²⁰
- [factcheckeu](http://factcheckeu.info)²¹

Text analysis

In this part, we observe that the words Russian, Russia, and Ukraine are shown in the top-5 of the list and the words Moscow, Ukrainian complete the top-10, imprinting the clear implication of Russian/ Ukrainian malicious websites to the election. We used a text analysis tool (textalyser²²), which analyzes the statistics of any given text. Our priority is to

¹⁸ www.newsguardtech.com

¹⁹ www.euvsdisinfo.eu/

²⁰ www.eufactcheck.eu/

²¹ www.factcheckeu.info/en/

²² www.textalyser.net/

explore and present any implication or pattern in the original texts of the examined articles.

Word	Occurrences	Frequency	Rank
European	66	1.6%	1
Russian	59	1.4%	2
Russia	57	1.4%	2
Ukraine	50	1.2%	3
Elections	48	1.2%	3
Church	34	0.8%	4
Moscow	31	0.7%	5
Report	27	0.7%	5
Ukrainian	25	0.6%	6
parliament	25	0.6%	6

Table 12: Top frequency words in fact-checked articles

Misinfo.me

Below we may see the credibility evaluation results of each leader, based on the search and analysis that the tool has made. In order to graphically present the results of each leader, we proceed with a percentage ranking, based on the credibility element evaluation of the tool. More specifically, we rank each profile as per below:

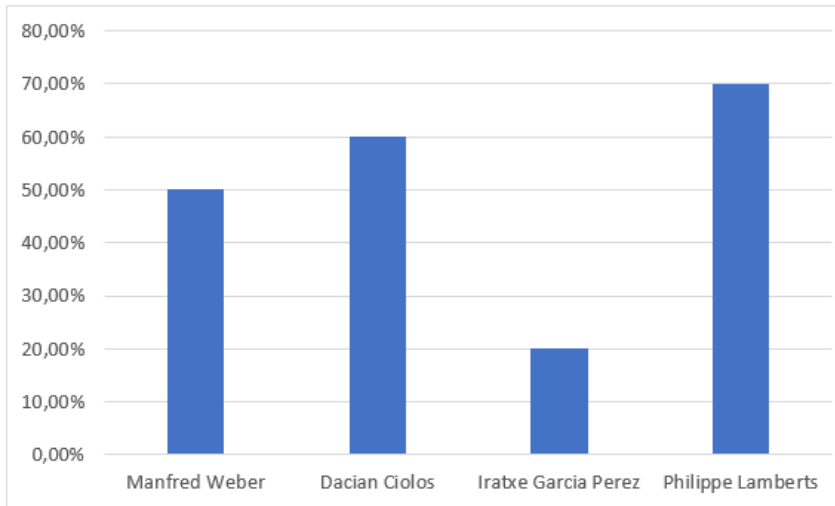
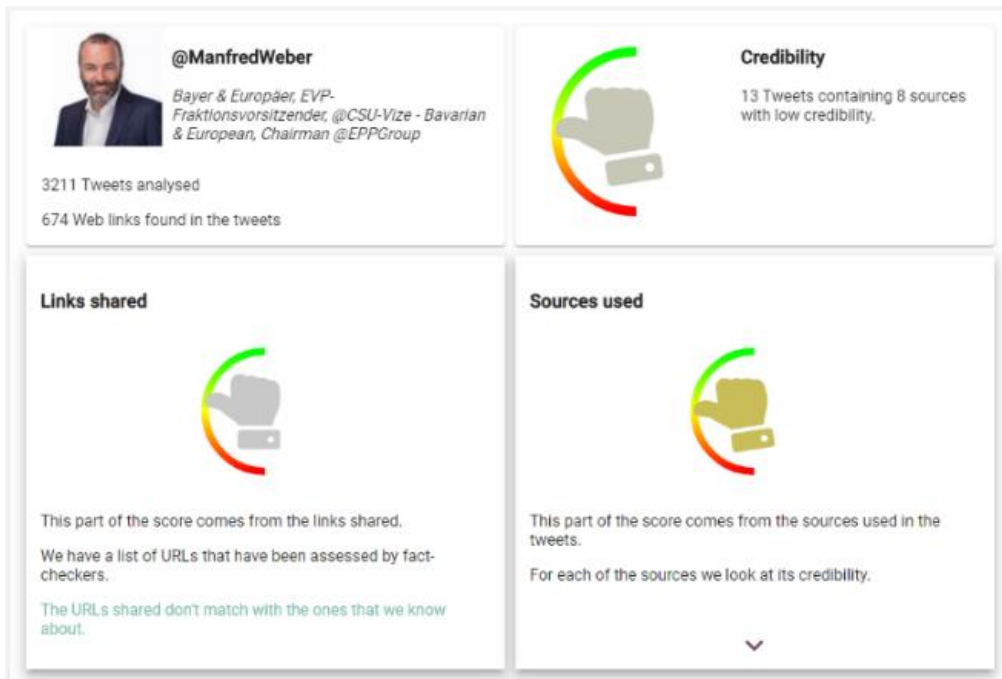


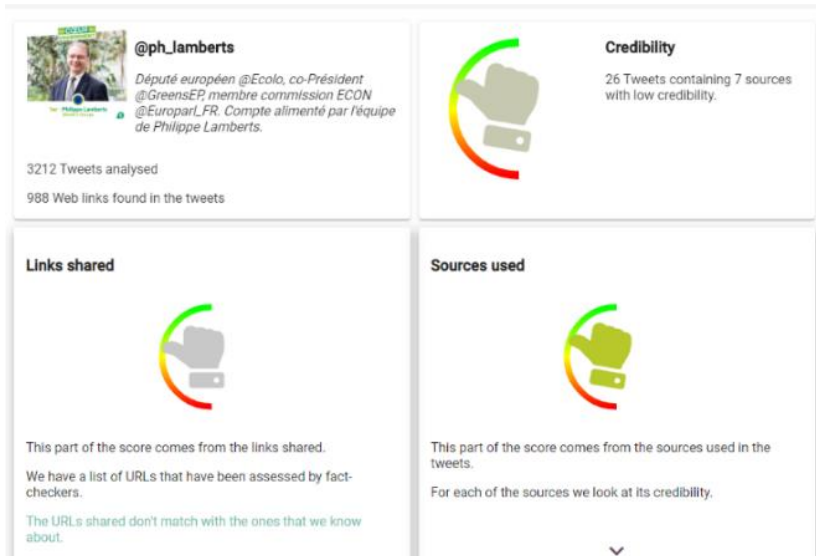
Figure 21: Leaders Twitter profiles credibility

In figure 21 we present the Twitter profiles credibility, based on the tool Misinfo.me. We can see that Philippe Lamberts has the most credible profile by using accurate sources, while Iratxe Garcia Perez is the leader with the least credible profile.

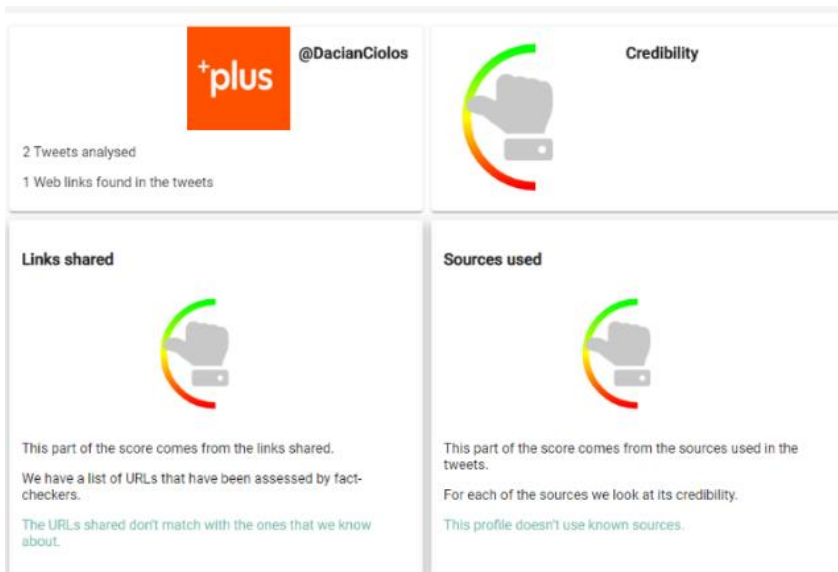
a)



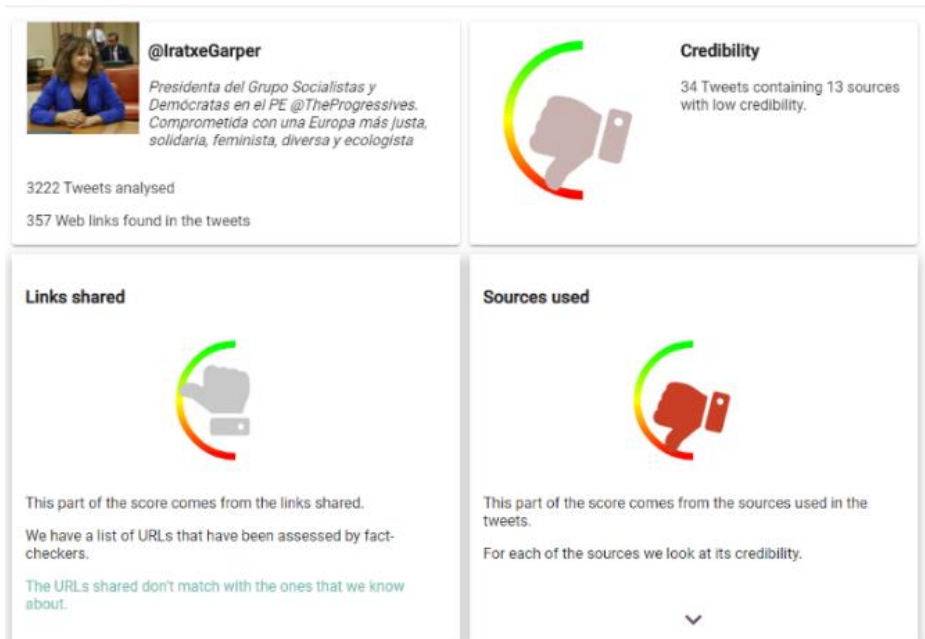
b)



c)



d)



Picture 20: Leaders credibility assessment from Misinfome. a) Manfred Weber, b) Philippe Lamberts, c) Dacian Ciolos and d) Iratxe Garcia Perez

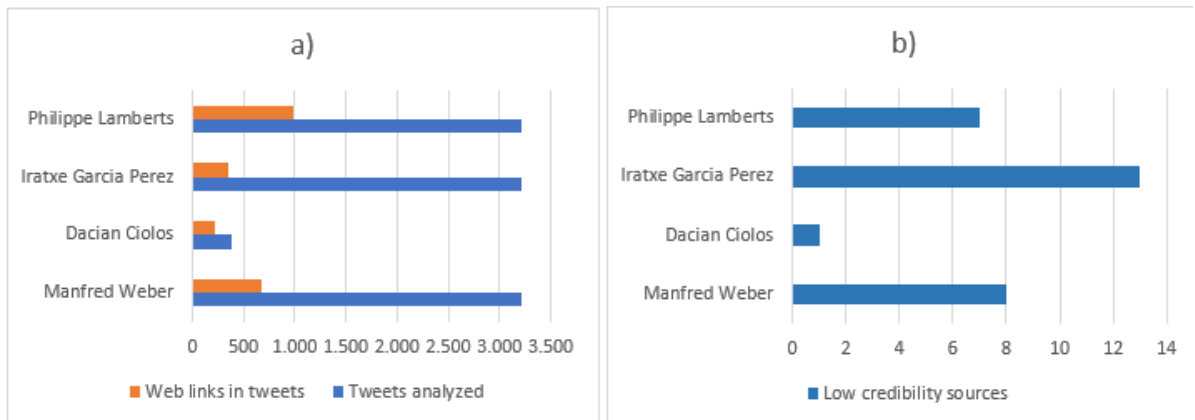


Figure 22: a) Twitter stats²³ and b) sources credibility on Twitter, based on the website links used

In figure 22a, we may see the Twitter statistics of each leader, as per the tool analysis and assessment. We may comprehend that Philippe Lamberts is the leader who accompanies his tweets with web links more than any other and that Dacian Ciolos is the one with the

²³ Web links in tweets compared with the total tweets

least Twitter activity, as he is more active on his Facebook account who dominates in almost all statistical categories.

Regarding the sources credibility graph (22b), as already described above, Iratxe Garcia Perez seems to own the least credible profile as 13 non-credible web links have been found in her tweets, while Philippe Lamberts is the leader with the most credible web sources and leads this category.

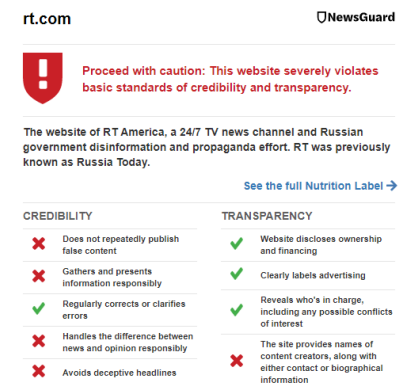
News Guard

In table 14 we present the websites credibility results, based on the information from Newsguard. News-guard is a Google Chrome extension which evaluates the validity of any webpage that a user visit. Although the tool has some limitations, as it cannot provide results for all fact-checked articles websites, below we quote a comprehensive validation check for those web pages that most commonly publish fake news content. Also, we present some web pages that have been flagged as valid and accurate in most categories and this is confirmed by the fact-checking results as well (APPENDIX A). Below the results:

Website	Credibility					Transparency			
	C1	C2	C3	C4	C5	T1	T2	T3	T4
https://russian.rt.com/	X	X	✓	X	X	✓	✓	✓	X
https://de.sputniknews.com/	X	X	X	X	X	X	✓	✓	X
https://it.sputniknews.com/	X	X	X	X	X	X	✓	✓	X
https://fr.sputniknews.com/	X	X	X	X	X	X	X	✓	X
https://www.rt.com/	X	X	✓	X	X	✓	✓	✓	X
https://deutsch.rt.com/	X	X	✓	X	X	✓	✓	✓	X
https://www.liberation.fr/	✓	✓	✓	✓	✓	X	✓	✓	✓
https://www.lemonde.fr/	✓	✓	✓	✓	✓	X	✓	✓	X

Table 13: Credibility and transparency validation, per website

Credibility figures	Transparency figures
Does not repeatedly publish false content #C1	Website discloses ownership and financing #T1
Gathers and presents information responsibly #C2	Clearly labels advertising #T2
Regularly corrects or clarifies errors #C3	Reveals who's in charge, including any possible conflicts of interest #T3
Handles the difference between news and opinion responsibly #C4	The sites provides names of content creators, along with either contact or biographical information #T4
Avoids deceptive headlines #C5	



Picture 21: Newsguard example

Table 14: Credibility and transparency separate figures, as per table 13

Table 13 quotes the websites that the tool examines and provides the result for each category. We can see that Liberation²⁴ and Le monde²⁵ are the most credible and trustworthy websites as they fulfill almost all requirements, while the rest websites can be characterized as non-credible as they have negative assessments for almost all categories.

Table 14 consists of the unique attributes of credibility and transparency respectively. The credibility category contains 5 separate values, while the transparency contains 4. All of them are individually examined in order to provide the final assessment of each website.

²⁴ www.liberation.fr

²⁵ www.lemonde.fr

3.7 Discussion

In this section, we provide a discussion of our findings and address some limitations of our research study.

3.7.1 Plan/ strategy by the leaders

We may see that while Iratxe Garcia Perez does not follow any specific plan or strategy, the curves of Philippe Lamberts seem to be related to the election date as the reaction curves are increased when the 26th of May approaches. Concerning Manfred Weber, we may comprehend from the sentiment analysis that his overall impact is mainly positive and as far as the reactions are concerned there are many regular peaks, which are either related to his strategy or the developments of the current affair.

In Figure 27 we have done a sentiment for 1k tweets mentioning the hashtag #EUelection, prior to the election date. Although the positivity and negativity are balanced overall, the majority of the most extreme tweets are positive and that is a sign of users' participation and support to the procedure.

3.7.2 Comparison

The comparison graphs among leaders can assist us as well to draw some conclusions for the leaders. Regarding Twitter, we see that Dacian Ciolos leads the likes per tweet category even with the least tweets compared with rest leaders, a clear sign that users are engaged with his content, either positively or negatively.

The Twitter sentiment analysis graphs show that Manfred Weber has the most positive speech, while Iratxe Garcia Perez and Philipp Lamberts lead in the negative. Regarding the 1k tweets mentioning or replying to leaders' content, we also see that Manfred Weber has the most positive impact, but at the same time, he leads in the negative as well. Even if this metric seems not normal, we can interpret it by taking into account that politicians -normally- have fanatic supporters or haters.

Regarding Facebook comparative analysis, it is interesting that while Dacian Ciolos dominates in almost all categories, Manfred Weber has posted 66 more times than he did, but we should mention that Dacian Ciolos has about 10 times more followers than Manfred Weber and this is why they have such differences in the total figures. Also, likes are very

normally the top category for all leaders, but it is more interesting to focus on the perfect (love) or angry reactions as we can extract some useful insights. Iratxe Garcia Perez owns the top percentage of love reactions, while Philippe Lamberts leads the angry percentage category and concerning the angry reactions, 2 interpretations can be given. Either Philippe Lamberts content contains hate speech, or he reveals some negative facts of our society and users react in this way. We believe that the 2nd scenario concentrates most probabilities, as the generic online behavior does not show that he uses hate speech.

3.7.3 Twitter

Another research part related to Twitter is presented in the section and refers to 1k tweets mentioning or replying to each leader. More specifically the sentiment analysis of this part shows that Manfred Weber has a positive impact overall with equal amounts between positive and negative extreme mentions. It is very interesting and another clear sign that Dacian Ciolos is not so much engaged with Twitter, the fact that during the period 01/01/2019- 25/05/2019 only 610 users mentioned him or replied to his tweets.

3.7.4 Facebook

Concerning Facebook, it is unambiguous that Dacian Ciolos dominates in all categories and his figures are at least 10 times greater than the rest leaders, while Iratxe Garcia Perez is the leader with the least impact on the platform. Another useful conclusion is that Manfred Weber is the only leader that comments overcome reactions in some posts from middle March until the beginning of April and that figure shows that his content provokes interest for conversation and interaction.

3.7.5 Fact-checking

In the fact-checking part, we did text analysis on the original articles of some websites that are related to the political reportage. All of them were fact-checked and most of them were either fake or partially fake. We found that the words Russian, Russia, and Ukraine were in the top-5 of the board and that shows the implication of Russian/ Ukrainian malicious webpages on the EU election campaign.

Also, we examined the credibility of the leaders' Twitter profiles and found that Philippe Lamberts owns the most credible profile, while Iratxe Garcia Perez has the least credible, based on the sources and links that they have used.

3.7.6 Limitations

We are aware that our research may have some limitations. Many outcomes from NewsGuard tool were not available as it is restricted to English contents of the websites. Another limitation is that for the data collection of tweets related to the European elections, we used only the #EUelection search term. Furthermore, we admit that the collected data regarding misinformation in the European elections are limited to a small amount.

Overall, we faced difficulties with the translations part, as all leaders mainly post and tweet in their mother language, except Manfred Weber who the one with the most Facebook posts and tweets in English. Nevertheless, we manage to find applications that translate text or files with a big amount of words.

4 Conclusion

The rapid spread of misinformation can influence millions of people, impacting elections and financial markets. Misinformation is seen as a serious problem across the globe including Europe. There is no doubt that modern technologies have accelerated the speed at which fake news spread.

In this thesis, we examined the concept of misinformation on the EU elections, 2019. We explored the Code of Practices published by the European Commission to address the spread of online misinformation and its compliance status with online platforms, leading social networks, and the advertising industry.

Furthermore, we analyzed the social media profiles of the main political figures in the elections in terms of misinformation. More specifically, we studied what are the tactics used by the political carriers in order to attract people and get more votes in the election. We presented how social media campaigns were used by the European party leaders during the last EU election 2019.

We investigated the previously fact-checked articles related to EU elections 2019 by using state-of-the-art and open-source fact-checking tools. We employ open source free tools. We also provide some analysis of fact-checking tools for tackling misinformation.

We all may understand this major problem of our society can be confronted only by altering our approach to the way that we receive, evaluate and then share or interact with the information. It is important to study the social aspects of misinformation in the context of behavioral sciences. We also encourage educational stakeholders to collaborate and create awareness about misinformation within the global community.

Future research directions

In the aforesaid discussion section, we described our research work limitations. To address these research limitations, we propose some future research directions. To extend this study for the credibility assessment of non-English websites based on the availability of fact-checking tools having such functionality in the future. Further experimental tests are needed by enhancing the search queries with the combination of various hashtags related to elections. Our results are promising and should be validated by a larger size of previous assessment of news articles and claims on elections.

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6 Appendices

APENDIX A: Samples of Misinfo.me websites evaluation










- <https://russian.rt.com/>

rt.com NewsGuard

 **Proceed with caution: This website severely violates basic standards of credibility and transparency.**

The website of RT America, a 24/7 TV news channel and Russian government disinformation and propaganda effort. RT was previously known as Russia Today.

[See the full Nutrition Label →](#)

CREDIBILITY	TRANSPARENCY
 Does not repeatedly publish false content	 Website discloses ownership and financing
 Gathers and presents information responsibly	 Clearly labels advertising
 Regularly corrects or clarifies errors	 Reveals who's in charge, including any possible conflicts of interest
 Handles the difference between news and opinion responsibly	 The site provides names of content creators, along with either contact or biographical information
 Avoids deceptive headlines	

- <https://de.sputniknews.com/>



NewsGuard empfiehlt Vorsicht bei der Nutzung dieser Webseite. Sie verletzt in hohem Maße grundlegende Anforderungen an Glaubwürdigkeit und Transparenz.

Sputniknews.com ist die deutschsprachige Webseite der Nachrichtenagentur Sputnik, die der russischen Regierung gehört. Sie veröffentlicht regelmäßig Propaganda und Falschinformation.

[Mehr Informationen anzeigen →](#)

GLAUBWÜRDIGKEIT

- ✘ Es wurden nicht regelmäßig Falschinformationen veröffentlicht
- ✘ Journalisten recherchieren und veröffentlichten Informationen verantwortungsbewusst
- ✘ Unterlaufene Fehler werden regelmäßig richtiggestellt
- ✘ Klare Unterscheidung zwischen Nachricht und Meinung
- ✘ Vermeiden irreführender Überschriften

TRANSPARENZ

- ✘ Die Webseite veröffentlicht Eigentumsverhältnisse und Finanzierung
- ✓ Werbung wird als solche gekennzeichnet
- ✓ Offenlegen der redaktionell Verantwortlichen, einschließlich möglicher Interessenskonflikte
- ✘ Es gibt Informationen über die Autorinnen und Autoren.

- <https://it.sputniknews.com/>



Proceed with caution: This website severely violates basic standards of credibility and transparency.

The Italian website of a Russian state-owned international news agency. Sputnik does not disclose its ownership and publishes propaganda and disinformation in line with Russian interests.

[See the full Nutrition Label →](#)

CREDIBILITY

- ✘ Does not repeatedly publish false content
- ✘ Gathers and presents information responsibly
- ✘ Regularly corrects or clarifies errors
- ✘ Handles the difference between news and opinion responsibly
- ✘ Avoids deceptive headlines

TRANSPARENCY

- ✘ Website discloses ownership and financing
- ✓ Clearly labels advertising
- ✓ Reveals who's in charge, including any possible conflicts of interest
- ✘ The site provides names of content creators, along with either contact or biographical information

- <https://fr.sputniknews.com/>



Proceed with caution: This website severely violates basic standards of credibility and transparency.

The French language website of Russian state-owned news agency Sputnik. The site does not reveal its government ownership and publishes disinformation and propaganda in line with Russian interests.

[See the full Nutrition Label →](#)

CREDIBILITY	TRANSPARENCY
Does not repeatedly publish false content	Website discloses ownership and financing
Gathers and presents information responsibly	Clearly labels advertising
Regularly corrects or clarifies errors	Reveals who's in charge, including any possible conflicts of interest
Handles the difference between news and opinion responsibly	The site provides names of content creators, along with either contact or biographical information
Avoids deceptive headlines	

- <https://www.rt.com>



Proceed with caution: This website severely violates basic standards of credibility and transparency.

The website of RT America, a 24/7 TV news channel and Russian government disinformation and propaganda effort. RT was previously known as Russia Today.

[See the full Nutrition Label →](#)

CREDIBILITY	TRANSPARENCY
Does not repeatedly publish false content	Website discloses ownership and financing
Gathers and presents information responsibly	Clearly labels advertising
Regularly corrects or clarifies errors	Reveals who's in charge, including any possible conflicts of interest
Handles the difference between news and opinion responsibly	The site provides names of content creators, along with either contact or biographical information
Avoids deceptive headlines	

- <https://deutsch.rt.com>



Proceed with caution: This website severely violates basic standards of credibility and transparency.

The German website of RT, a Russian government disinformation and propaganda effort. RT was previously known as Russia Today.

[See the full Nutrition Label →](#)

CREDIBILITY	TRANSPARENCY
✗ Does not repeatedly publish false content	✓ Website discloses ownership and financing
✗ Gathers and presents information responsibly	✓ Clearly labels advertising
✓ Regularly corrects or clarifies errors	✓ Reveals who's in charge, including any possible conflicts of interest
✗ Handles the difference between news and opinion responsibly	✗ The site provides names of content creators, along with either contact or biographical information
✗ Avoids deceptive headlines	

- <https://www.youtube.com>



This website is a platform that publishes content from its users that it does not vet. Information from this source may not be reliable.

A video-sharing website owned by Google. YouTube allows anyone to post content and features few mechanisms for controlling what is posted.

[See the full Nutrition Label →](#)

- <https://www.liberation.fr>



This website generally maintains basic standards of credibility and transparency.

A daily newspaper covering national and world news. Co-founded by Jean-Paul Sartre and originally Maoist, Libération is a leading voice of the French left-leaning press.

[See the full Nutrition Label →](#)

CREDIBILITY	TRANSPARENCY
✓ Does not repeatedly publish false content	✗ Website discloses ownership and financing
✓ Gathers and presents information responsibly	✓ Clearly labels advertising
✓ Regularly corrects or clarifies errors	✓ Reveals who's in charge, including any possible conflicts of interest
✓ Handles the difference between news and opinion responsibly	✓ The site provides names of content creators, along with either contact or biographical information
✓ Avoids deceptive headlines	

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