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Additional Information

Online users' attitudes toward fake news: Implications for brand management

Abstract

This study examines brands' vulnerability to fake news. The rapid spread of online misinformation poses challenges to brand managers, whose brands are co-created online, sometimes to the detriment of the brand. There is a need to identify the information sources that are likely to be trustworthy and to promote positive consumer attitudes toward brands. The data for this study were taken from a Flash Eurobarometer of 26,576 respondents across 28 European countries. Cluster analysis and partial least squares structural equation modeling (PLS-SEM) were used to analyze the data and unveil users' attitudes toward fake news. The findings show that users' attitudes toward fake news differ among European countries. Younger and tech-savvy users are more likely to recognize fake news and are consequently able to evaluate digital information sources without relying on policy interventions to limit the impact of fake news. Brand managers can use the findings of this study to better understand different kinds of users' susceptibility to fake news and reshape their social media branding strategies accordingly. It is hoped that this paper will encourage further research on brand management in relation to fake news and promote the widespread adoption of best practices in social media communication.

Keywords: fake news, consumer attitude, trust, online vs. offline, brand management

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1. INTRODUCTION

While the term "fake news" is nothing new, its mainstream popularity is a recent phenomenon. The study of its prevalence and impact on consumer-firm relationships requires a multidisciplinary approach. As noted by Pennycook and Rand (2018b), not all individuals are equally predisposed to be deceived by fake news. Moreover, not all individuals engage in pass-on behaviors that promote fake news virality. The literature generally presents young consumers as being less reliant on official and trustworthy information sources such as television, newspapers, and radio newscasts, suggesting that younger individuals instead prefer social media-based information sources.

Over the last decade, social media have become an active part of daily life for young and not-so-young Internet users around the world. With each post click, share, like, tweet, comment, or content exploration, people become active prosumers. This "new" type of consumer has access to all forms of online information created by accredited sources or by their own peers. In addition to attaching greater value to peers' opinions, such consumers are sophisticated in avoiding advertisements, and they co-create brand images through content creation with unverified information. However, through social media, people are exposed to large-scale disinformation, including misleading information or fake news, which not all users seem to be able to discover (Pennycook & Rand, 2018a).

Fake news is defined here as any piece of information that is intentionally and

verifiably false or can mislead readers regarding a specific context or brand (Tandoc, Lim, & Ling, 2018). Visentin, Pizzi, and Pichierri (2019) investigated sources of information and the way in which fake news negatively affects brand image and consumer attitudes toward brands. They showed that there is truth in brand managers' concern over brand image (de)construction by fake news.

Few studies have focused on fake news from a brand-consumer perspective; instead, they have largely focused on political problems (Berthon & Pitt, 2018; Zhuang, Cui, & Peng, 2018). In 2019, the *Journal of Product & Brand Management* published a special issue to fill this gap, which also highlights the need for a deeper understanding of this phenomenon. Two research gaps can be identified in the literature. First, few studies have conceptualized users' attitudes toward fake news in terms of the capability to discover or unveil fake news. Second, there is a lack of insight into how users search for and validate the spread of information online. Therefore, this study aims to expand upon existing research by exploring which individual characteristics enhance consumers' predisposition to distrust fake news and to search for truthful sources of information on brands.

This study uses data from the European Commission's Flash Eurobarometer 464 on Fake News and Disinformation Online. The initial results reveal a division between digital users and non-digital users. The findings show that younger people tend to be more aware and better able to handle misinformation and fake news. There are also differences between countries, with users from northern European countries showing less concern over fake news exposure. Nonetheless, the results suggest that not all digitally active users are able to recognize fake news or at least trust their ability to recognize fake news or misinformation. Because the existing understanding of users' attitudes and behaviors regarding fake news is quite narrow, this additional knowledge can help brand managers and social media marketers design better strategies.

2. LITERATURE REVIEW

Over the last two decades, social networking sites have become popular spaces for co-creation, allowing users to create content, share opinions, photos, and movies, and search for peer content as a credible information source (Zavišić & Zavišić, 2011). Research on the effects of social media on online branding has largely been dominated by topics such as online reviews (Casado-Díaz, Pérez-Naranjo, & Sellers-Rubio, 2017; Chen, Fay, & Wang, 2011; Edelman, 2010; Skinner, 2018), eWOM (Farzin & Fattahi, 2018; Trusov, Bucklin, & Pauwels, 2009), user-generated content (Skinner, 2018), and virtual social communities (C.-Y. Wang, Lee, Wu, & Liu, 2017). To a lesser degree, brand co-creation and brand communication have also been studied (So, Wu, Xiong, & King, 2018), but the first studies of fake news were published only recently (Chen & Cheng, 2019; Visentin et al., 2019; Zhuang et al., 2018). In 2011, 50% of social media users followed brands on brand pages (de Vries, Gensler, & Leeflang, 2012) and showed a tendency to progressively engage in brand-related co-creation actions (de Vries, Peluso, Romani, Leeflang, & Marcati, 2017).

To take full advantage of Web 2.0, firms must understand and follow users' social media behavior, retrieving data from user-generated content, comments, and reviews

shared with peers. The vast amount of available information not only serves as a database for firms (Varkaris & Neuhofer, 2017) but also reflects the brand image from the user's perspective. Users' brand image perceptions are unique and are affected by users' personality traits and by what is communicated over the Internet (Borges-Tiago, Tiago, Veríssimo, & Silva, 2019). As noted by Berthon and Pitt (2018), while social media contain accurate facts, they also include distorted information, fake images, and post-facts that pose a risk to brand management worldwide. These authors asserted that brands have direct and indirect contact with fake news, which can be risky and may compromise the brand image and brand-consumer relationships (Rizvi & Oney, 2018).

Vargo, Guo, and Amazeen (2018) found that information cascades take place on social networks because they allow real-time dissemination of content produced by users without any formal supervision and potentially reach a wide audience. Therefore, analyzing fake news from a brand perspective is relevant for two fundamental reasons. First, the growing occurrence of personalization has blurred the boundaries between user and marketing content, disrupting traditional branding practices (Hennig-Thurau, Hofacker, & Bloching, 2013) and compelling brands to consider consumers as brand co-creators (Ind, Iglesias, & Schultz, 2013). Second, the Internet, especially social media, offers a publishing arena, where information and misinformation related to brands can be widely accessed, shared, transformed, and commented on by a huge number of users. Such post-information can be taken as a proxy for brand reputation (Bhandari & Rodgers, 2018; Tajvidi, Richard, Wang, & Hajli, 2018).

2.1. Understanding fake news

History has shown that fake news tends to proliferate when new forms of communication become available to the general public (Burkhardt, 2017). As Burkhardt (2017) noted, in the pre-printing press era, leaders had privileged access to information and knowledge and used it as a powerful tool to control others. The content they spread could be true or false, but common people were unable to distinguish fact from fiction. In the post-printing press era, the literacy level rose, and more people started to gain access to information. In this period, writers also started selling and creating information pieces according to third party interests, and political and press fake news began to appear. In the mass media era, this fake news has become even more popular, reaching a wider range of readers. Recently, the unique characteristics of the Internet have caused fake news to re-emerge strongly (Pennycook & Rand, 2018b).

To further understand the effects of fake news on branding, a deeper comprehension of fake news in the context of social media is required. Tandoc et al. (2018) performed a meta-analysis of 34 articles published between 2003 and 2017, discovering the different ways in which the term "fake news" has been used and defined. They found that fake news is used as a synonym for "satire, parody, fabrication, manipulation, propaganda, and advertising" (Tandoc et al., 2018, p.141). Shao, Ciampaglia, Varol, Flammini, and Menczer (2017) extended this list of key terms to include "hoaxes, rumors, conspiracy theories, fabricated reports, and click-bait headlines."

In this study, the main research focus and the density of the articles that analyze fake news in a social media context were identified using a process similar to that described

by Sultan, Wong, and Sigala (2018) and Tiago, Couto, Faria, and Borges-Tiago (2018). Specifically, the key terms listed in the previous paragraph were used as search keywords. Crosschecking these keywords in one of the largest databases of scholarly research (Scopus) yielded 409 references from the period 2004 to 2018 and one reference from 1998. Research on fake news is a recent phenomenon, with 86% of all articles on the subject being published between 2017 and 2018. These articles were mostly produced in English-speaking countries (34.4% in the United States and 9.6% in England), followed by the People's Republic of China (7.2%) and Australia (6.4%).

A bibliometric network was constructed using VOSviewer 1.6.9 software to analyze the main research areas in greater depth. A clustering procedure was performed for the references retrieved from Scopus. This procedure was based on the association strength of the title and abstract contents. The aim was to obtain a better understanding of the main research topics over the years. Six clusters emerged (see Figure 1).

Figure 1 here.

These six clusters are shown in the network visualization above with the total link strength between content. The lack of studies integrating fake news and social media communication is noteworthy. Few articles (less than 31%) address these topics. These articles can be placed into three clusters, which are mapped under the left-hand quadrant of the graph: the first, with 26 items (olive green), includes the major topics of "information," "content," and "community"; the second, with 16 items (purple), includes the keywords "credibility assessment," "Trump," and "media literacy"; and the third, with 16 items (sky blue), includes "computer research," "misinformation," and "human behavior." The remaining three clusters are not directly related to fake news in a post-Internet era: cluster four (red) is mostly related to the distinction between facts and fake news and its evolution over the years; cluster five (dark blue) is linked to the data processing and sciences behind information analysis over the years; and the main topic of cluster six (dark green) is the mass media's role in the dissemination of health and political information. The first three main streams of research (Clusters 1, 2, and 3) converge on two distinct phenomena: the spontaneous dissemination of messages through eWOM and the production, dissemination, and credibility of content in a digital context.

Litvin et al. (2008) reported that eWOM encompasses all informal communications through Internet-based technologies that target consumers. These parameters are narrow and emphasize the flow of communication from firms to consumers; however, they neglect other forms such as generic social media sites, product reviews, thematic social media sites, blogs, discussion forums, imagined communities, and brand communities. Cheung and Thadani (2012) noted that the wide range of platforms and types of eWOM has led to a division of research into two main streams: market-level analysis and individual-level analysis. This division therefore neglects combined approaches where eWOM is considered to be the result of ongoing dialog between firms and consumers and among consumers. Therefore, social networking sites can be considered ideal platforms to establish connections with potential, current, and former customers because they can profile customers according to their needs and provide formal and informal feedback that

may be either positive or negative.

Cheung and Thadani (2012) showed that consumers generally perceive eWOM as more trustworthy and persuasive than traditional media. However, on social media, the information that is created and spread by consumers is not always accurate (Torres, Gerhart, & Negahban, 2018). The timing and pace of information dissemination have increased, creating an ongoing challenge to find methods to differentiate and extract credible information and discover trustworthy sources and users (Campan, Cuzzocrea, & Truta, 2017). Tsifti (2010) reported that trust in traditional mainstream media has faded in many developed countries. Research has shown that media trust can depend on elements such as content, those who deliver the news, and media ownership (Turcotte, York, Irving, Scholl, & Pingree, 2015). Different terms such as “credibility” and “trust” have even been used to refer to media trust (Schranz, Schneider, & Eisenegger, 2018). Although there are several definitions of trust, this study deals specifically with trust in digital media sources. Chen and Cheng (2019) found that consumer attitudes toward brands’ communication efforts are influenced not only by digital media source trust but also by brand trust.

To enhance brand trust and positively influence consumer attitudes, firms must take two actions. First, they must create and disseminate credible content in digital contexts (Chen & Cheng, 2019; Tiago, Cosme, & Borges-Tiago, 2019). Second, they must discover and combat fake news stories that target their brands (Vafeiadis, Bortree, Buckley, Diddi, & Xiao, 2019). The two actions are related but distinct. The biggest challenge to firms might appear to be linked to the second one. Because “the power of the internet can be used for both good and evil” (Burkhardt, 2017, p. 14), firms can employ technology to collect and process massive amounts of data using bots and thereby unveil fake news sources related to their brand. Zhang and Ghorbani (2019) reported that unveiling the nature of the fake news source (news creators and spreaders may be non-human or real people) is critical for brands to define a response strategy. This knowledge is useful to combat pieces of fake news as they appear, minimizing their negative effects on consumer attitudes toward the brand (Visentin et al., 2019). According to Mills and Robson (2019), storytelling is one of the strategies that brands adopt to mitigate the effects of fake news on consumer attitudes. However, not all consumers have the same attitudes in response to misleading information or fake news (Pennycook & Rand, 2018b).

2.2. *Who believes fake news?*

In addition to brands’ efforts to identify false information and notify users about the credibility of different sources, there is also the question of whether all users share the same ability to identify and notify regulators when met with fake news (Pariser, 2011). Tandoc et al. (2018) reported that in a 2016 survey in the United States, 75% of adults were found to be deceived by fake news. Marchi (2012) analyzed teenagers’ information consumption behavior because habits formed at a young age shape adults’ news habits. That study found that teenagers do not consume traditional media as did previous generations. Teenagers access information through digital devices, are active users of social media sites (Warner-Søderholm et al., 2018), and can identify fake news when they encounter it (Tandoc et al., 2018). Consequently, it is hypothesized that users with more

well-established digital social personas are younger (H1) and more likely recognize fake news (H2).

However, information technology is relevant not only for young people but also those who have a more tech-savvy profile (Quan-Haase et al., 2018). These tech-savvy users may have information literacy characteristics and information technology skills that differ substantially from those of other population segments (Miller and Lammas, 2010). These users might also be of a variety of ages (Quan-Haase, Williams, Kicevski, Elueze, & Wellman, 2018). Therefore, as noted by Miller and Lammas (2010, p. 2), social media “are no longer the domain of Generation Y; older generations are heavy social networkers.” Warner-Søderholm et al. (2018) added to this statement, affirming that “more experienced social media users will be more ‘savvy’ to which networks and newsfeeds are reliable and valid.” Therefore, it is hypothesized that users are more capable of discovering fake news if they have a more tech-savvy profile (H3).

2.3. Fake news and cultural differences

Although studies have provided a reasonable understanding of the paths to fake news discovery, most of the conclusions relate to populations in the United States (Allcott & Gentzkow, 2017; Bluemle, 2018; Guess, Nyhan, & Reifler, 2018; Keenan & Dillenburger, 2018; Love & Ahiaga-Dagbui, 2018; Suselbeck, 2018) and may not reflect how people from other countries react to fake news (Schapals, 2018). Like any other consumer behavior, the consumption of digital information, truth, and fake news may be influenced by cultural differences (Dinev, Goo, Hu, & Nam, 2009). A study by Schwartz (1992) that examined customer word-of-mouth and complaint behaviors showed the relevance of cultural value dimensions. The cross-cultural literature has evolved over the years, with a number of country-specific and cross-cultural comparative studies largely reinforcing Schwartz’s (1992) initial conclusions. Hsu, Tien, Lin, and Chang (2015) later found significant differences in Facebook information-seeking behavior by users from Australia, Austria, Japan, Taiwan, and the United States, supporting the notion that cultural differences can influence social media users’ behavior. Despite efforts to create a unified culture within the European Union, Brandtzæg, Heim, and Karahasanović (2011) identified different digital user profiles in Europe and highlighted the gap between Internet users and non-users. Fletcher, Cornia, Graves, and Nielsen (2018) presented the first findings on European (Italian and French) consumption of fake news and misinformation and found different patterns of fake news. This theoretical background leads to the hypothesis that users’ attitudes toward fake news differ among European countries (H4).

Fletcher et al. (2018) also described the relevance of policymakers, publishers, platform companies, and the public in acting as information regulators because an important facilitator of misinformation and fake news dissemination is the role of social media in altering the notion of an information source. Information can be created and shared by multiple sources and is rarely verified by users, especially if the content is passed on by someone who the user knows (Torres et al., 2018).

2.4. Online trust and fake news

Underlying the discovery of fake news is the concept of online trust. In the early days of the Internet, Quelch and Klein (1996) speculated that trust was a key factor in the online relationship between firms and consumers. Other studies have since supported this conclusion, further demonstrating that trust is critical in encouraging online purchases (Wang, Min, & Han, 2016), online engagement with brands (Bianchi, Andrews, Wiese, & Fazal-E-Hasan, 2017), and participation in digital brand communities (Liu, Lee, Liu, & Chen, 2018). The conceptualization of social media presented by Constantinides and Fountain (2008) relies on co-creation, openness, cooperation, commitment, and trust between users. Therefore, trust must be considered not only a short-term issue but also a long-term factor for success in creating digital brand value.

In an analysis of fake news in the context of the U.S. presidential campaign, Guess et al. (2018) concluded that the intensity of social media usage tended to exacerbate selective exposure to misinformation, leading to questions of what sources can be trusted in a social media context. Recently, Chen and Cheng (2019) noted that consumers' brand trust is affected by fake news on social media, and consumers' ability to identify fake news significantly influences consumers' brand trust after being exposed to fake news. Liu et al. (2018) found that consumers' brand trust can be transferred from other users and information sources found on social media, leading to questions of who trusts and can be trusted in a social media environment. Warner-Söderholm et al. (2018) addressed these questions and found that heavy social media users were more likely to trust social media content. Similarly, the authors of the current study noted that those who make less use of social media tend to have greater concerns over the information that peers and third parties spread on social networks. It is therefore hypothesized that tech-savvy users are more likely to trust digital information sources (H5), resulting in a neutral attitude toward policy interventions (H6).

Studies have shown that trust is the key to understanding various human behaviors (Chakraborty & Chakraborty, 2007; Lis, 2013; Tsfati, 2010; Turcotte et al., 2015). Tsfati (2010) found that online news sources became popular and trustworthy because of growing mistrust in traditional media. Thus, trust in media sources can be considered a positive predictor of social media users' behavior (Chen & Cheng, 2019; Gefen & Straub, 2003). Besides trust, several individual characteristics influence users' online behavior. Examples include information literacy, digital skills, and persona motivation profile (Tiago et al., 2019; Yu, Lin, & Liao, 2017). This discussion of the predictors of social media users' attitudes leads to the hypothesis that consumers with a more active digital social persona and more trust in social media sources are more likely to be aware of fake news (H7).

3. METHOD

Fake news and misinformation research is relatively new and has primarily focused on the conceptualization, dissemination patterns, and political effects of fake news (Allcott & Gentzkow, 2017; Bluemle, 2018; Keenan & Dillenburger, 2018; Schapals, 2018; Tandoc et al., 2018). Thus, extant research lacks a general framework of evidence to support the theory of how consumers handle fake news. Given this context, social media websites are considered appropriate platforms to distribute information, regardless of

their reputation and content. Because consumer behavior toward fake news is a complex matter and can jeopardize brand-customer relationships and brand image, the aim of the current study is to discover the types of users who must be acknowledged and treated differently by brand managers. This aim is achieved using segmentation by demographics, lifestyles, and psychographics.

The first level of analysis was descriptive and inferential. The aim was to enable the analysis of the large data set (26,576 respondents) and to help make sense of the data (Sekaran, 2006). In the second phase, the existence of different types of users was investigated using multiple correspondence analysis (MCA). MCA was employed to graphically display the main differences found using the k-means method, a non-hierarchical clustering technique. The chi-square test and the Kruskal-Wallis test were also used to access the significant differences between the main variables and clusters. The third phase consisted of partial least squares structural equation modeling (PLS-SEM). This second-generation multivariate analysis technique has been adopted in prior research on online user behavior (Borges-Tiago et al., 2019; Kamis, Koufaris, & Stern, 2008; Tiago et al., 2019). It enabled testing of the theoretical component-based model presented in this study.

3.1. Sample and data collection

The research objectives were addressed using data from the Flash Eurobarometer 464 on Fake News and Disinformation Online. These data refer to EU citizens' awareness of and attitudes toward the existence of fake news and disinformation online (Commission, 2018). This data source enabled investigation of how Europeans search for information on the Internet and their level of trust in the information they access. In regard to social media, participants were questioned about their behaviors and attitudes toward misleading or fake news. Furthermore, they were questioned about their views on which institutions and media actors should intervene to stop the spread of fake news. TNS Political & Social conducted the survey in all of the 28 EU member states, under the coordination of the Directorate-General for Communication (DG COMM "Media Monitoring, Media Analysis and Eurobarometer" Unit). The survey was carried out in the first week of February 2018. The landline and mobile telephone interviews were conducted in the official language of each country. The final sample consisted of 26,576 respondents from different social and demographic backgrounds.

3.2. Measurement of variables

This data set provided data on a large number of participants (26,576) and covered 28 European countries. Because the data were gathered by a third party, the questionnaire could not be modified for the current study. However, the existing data set was suitable for the purposes of the study. Furthermore, data for a sample of this size would be quite difficult to gather independently. The data set covered five dimensions of analysis: (i) level of trust in news sources, (ii) perceived exposure to fake news, (iii) perceived ability to recognize fake news, (iv) perceived impact of fake news, and (v) responsibility for stopping the dissemination of fake news. Based on the objectives of the current study,

four sets of variables were chosen from these five dimensions. The variables related to information sources were recorded on a categorical scale. The other variables were measured on a Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), where each additional level represented a higher level of trust, importance, or impact.

4. Empirical results

Of all respondents, 47.8% used technological resources, 51.7% were men, 59.1% were over 45 years-old, and 36.9% lived in small and medium-sized cities, whereas 33.8% lived in big cities. In addition, 2,666 were self-employed (10.0%), 8,660 were employees working for third parties (32.6%), 1,706 were manual workers (6.4%), and 13,437 were not working (50.6%). Regarding educational attainment, 52% of respondents had studied for over 20 years (i.e., higher education). Finland, Slovakia, and the Czech Republic had the highest percentage of users of technological resources, with 83.4%, 80.1%, and 75.5%, respectively.

Regarding the use of communication channels, 97.7% of respondents reported that they used traditional media, and 71.4% reported that they used digital media. Traditional media were used mostly by people aged 55 years or older (54.5%), while digital media were used predominantly (57.9%) by people aged 54 years or younger. In terms of social media activity, 48.6% reported daily or almost daily social network use, while 38% never used social networks. Young people (15–24 years) were those who most often used social networks (89.9%).

Regarding encounters with misleading or fake news, 36.2% of respondents reported having such encounters on a “daily or almost daily” basis, while 30.3% reported having encounters “at least once a week.” Additionally, 55.4% trusted that they were able to identify misleading information and fake news.

Using the chi-square test of independence, significant associations were observed between the use of technological resources and all socio-demographic variables, as presented in Table 1. The chi-square test revealed a statistically significant association ($p < 0.0001$) between the variables. However, this test did not identify how the variables were related. Thus, multiple correspondence analysis (MCA) was performed. The use of technology, use of digital resources, channels of communication used, and frequency of use were considered as active variables. The associated variables were indicators related to fake news. The results were synthesized into two orthogonal components that explain 51.9% of the total variance of the original variables. The dimensions reflect the highest contribution and the highest fraction of the total variance in the data.

Table 1 here.

Figure 2 here.

Figure 2 presents a perceptual map, produced by plotting object scores from the MCA. The horizontal axis shows intensity of use, differentiating users of digital resources from non-users (use of digital media, frequency of social media use, and overall use of digital resources). The vertical axis reflects the trustworthiness of information (frequency of

contact with and the trustworthiness of misleading or fake news).

Brandtzæg et al. (2011) argued that different user profiles can be defined in terms of technology use. Figure 2 shows four types of users: (i) those who heavily use all digital features (middle left); (ii) those who almost never or never use digital resources and are not fully convinced of their ability to distinguish fake news (middle right); (iii) those who are moderate users and are convinced they are fully aware of fake news (upper middle); and (iv) those who believe they are unable to detect all misleading and fake news (lower middle). The main characteristics of these clusters lead to the definition of four types of user: “Naïve,” “Resigned,” “Tech-savvy,” and “Smart-tech.”

Table 2 here.

As shown in Table 2, all clusters from this sample were predominantly characterized by young adults and adults. Tech-savvy and Smart-tech users tended to be more prevalent among the first three age groups of 15 to 49 years. This finding is consistent with that of Assael (2005), who discovered that heavy Internet users were predominantly aged 18 to 34 years.

H1 and H2 state that “users with more well-established digital social personas are younger” and “are more likely recognize fake news.” A chi-square test was conducted to test these hypotheses, and significant differences were found between age and digital media use ($\chi^2 = 9626.246$, $p = 0.000$), age and frequency of use of digital media ($\chi^2 = 32298.264$, $p = 0.000$), and age and the type of activities performed on social media ($\chi^2 = 50.378$, $p = 0.000$). More specifically, significant differences were found when comparing the 15–24 age cohort with the remaining cohorts, with the exception of the 25–34 age cohort.

A clear majority of young adults fell into the Tech-savvy cluster (64.3%). They were the most frequent users of social media networks (82.4% on a daily base). Their main activities on social media were to “read and listen to peers’ shared content,” “share original contents or discoveries,” and “share peers’ content” (80.3%). Additionally, significant differences were found between age cohorts and the likelihood of recognizing misleading or fake news ($\chi^2 = 3547.104$, $p = 0.000$). The younger users found in Cluster 3 reported daily encounters with fake news or did not believe in the truthfulness of the content (84.6%), and 51.6% revealed confidence and high confidence (34.1%) in detecting such content. These results support H1 and H2.

Other significant differences were found between those who reported that they used technological resources regarding the frequency of fake news recognition ($\chi^2 = 74.127$, $p = 0.000$) and to the ability to recognize it ($\chi^2 = 120.350$, $p = 0.000$). A similar result was found between the use of social media and the frequency of fake news encounters ($\chi^2 = 707.858$, $p = 0.000$) and the ability to recognize it ($\chi^2 = 554.666$, $p = 0.000$). A cross-tabular analysis of these variables within the clusters showed that the Tech-savvy cluster included users who used all digital resources more intensively (98.9%). These users reported daily use of social media (82.4%) and encounters with fake news or misleading information, which they believed they could recognize. These results support H3.

Figure 3 here.

The fourth hypothesis (H4) proposed the existence of differences in users' attitudes based on country of origin. The Kruskal-Wallis test was used to test this hypothesis. Significant differences were found in the frequency of encounters with fake news by country of origin ($\chi^2 = 1317.774$, $p = 0.000$). Respondents from Finland, Sweden, Germany, and Estonia reported rarely encountering fake news or misleading information, whereas respondents from Hungary, Greece, Spain, Croatia, and France reported that they frequently encountered such content.

Figure 4 here.

Regarding the level of confidence in their ability to unveil fake news, the Kruskal-Wallis test shows significant differences in at least two countries ($\chi^2 = 1006.197$, $p = 0.000$). Respondents from Denmark, Ireland, and Cyprus were more confident of their skills to unveil fake news, while respondents from Belgium, Spain, and Sweden were less confident. These results confirm the existence of different user attitudes toward fake news in Europe (H4).

H5 proposed that tech-savvy users would be more likely to trust digital information sources, resulting in a neutral attitude toward policy interventions. The chi-square test of the trust variables reveals significant differences between user profiles regarding trust in the traditional press such as newspapers and magazines ($\chi^2 = 689.358$, $p = 0.000$), television ($\chi^2 = 1001.982$, $p = 0.000$), radio ($\chi^2 = 780.709$, $p = 0.000$), online press ($\chi^2 = 1898.998$, $p = 0.000$), social media ($\chi^2 = 2030.199$, $p = 0.000$), and webpages with videos and podcasts ($\chi^2 = 1677.718$, $p = 0.000$). In the current sample, respondents from the Tech-savvy and Smart-tech clusters shared similar attitudes regarding information source trustworthiness (see Table 2), and they placed most trust in digital information sources. Therefore, these findings support H5.

A significant relationship was also found between user profiles and the institutions and media actors considered responsible for stopping the spread of fake news, including social media networks ($\chi^2 = 10.071$, $p = 0.018$), press and broadcasting management ($\chi^2 = 404.971$, $p = 0.000$), public institutions ($\chi^2 = 139.734$, $p = 0.000$), and other institutions and individuals ($\chi^2 = 278.562$, $p = 0.000$). Despite showing differences in terms of trust and confidence in finding fake news, the results of the Kruskal-Wallis test indicate no significant differences between the clusters ($\chi^2 = 0.000$, $p = 1.000$) regarding respondents' views on who should act to prevent fake news.

Figure 5 here.

The results show that the respondents in all clusters have a neutral position regarding their acknowledgment of the need to stop spreading fake news and not giving a single entity full responsibility for stopping fake news dissemination. This finding supports H6.

For the PLS-SEM analysis, the unidimensionality of each block in the model had to be verified. Exploratory factor analysis (EFA) was performed to understand the relationships between the constructs, and some low-loading items were removed. The average variance extracted (AVE) was used to measure convergent validity. The AVE should be greater than 0.50, so the results confirm the model's validity (Ringle, 2015). All Cronbach's alpha values for the constructs exceeded the recommended value of .70, indicating that the scales had good reliability (see Table 3). Table 3 also lists the outer weights and outer loadings. After the measurement model had been validated, the structural model was estimated to specify the relationships between the latent variables. The results are presented in Figure 6.

Figure 6 here.

Table 3 here.

The empirical results show that trust influences social media use behavior and fake news awareness. Nonetheless, no significant relationship was found between the motives to use social media and social media behavior or fake news awareness. This result only partially supports H7.

Tech-savvy and Smart-tech users were the two groups that were most active online. Splitting the sample into these two groups and conducting multi-group analysis indicates that Tech-savvy users were less likely than Smart-tech users to notice fake news (see Table 4). The results of a multi-method multi-group analysis (using Henseler's multi-group analysis) reveal significant differences between these two groups regarding the effect of trust on social media behavior and fake news awareness.

Table 4 here.

5. Discussion

In just one decade, social media has revolutionized consumer behavior. When consumers search for brand and product information online, they are exposed to new brand-related information every day, molding their behavior and brand perceptions. This information comes from multiple sources, including brands, other consumers, and Internet and social media sites that are not affiliated with the brands themselves.

As discussed earlier, there is an ongoing debate over social media and digital branding. This debate reflects the initial hope of using the rise of social media to leverage customer engagement and enhance direct relationships with brands. This idea blurs the boundaries between user and marketing content and disrupts traditional branding practices. There is agreement among brand researchers that brand image is created and recreated through this process not only by firms but also by digital users.

In cyberspace, information grows and circulates at an unprecedented rate, but it is not always verified by users or supervisory bodies. Alongside accurate information, fake news, alternative facts, and misleading information proliferate, leaving firms and

consumers wondering whether this access to seemingly endless amounts of information is trustworthy. On social media, fake news is common, driven by the anonymity of the Internet. This fake news can seriously affect both brand image building and the enhancement of digital brand communities.

Moreover, the influx of fake news on social media can misrepresent reality because it enhances skepticism of information sources, potentially undermining firms' digital communication strategies. As previously noted in the literature, trust is one of the main antecedents of brand loyalty, and whatever jeopardizes this trust is a threat that must be carefully analyzed and understood.

To date, most research has focused on English-speaking digital users' behavior toward fake news. The goal of this study was to explore whether European users' attitudes toward fake news or misleading information differed according to these users' digital profile, social media use, trust in media sources, age, and country of origin.

The results reveal a division between digital users and non-digital users. This finding is somewhat consistent with other studies of the use and non-use of technology in Europe. For the sample of digital users, the results of this study also reveal the existence of different user profiles. Like the findings of Warner-Søderholm et al. (2018), the results of this study show that young people have a more active role in digital environments and are more likely to recognize fake news. In addition to revealing age differences, this study shows that users from Denmark, Ireland, and Cyprus are more confident in their ability to unveil fake news, whereas respondents from Belgium, Spain, and Sweden are less so. The study also shows that users in Finland, Sweden, Germany, and Estonia rarely discover fake news or misleading information. These results confirm that in Europe, consumer attitudes toward fake news may differ, leading to the conclusion that national and cultural differences might influence the attitudes of digital users (Dinev et al., 2009).

Thus, the results of this study indicate that not all digitally active users are able to recognize fake news or trust their ability to recognize fake news. This conclusion is supported by the differences between the Tech-savvy and Smart-tech clusters.

Although social media allow individuals to access and share information and news through a process of snowballing, they also highlight the need for veracity checks (Visentin et al., 2019). Most participants in this study, regardless of their digital profile, considered it important to stop the dissemination of fake news and misleading information. However, they did not assign the responsibility for this task to a single organization.

Another salient finding of this study is the existence of different perceptions among European users in terms of the frequency and ability to unveil fake news or misleading information. These differences may arise because of the varying cultural and socio-economic backgrounds of the EU member states.

Although the results of this study are of interest, its findings do not show how to overcome the problems or issues arising from the spread of fake news or misleading information online. Only minor differences were found between different social media user profiles in the analyzed dimensions. Although the Flash Eurobarometer is a large survey of European users, it restricts further analysis in certain areas, namely profiling users by technology acceptance and adoption, motivations for using digital media as

information sources, the use of information validation methods, and other elements of online trust. This constraint represents a limitation of this study.

6. Practical implications and future research

Several managerial implications can be drawn from this study. These implications provide insight for brand managers and policymakers. First, four clusters with different user attitudes exist throughout Europe, but in varying proportions. This finding can be helpful to practitioners when developing multi-country communication strategies because it highlights the need to consider the state of mind of different groups of consumers and their preferred information vehicles. Second, this research can help practitioners focus their concerns differently in specific countries and target audiences. For instance, when planning a digital brand communication strategy for countries with high levels of fake news (e.g., Greece, France, and Spain), brand managers should focus on small details that can be easily validated as truthful by users to increase their perceptions of trustworthiness and generate a positive attitude. In northern European countries such as Finland and Sweden, this kind of attention is unnecessary.

Third, these findings might interest brand managers who are concerned about the effects of fake news on their brand image because the findings show that trustful sources of information directly affect the awareness of and ability to discover fake news. Therefore, these results can be combined with the conclusions of Visentin et al. (2019) to help determine where to post content to improve brand trust.

Fourth, the results also provide a better understanding of fake news. As today's younger generations age, the current concerns of brands about fake news or misleading information will diminish because the new generations are better informed and are more able to detect such content. Because users from southern Europe predominantly reported high contact with fake news and showed similar characteristics to those found for the United States, future research should further explore this subgroup's behaviors.

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Table 1 Significant associations

Variables	χ^2	p-value
Country	4329.659	0.000
Age group	2748.622	0.000
Type of community	96.212	0.000
Occupation of respondent	1831.506	0.000
Age education	662.793	0.000
Gender	407.854	0.000

Table 2. Relationship of clusters with explanatory variables

	Naïve (n = 2563) 9.64%	Resigned (n = 6004) 22.59%	Tech savvy (n = 7405) 27.87%	Smart tech (n = 10604) 39.9%
Use of traditional media				
Yes	94%	100%	95%	100%
No	7%	0%	5%	0%
Use of digital media				
Yes	16%	16%	99%	97%
No	84%	84%	1%	3%
Frequency of online social networks use				
Daily	4%	4%	82%	58%
Once a week	1%	3%	3%	22%
Once a month	0%	2%	1%	5%
Never	95%	92%	14%	15%
Trust in traditional media (newspapers and magazines)				
Totally trust	12%	9%	10%	11%
Tend to trust	47%	60%	56%	68%
Tend not to trust	25%	22%	25%	17%
Do not trust at all	16%	10%	9%	4%
Trust in digital media (newspapers and magazines)				
Totally trust	7%	5%	6%	6%
Tend to trust	33%	41%	55%	64%
Tend not to trust	26%	27%	31%	24%
Do not trust at all	34%	27%	8%	5%
Age				
15–24 years	1%	1%	10%	7%
25–34 years	2%	2%	15%	11%
35–44 years	5%	4%	20%	17%
45–54 years	11%	11%	20%	21%
55–64 years	22%	21%	19%	21%
65 years and older	59%	62%	17%	23%
Type of community				
Rural area or village	32%	37%	27%	31%
Small or middle-sized town	36%	37%	36%	37%
Large town	31%	26%	37%	31%
DK (SPONT.)	1%	1%	1%	1%
Gender				
Male	48%	35%	54%	44%
Female	52%	65%	46%	56%

Table 3. Descriptive statistics (n = 26,576)

Construct and items				
Trust in digital media (Cronbach's alpha: .701; AVE: 0.534; rho_A:1.000)			Outer weight	Outer loading
TDM1	Online newspapers and news magazines	Mean: 2.62 SD: 1.16	0.079	0.334
TDM1	Online social networks and messaging apps	Mean: 3.10 SD: 1.31	0.356	0.804
TDM1	Online news aggregators	Mean: 3.38 SD: 1.20	0.463	0.857
TDM1	Video hosting websites	Mean: 3.53 SD: 1.24	0.364	0.801
<hr/>				
Motivation (Cronbach's alpha: .707; AVE: 0.632)				
MTV1	Read or listen to what is shared by others	Mean: 0.57 SD: 0.50	0.434	0.736
MTV2	Share things you found yourself	Mean: 0.27 SD: 0.44	0.446	0.835
MTV3	Share things others have shared with you	Mean: 0.27 SD: 0.44	0.380	0.810
<hr/>				
Social media (rho_A:1.000)				
SMU1	Social media usage	Mean: 2.44 SD: 1.48	1.000	1.000
<hr/>				
Fake news awareness (rho_A:1.000)				
FNA1	Perception of contact with fake news and misleading information	Mean: 2.32 SD: 1.27	0.715	0.861
FNA2	Ability to unveil fake news and misleading information	Mean: 2.30 SD: 0.92	0.529	0.726

Table 4. Results from Henseler's multi-group analysis

	Path coefficients original		Path coefficients-diff	
	Tech-savvy	Smart-tech	Tech-savvy – Smart-tech	p value
Motivation -> Fake news	0.023	0.024	0.001	0.161
Motivation -> Social media	-0.002	-0.017	0.019	0.089
Social media -> Fake news	-0.108	-0.063	1.143	0.001
Trust -> Fake news	0.110	0.105	0.005	0.000
Trust -> Social media	0.428	0.394	0.034	0.000

Figure 2. Perceptual map

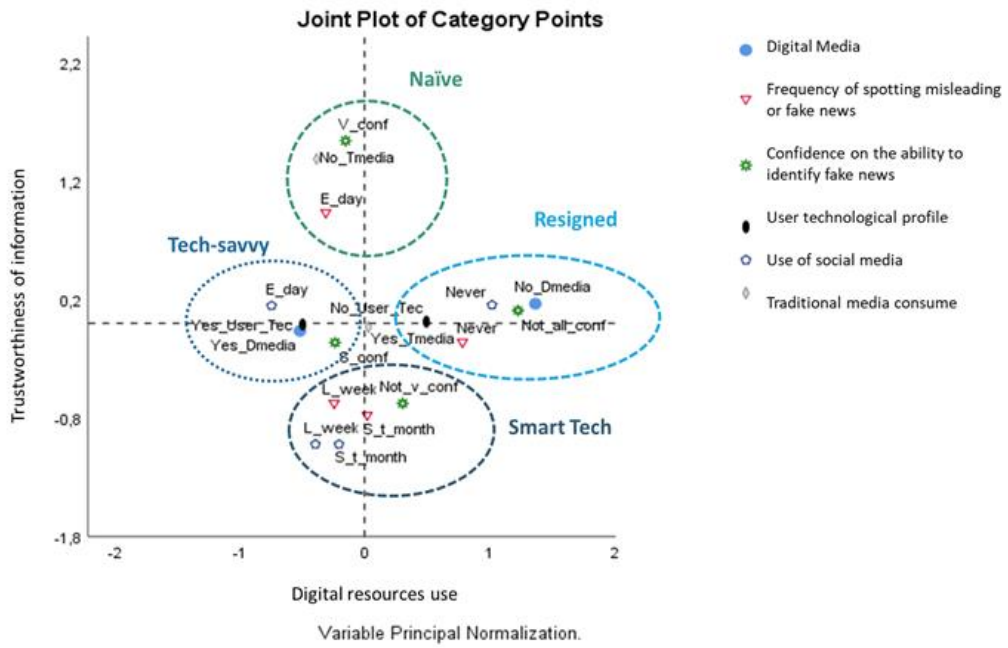


Figure 3. Box plot between user profiles and ability to recognize fake news

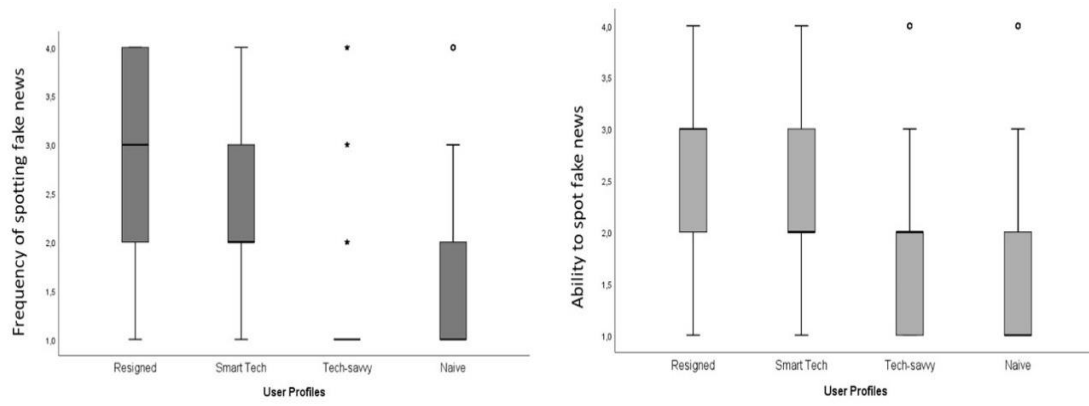


Figure 4. Box plot between frequency and ability to recognize fake news by country

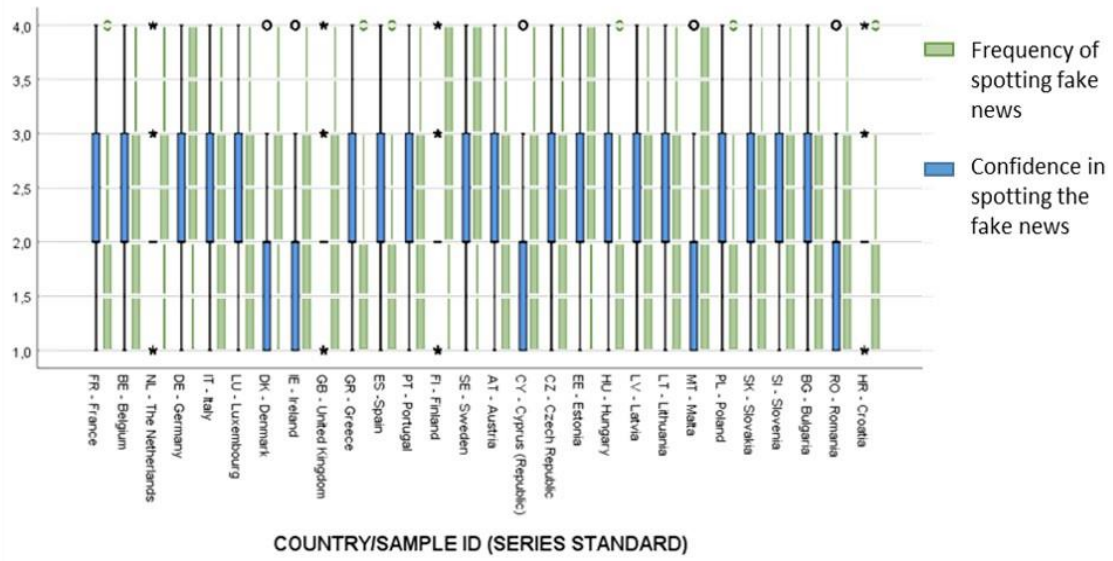


Figure 5. Box plot with clusters and responsibility of stopping fake news dissemination

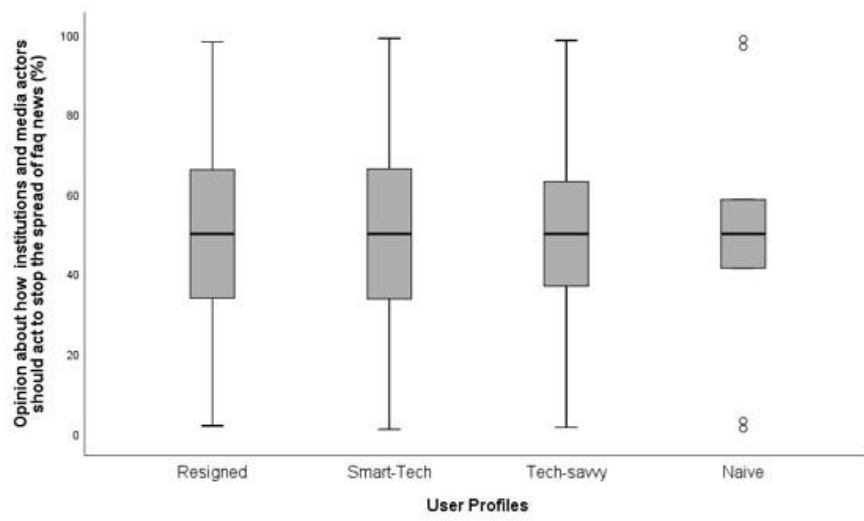


Figure 6. Model estimation

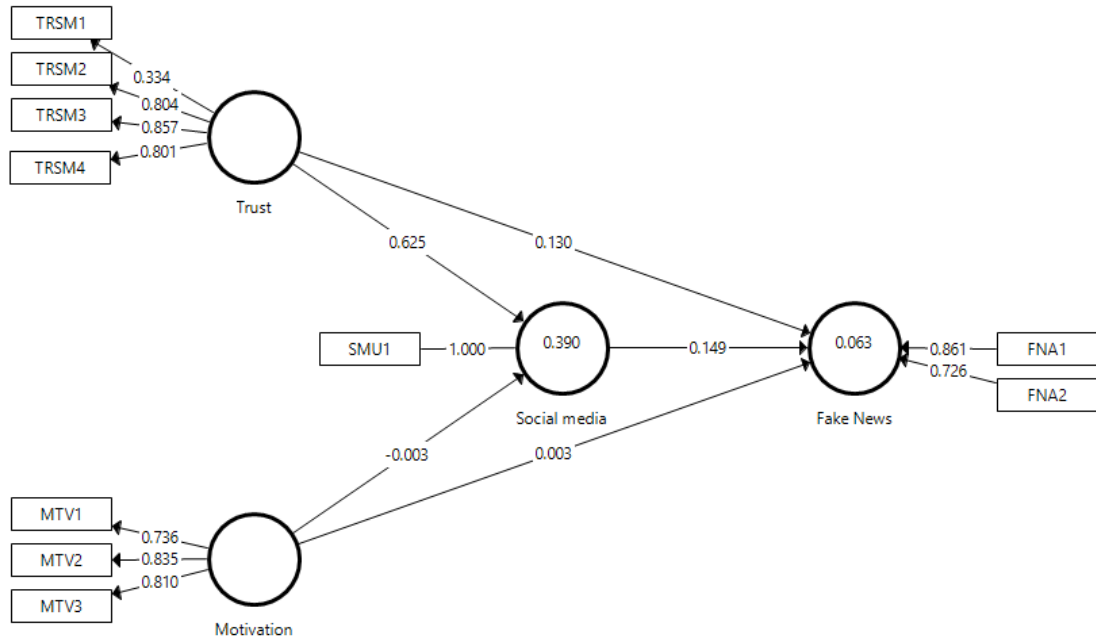


Figure legends

Figure 1. Visualization of the key concepts network

Figure 2. Perceptual map

Figure 3. Box plot between user profiles and ability to recognize fake news

Figure 4. Box plot between frequency and ability to recognize fake news by country

Figure 5. Box plot with clusters and responsibility of stopping fake news dissemination

Figure 6. Model estimation