Faculty VII – Economics and Management
Institute of Business Administration
Digital Markets Lab
Prof. Dr. Nancy Wünderlich

Research paper for course "Digital Markets"

Fake News in Digital Markets

Author:

Sid Lamichhane

Study: Information Systems Management M. Sc.

Contact: lamichhane@tu-berlin.de

Berlin, December 19, 2024

Supervision

Prof. Dr. Nancy Wünderlich

Abstract

Fake news is a major global issue, endangering democratic processes and societal harmony. This paper examines fake news through the lens of digital markets. It redefines fake news as both: a digital good and a new type of dark pattern in digital markets. The main contribution of this paper is its impact analysis of fake news on digital markets. The impact analysis yielded the theoretical discovery of the "fake news loop" on digital markets. Furthermore, this paper revealed the changes in the trust between actors in digital markets. Lastly, the impact analysis enabled this paper to suggest countermeasures for each actor to combat fake news. As conclusion, this paper highlights that understanding whether fake news benefits or harms digital news platforms is crucial for developing effective strategies. If fake news benefits platform providers, stronger regulatory measures are needed. Conversely, if fake news is harmful, platform providers could be valuable allies in combating fake news, due to their pivotal role in fake news and digital markets.

Contents

1 Introduction

Fake news is disinformation primarily disseminated online to deceive or mislead readers for financial, political, or other benefits (Zhang and Ghorbani, 2020). Fake news represents a challenge in practice and research.

The World Economic Forum (2024) classifies fake news as the top global problem while highlighting the urgency of its prevention. In the European Union, more than 80% of the population is concerned about the impact of fake news, perceiving it as a serious threat to democracy (Directorate-General for Communication, 2024). One of the primary dangers of fake news is its ability to influence democratic elections, as evidenced by its role in the 2016 U.S. presidential election (Zhang and Ghorbani, 2020; Beauvais, 2022; Lee, 2020). Additionally, fake news can incite hate and division, undermining the peaceful coexistence of diverse communities within a society. Anti-democratic groups often exploit fake news as a propaganda tool to advance their political agendas and target opponents (Vamanu, 2019). A recent example includes riots in the United Kingdom, where fake news incited violence against Muslims, further fueled by right-wing political leaders seeking to gain from this fake news (Hoppen, 2024). Therefore, fake news can destabilize societies and pose a direct challenge to democratic values in practice.

In research, fake news is extensively discussed. The main research areas surrounding fake news are:

1. the reasons for the spread and belief in fake news (Zhang and Ghorbani, 2020; Beauvais, 2022; Pennycook and Cannon, 2018),

2. the diverse impact of fake news (Olan et al., 2022; Rocha et al., 2021; Tandoc, 2019), and

3. the detection and prevention of fake news (Aïmeur et al., 2023; Hamed et al., 2023; Hu et al., 2024)

These research areas span multiple disciplines, including computer science, psychology, and communication, revealing the complexity and interdisciplinary nature of fake news in research. Despite the existing research, fake news remains a hot topic with no definitive solutions, necessitating continued exploration and innovation in this field.

This paper contributes to these challenges in practice and research. First, this paper contextualizes fake news within digital markets considering the cognitive and psychological factors of fake news (see 2.3). Second, it provides an overview of the current status of research related to

fake news (see 2.4). Third, it analyzes the diverse impacts of fake news on digital markets (see 3). Fourth, it describes existing and potentially new solutions to combat fake news, offering actionable recommendations for each actor in digital markets (see 4.1). Finally, it proposes open research questions, providing a pathway for future research on fake news in digital markets. Overall, this paper contributes to the research of fake news by examining it from the perspective of digital markets as a research discipline. This approach enriches the existing interdisciplinary research by providing an alternative viewpoint. The paper addresses the following research questions:

- What is the current state of research on fake news in digital markets? (see 2.4)

- How can fake news be contextualized within digital markets? (see 2.3)

- What is the impact of fake news on digital markets and their actors? (see 3)

- How can actors in digital markets effectively counter fake news? (see 4.1)

To answer these research questions, the paper begins by defining key concepts, including digital markets and fake news, and provides background on the psychology of fake news. This foundation is followed by an exploration of how fake news is contextualized within digital markets. The paper then reviews the current state of research on fake news in digital markets. After establishing this background, the paper analyzes the impact of fake news on digital markets, focusing on aspects such as digital market mechanisms, management of market participants, revenue models, and regulation. To clearly present the findings from the impact analysis and standardize terminology around fake news, the paper introduces a model of digital markets, offering a common framework for future research discussions. Following the impact analysis, the paper suggests strategies for countering fake news for each participant in digital markets and highlights existing methods to combat fake news. Finally, the paper proposes open research questions for future work based on the results of the impact analysis.

2 Background

This chapter provides background on fake news in the context of digital markets. First, digital markets and platforms are defined and described. Second, fake news is defined, and the cognitive and psychological causes of fake news are explained. Third, fake news is put in the context of digital markets. Lastly, an overview of the current research status around fake news is given.

2.1 Digital markets and platforms

From an economic perspective, digital markets are virtual marketplaces that enable direct interactions among multiple participant groups. The value of the digital market for one group of participants increases as the number of participants in the other group grows. These digital markets operate on digital platforms, which act as intermediary technologies facilitating direct interactions between distinct participant groups via the Internet (Wünderlich, 2024a, p.34).

2.2 Fake news

Fake news includes various types of false stories or reports primarily disseminated online to deceive or mislead readers for financial, political, or other benefits (Zhang and Ghorbani, 2020). To deceive readers, fake news exploits cognitive biases and psychological mechanisms (Beauvais, 2022). These cognitive and psychological factors causing the belief in and spread of fake news are outlined in the following.

Cognitive and psychological causes of fake news

Cognitive and psychological factors cause individuals to believe in fake news (Beauvais, 2022). Commonly studied cognitive and psychological factors include confirmation bias (Beauvais, 2022; Vicario et al., 2019; Zhang and Ghorbani, 2020), emotions (Beauvais, 2022; Ferrara, 2015; Martel et al., 2020), and familiarity (Beauvais, 2022; Nadarevic et al., 2020; Zhang and Ghorbani, 2020).

Confirmation bias

The Confirmation bias drives individuals to seek, interpret, and acquire information that aligns with their preexisting beliefs and expectations (Beauvais, 2022). In the context of fake news, numerous experiments have demonstrated that confirmation bias contributes to the belief in and dissemination of fake news on digital platforms, thereby amplifying the spread of fake news (Beauvais, 2022). For instance, experiments by Calvillo et al. (2021) illustrate that supporters of former US President Trump, following his loss in the 2020 elections, were more likely to believe and share fake news about election fraud propagated by Trump, as it resonated with their existing political beliefs.

Emotions

The emotional state of news readers significantly influences their ability to discern whether news is fake or genuine (Martel et al., 2020). Experiments conducted by Martel et al. (2020) reveal that individuals who rely more on their emotions are more likely to believe fake news. Additionally, Martel et al. (2020) demonstrate that fake news with emotionally charged content is more likely to be believed than neutral content.
In addition to affecting the perception of fake news, emotions promote its dissemination. Ferrara (2015) found that fear-laden fake news spreads rapidly and widely, exacerbating fear and consequently propagating more fake news.

Familiarity

Familiarity refers to the psychological phenomenon where individuals are more likely to regard information as true if it feels familiar to them (Begg et al., 1992). Fake news can achieve familiarity through the illusory truth effect, which is the tendency to believe false information after being repeatedly exposed to it (Calvillo and Smelter, 2020). Pennycook and Cannon (2018) demonstrated the existence of the illusory truth effect for fake news through experiments. These experiments included exposing participants to headlines such as "Trump to Ban All TV Shows that Promote Gay Activity Starting with Empire as President." Initially, only 5% of participants rated this headline as accurate. However, just one prior exposure doubled the percentage of participants who rated it as accurate. These effects intensified with further exposure and persisted in a follow-up session one week later.
The illusory truth effect can also overcome confirmation bias, illustrated by Pennycook and Cannon (2018) using the headline "BLM Thug Protests President Trump with Selfie... Accidentally

Shoots Himself In The Face". Initially, only 11.7% of Trump opposers, compared to 18.5% of Trump supporters, rated this headline as accurate, indicating the case of confirmation bias. However, after just one prior exposure, the perceived accuracy of the same headline increased for both groups, reaching 17.9% among Trump opposers and 35.5% among Trump supporters. This demonstrates that the illusory truth effect can enhance the believability of fake news headlines, even when there is a strong political motivation to reject them.

Another way fake news achieves familiarity is by mimicking genuine news, such as copying its language and format (Billard and Moran, 2023; Zhang and Ghorbani, 2020). This mimicry can extend to copying the names, logos, and Uniform Resource Locators (URLs) of legitimate news publishers (Tandoc, 2021). A notable example is the former fake news site "abcnews.com.co", which exploited user familiarity with the logo, name, and URL of ABC News (ABC News, 2024; Murtha, 2016).

2.3 Fake news in digital markets

In the context of digital markets, fake news is either a digital good or a dark pattern of digital markets. Both perspectives are illuminated in the following.

Fake news as digital good

Digital goods are digital products and services that can be represented, transmitted, and processed using digital data. They are intangible means for addressing needs, which can be developed, distributed, or utilized through information systems (Wünderlich, 2024a, p. 18). Following the definition of Wünderlich (2024a), fake news is a digital good because it is a digital product developed, distributed, and utilized by users of digital platforms, such as Facebook (Meta Platforms, 2024a). Considering the cognitive and psychological causes of fake news, it addresses needs, such as confirmation (see 2.2). As a digital good, fake news creates a business with a market estimated to be worth 2.6 billion USD in 2021 (Statista Search Department, 2023).

Fake news generates profits for its publishers through advertising revenue (Bakir and McStay, 2018). For instance, during the 2016 US presidential election, a notable increase in fake news on Facebook was linked to computer science students and teenagers in Veles, Macedonia. They created numerous US politics websites with American-sounding names, such as "USADaily-Politics.com". Their websites and content attracted large audiences and generated advertising revenue in the realm of thousands. The primary motivation for these activities was financial

gain rather than political propaganda.

Besides fake news publishers, digital platform providers also profit from fake news. Investigations by the Bureau of Investigative Journalism revealed that Facebook profited from fake news surrounding vaccination, despite promises by its CEO, Mark Zuckerberg, to prioritize user protection over profit maximization (Emma Graham-Harrison and Heall, 2021; Shinal, 2017). Generally, fake news exploits the existing infrastructure of digital platforms intended for the distribution of legitimate news, but due to the lucrative revenue from fake news, specialized platforms for fake news have also emerged (Zhang and Ghorbani, 2020).

Fake news as dark pattern of digital markets

This paper regards dark patterns as tricks used by websites and apps to deceive their users into making unintended decisions, based on a comparative analysis of various definitions (Mathur et al., 2019; European Data Protection Board, 2023; Kozyreva et al., 2020; Brignull, 2024).

The classification of fake news as a dark pattern is debatable. On the one hand, fake news can be considered a dark pattern because it deliberately aims to deceive users regarding the authenticity of the information.

On the other hand, fake news is not a single trick, but rather a collection of tricks. Therefore, categorizing fake news within a single type of dark pattern is challenging. For instance, the emotional manipulation employed by fake news might be classified under the "stirring" category (European Data Protection Board, 2023), while its repetitive nature aligns more with the "overloading" category (European Data Protection Board, 2023).

Moreover, the clear intent of websites or apps to use fake news as a dark pattern is debatable. While specific websites, such as "USADailyPolitics.com", intentionally use fake news (Bakir and McStay, 2018), it is more commonly the case that users of websites and apps exploit the underlying digital platform to create and spread fake news to deceive others intentionally (Beauvais, 2022; Hoppen, 2024; Zhang and Ghorbani, 2020). The explicit intent of platform providers to exploit users via fake news as a dark pattern appears to be absent based on their stated policies, as demonstrated by Facebook (Meta Platforms, 2017; Shinal, 2017). However, the financial benefits digital platforms gain from allowing fake news questions their intent (see 2.3). Without insight into the actual intentions of platform providers, this paper concludes that fake news is not directly utilized by websites or apps. However, if platform providers intentionally tolerate fake news, they are indirectly designing interfaces that facilitate its spread as a dark pattern.

Ultimately, this paper proposes that fake news represents a new category of dark patterns. This category encompasses various tricks that exploit cognitive biases and psychological mechanisms to deceive readers into believing false information.

2.4 Current research

To determine the current research status on fake news in digital markets, this paper uses Google Scholar to conduct a literature review limited to peer-reviewed papers published in 2023 and 2024. A selection of current research relevant to this paper is presented below.

Ruiz (2023) examines the role of digital news platforms regarding the spread of fake news, emphasizing how their market structures create financial incentives that lucratively reward fake news writers. Ruiz (2023) argues that fake news is an expected outcome, rather than an anomaly, of the current digital news market. For future work, Ruiz (2023) proposes four main research areas: identifying market beneficiaries of fake news, examining how engagement metrics drive content production, developing market-based content moderation strategies, and exploring the democratic governance of digital platforms. To counter fake news, Ruiz (2023) calls for adapting the business models of digital news platforms to reduce their reliance on engagement-driven incentives. Moreover, Ruiz (2023) advocates regulation and market restructuring to mitigate the financial motivations for spreading fake news.

Cassar (2023) investigates the spread of fake news and how to counter it. Through surveys and interviews, Cassar (2023) reveals a consensus on the essentialness of a multidisciplinary approach to combat fake news effectively. Cassar (2023) highlights how fake news exploits technological advancements to spread faster. Furthermore, Cassar (2023) underscores the need for a comprehensive strategy that involves multiple stakeholders, including governments and digital news platforms, to safeguard the authenticity of digital news and support its readers. As conclusion, Cassar (2023) derives that fake news is a global challenge worsened by technological advances, including machine learning models used to generate fake news fast. Despite public awareness, trust in digital media has diminished, particularly among younger generations, due to the rapid spread of fake news on social media platforms. Cassar (2023) identifies the complexity of fake news and the lack of a unified action plan to address it, suggesting that current efforts are insufficient without substantial backing. Recommendations for countering fake news focus on governance and regulation. According to Cassar (2023), future research should explore the psychological aspects of fake news to develop more robust solutions against fake news.

The current research landscape, as reviewed in this paper, largely agrees on the need for regulation

to address the issue of fake news. Consequently, recent studies have begun evaluating the effectiveness of existing regulations in combating fake news (Leiser, 2023; Hausknecht and Hilger, 2023; Pollicino, 2023). This paper contributes to this discussion by providing an overview of the European Union's regulations and guidelines designed to counter fake news (see 3.4).

Building on the work of Ruiz (2023), which also examines fake news through the lens of digital markets, this paper goes deeper into identifying the beneficiaries of fake news, as explored in the impact analysis (see 3). This paper also investigates how the revenue models, as part of the business model of digital news platforms, both affect and are affected by fake news (see 3.3). This investigation enhances the understanding of how fake news can be countered through the adaptation of digital platforms' business models, as suggested by Ruiz (2023).

Moreover, this paper aligns with the research of Cassar (2023) by considering psychological aspects of fake news, e.g. for suggesting countermeasures (see 4.1). The comprehensive overview of countermeasures provided in this paper lays the groundwork for developing a unified action plan, as recommended by Cassar (2023).

3 Impact of fake news on digital markets

To analyze the impact of fake news on digital markets and their actors, this paper models a simplified digital market with news as a digital good. In this model, news can be either fake or genuine, with the authenticity known only to the writer of the respective news. The model includes the following actors:

- *readers* as the market participants that consume news,

- *writers* as the market participants that supply news, and

- *platform providers* that operate the digital news market for profit, generated by the activity of readers and writers.

Facebook is an example platform provider that operates digital news markets as modeled (Meta Platforms, 2024a). The users of Facebook are readers, writers, or both at the same time. As a platform provider, Facebook runs a digital platform that connects its readers and writers. In return, Facebook profits from the activity of its readers and writers, attracting diverse marketers who pay Facebook to display their advertisements to its users (Franek, 2024). Advertising is Facebook's main revenue source, generating 132 Billion USD in 2023 (Meta Platforms, 2023, p. 75).

This paper utilizes this model of digital news markets and examples, such as Facebook, to demonstrate how fake news impacts digital markets and their actors: readers, writers, and platform providers.

3.1 Mechanisms of digital markets

Digital markets are characterized by their unique mechanisms, such as network and lock-in effects (Wünderlich, 2024b). In the following, this paper outlines how both effects are impacted by fake news.

Network effects

Network effects in digital markets exist when their value to individual market participants depends on the size and activity of the digital market (Shapiro and Varian, 2008). Digital

news markets experience network effects (Benzell and Collis, 2022; Knee, 2018). The example of Facebook demonstrates how digital news markets benefit from positive direct and indirect network effects for both readers and writers (Zhu and Iansiti, 2019). Positive direct network effects in digital news markets occur when an increase in the number or activity of readers encourages even more readers to join or become more active. A similar dynamic applies to writers, where increased writer participation attracts additional writers. This results in an attraction loop in digital news markets, which leads to more users and network activity (Belleflamme and Peitz, 2021). Positive indirect network effects occur when an increase in the number or activity of readers attracts more writers, and vice versa. A larger audience of readers can attract more writers who want to reach them, while more content from writers can draw in additional readers. This interaction creates an attraction spiral in digital news markets, which leads to more users and network activity (Belleflamme and Peitz, 2021).

Fake news and network effects mutually impact each other, creating a cyclical interaction pattern. Fake news spreads faster and more widely than genuine news, increasing network activity among readers (Lee, 2020; Vosoughi et al., 2018). This heightened network activity triggers an attraction loop on the readers' side (Wünderlich, 2024b, p. 14). Consequently, readers become more active and engaged with fake news. As more readers engage with specific fake news, it gains credibility. For example, when fake news stories receive high numbers of likes and shares, they are often perceived as more legitimate Ali et al., 2021; t'Serstevens et al., 2022. This effect is compounded by the illusory truth effect, where repeated exposure increases the likelihood of fake news being considered true (see 2.2). Simultaneously, increased reader activity rewards fake news writers, either financially through ad revenue or ideologically through the successful dissemination of their views and beliefs (Zhang and Ghorbani, 2020; Lee, 2020; Braun and Eklund, 2019). These rewards motivate writers to continue producing fake news, triggering an attraction loop on the writers' side. This newly produced fake news once again increases network activity among readers. Consequently, the mutually reinforcing impact of fake news and network effects creates a cycle that promotes network activity and the acceptance of fake news. This "fake news loop" in digital news markets is illustrated in Figure 3.1.
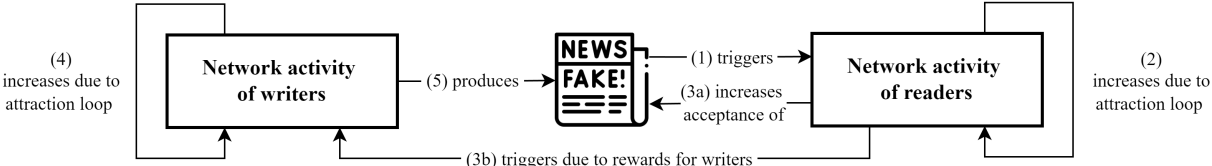

Figure 3.1: The "fake news loop" boosts network activity and fake news' acceptance and production

Lock-in effects

Lock-in describes actions that increase the cost for users to switch from their current digital platform to a competing one (Shapiro and Varian, 2008). Fake news achieves lock-in of readers in digital news markets due to its exploitation of cognitive biases and psychological mechanisms (see 2.2). For instance, the confirmation bias makes switching to a platform offering genuine news costly for readers, as it involves experiencing discomfort, rejection, and confrontation with information that challenges their pre-existing beliefs. These reader reactions are evident in research on echo chambers, which demonstrates how individuals prefer being in environments that reinforce their viewpoints (Quattrociocchi et al., 2016; Fantl, 2021; Nguyen, 2020).

3.2 Management of market participants

Digital platforms create a unique triadic relationship between market participants, radically different from traditional business models, where there is no direct interaction between buyers and sellers (Chakravarty et al., 2014; Wünderlich, 2024c). In digital news markets, platform providers connect readers and writers by establishing a digital platform for direct news exchange, thus interconnecting readers, writers, and platform providers to form a triadic relationship.

Figure 3.2 illustrates how fake news impacts the trust relationships between readers, writers, and platform providers.

Readers rely on platform providers for accurate information, but the prevalence of fake news undermines their trust in the content (Kim et al., 2021). This worsens the existing low trust readers have towards platform providers compared to traditional news outlets, such as print and television (Martens et al., 2018). Consequently, fake news further increases readers' distrust of platform providers.

Regarding the relationship between readers and writers, readers must decide which writers to trust. Readers often end up trusting fake news writers, as studies indicate a shift in trust towards fake news media among readers in the US, Europe, and Asia (Kim et al., 2021). This shift signifies a competition among writers for readers' trust, with both genuine and fake news writers striving to have their content regarded as genuine.

Fake news can erode the trust of genuine news writers in digital platforms, as exemplified by the case of X (formerly known as Twitter). Several genuine news writers, including the "Australian Broadcast Channel," left X due to fake news, mentioning the dissolution of the trust and safety team responsible for combating hate speech and fake news as a major concern (Mitchell, 2023;

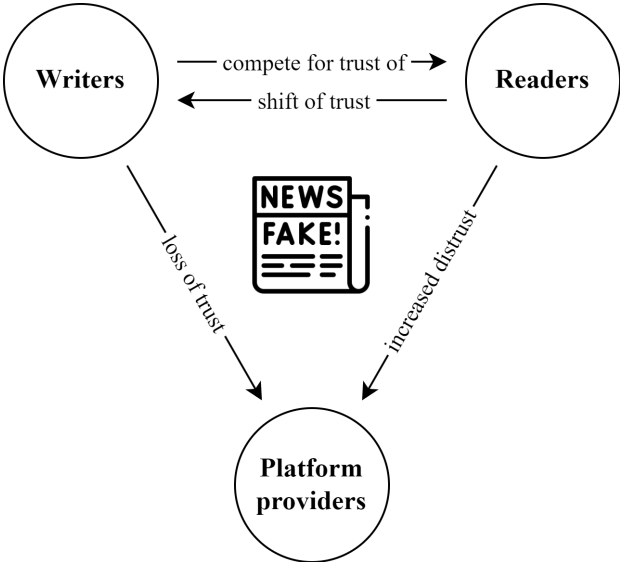Meade, 2023). These examples demonstrate the loss of writers' trust in platform providers due to fake news.

Figure 3.2: Impact of fake news on the trust in the triadic relationship between the actors of digital news markets: writers, readers, and platform providers

3.3 Revenue model

Revenue models define how businesses transform the value they provide to their customers into revenue and profit (Taeuscher and Laudien, 2017). Fake news and the revenue model of digital news platforms are interrelated. Fake news can influence the success of revenue models, while the chosen revenue model can affect the spread of fake news.

Fake news can have positive or negative impacts on the success of revenue models. In this paper's model of digital news markets, platform providers use targeted advertising as their revenue model, similar to Facebook (Franek, 2024). Through advertising, readers and writers can access digital news platforms without direct financial costs. Instead, they pay with their personal data, which platform providers collect to attract marketers with advertisements directly targeted to specific consumer groups. To gather as much data as possible, platform providers require high engagement and activity from readers and writers (Franek, 2024; Nikhilesh Dholakia and Atik, 2023). Fake news can increase this activity on digital news platforms (see 3.1), leading to more data for targeted advertising and potentially more profit for platform providers. However, fake news can also erode trust, causing a loss of market participants (see 3.2). This negatively impacts

the success of targeted advertising revenue models. Additionally, Visentin et al. (2019) conclude that advertisements placed next to fake news may be less effective because the perceived lack of credibility negatively affects readers' attitudes toward the advertised brands. This negative impact can reduce advertisers' willingness to advertise on digital news platforms. For instance, advertisers departed from platform provider X to safeguard their brand against the persistent prevalence of fake news (Adgate, 2023). Therefore, fake news can have both negative and positive influences on the success of advertising revenue models.

Due to the potential positive effect of fake news on the success of platform providers' revenue models, fake news can financially incentivize platform providers to tolerate fake news, fostering its acceptance and spread (Ruiz, 2023). Therefore, the choice of revenue model can impact the spread of fake news.

3.4 Regulation

Regulations are specific legislative interventions in the conduct of business aimed at certain individuals or companies. Their main objective is to enhance market efficiency and minimize welfare losses (Mehnert and Erbsland, 1993). According to Martens et al. (2018), fake news can cause market failure by eroding reader trust and making it difficult to distinguish between high-quality and low-quality news, resulting in decreased demand for genuine news and overall welfare loss for both readers and writers. To address this issue of adverse selection, as described by Akerlof (1970), regulating fake news in digital news markets should be considered. This paper outlines how the Digital Services Act (DSA) (European Parliament and Council of the European Union, 2022, hereafter DSA) regulates fake news in digital news markets.

Although DSA does not specifically address fake news, it regulates digital news platforms in the European Union in a way that helps combat fake news. For example, DSA mandates that platform providers designate a single point of contact to enable readers and writers to communicate directly and rapidly (DSA, Article 12). This requirement ensures that users can easily report issues, including fake news, and receive timely responses. By facilitating direct and effective communication, these provisions enhance the ability of readers and writers to report and address the spread of fake news. Therefore, the designated single point of contact can help address trust issues between readers, writers, and platform providers (see 3.2).

Furthermore, DSA mandates, in Article 35, that very large digital news platforms, as defined under Article 33, address risks related to electoral processes and civic discourse through analysis, reporting, and mitigation measures. According to European Commission (2024), the Slovak

parliamentary elections in 2023 marked the first application of this DSA regulation. In this example, DSA prompted platform providers to improve fact-checking capabilities and intensify efforts against fake news, thus reinforcing electoral integrity. Therefore, this example shows the legitimacy and effectiveness of DSA, which fines platform providers up to 6% of their annual worldwide turnover in cases of non-compliance (DSA, Article 52).

Besides DSA, the EU Code of Practice on Disinformation also regulates fake news in digital news markets. The code requires very large digital news platforms under DSA to conduct specific countermeasures against fake news. Such measures include demonetizing disinformation and monitoring existing and emerging manipulative behavior (Directorate-General for Communication, 2024).

4 Conclusion

After analyzing the impact of fake news on digital markets, this paper concludes with an overview of how each actor can counter fake news. Subsequently, as part of future work, this paper outlines research questions that remain open from its impact analysis of fake news in digital markets. Lastly, this paper highlights one possible research design for one open research question for future work that is crucial for better understanding fake news and developing its countermeasures.

4.1 Countering fake news

Each actor in digital news markets has different solutions for the problem of fake news. This section outlines how readers, writers, and platform providers can counter fake news.

Readers

Readers can counter fake news through education. Beauvais (2022) shows how high digital literacy protects readers from fake news. Similarly, the ability to think analytically reduces belief in fake news because analytical thinking can bypass the situation that emotions are deciding about the credibility of news (Martel et al., 2020). Acquiring digital literacy and analytical thinking skills requires effort from readers and access to educational resources. With the signing of the "EU Code of Practice on Disinformation" platform providers, such as Facebook, Google, and TikTok, committed in 2022 to improve the media literacy of readers (Directorate-General for Communication, 2024; European Comission, 2024). For instance, Facebook provides online resources for kids, parents, and educators to empower them as readers while promoting their digital literacy skills (Meta Platforms, 2024b). Besides platform providers, this paper regards states responsible for adapting their educational programs in schools to equip their citizens early on with the analytical ability to detect fake news. States can follow the European Union's guidelines for adapting education to address the problem of fake news (European Commission and Directorate-General for Education, Youth, Sport and Culture, 2022).

Another strategy for readers to counter fake news is to utilize websites dedicated to fact-checking and reporting fake news (Zhang and Ghorbani, 2020). These websites provide readers with the tools needed to verify the authenticity of news. Fact-checking websites are primarily operated by

non-governmental organizations, as exemplified by PolitiFact (2024) and FactCheck.org (2024). Other fact-checking websites are run by media companies, such as Agentur (2024).

Writers

Writers of genuine news can counter fake news by winning the competition for readers' trust against fake news writers (see 3.2). To win readers' trust, this paper suggests writers adopt both defensive and attacking measures.

Defensive Measures

Defensive measures refer to actions taken by genuine news writers to promote readers' ability to differentiate between genuine and fake news. A primary defensive measure is enhancing the factual accuracy of genuine news to eliminate misinformation. Unlike fake news, genuine news containing misinformation lacks the intent of its writer to include false or inaccurate information. However, it may still be indistinguishable from fake news to readers Baptista and Gradim, 2022. To improve factual accuracy, writers can utilize third-party fact-checking websites, such as Agentur (2024), to ensure their content aligns with verified sources. For efficient cross-referencing, genuine news writers can use Google's "Fact Check Explorer" as a resource. The "Fact Check Explorer" is a search engine that helps find fact-checked articles on various topics or individuals (Google News Initiative, 2024).

Besides cross-referencing with fact-checked content, genuine news writers can partner with independent fact-checkers to verify their news' factual accuracy. Such partnerships enable writers to leverage external expertise to enhance the factual accuracy of their news. Given that fake news often mimics genuine news to exploit the psychological mechanism of familiarity (see 2.2), utilizing services such as ClaimedReview (Duke Reporter's Lab, 2024) to obtain badges for fact-checked content could potentially counter fake news as a dark pattern. However, some research questions the effectiveness of badges for fact-checked news (Lee, 2020; Calero Valdez and Ziefle, 2018).

Attacking Measures

Attacking measures involve actions by genuine news writers to actively combat fake news that competes with their content. One approach is dedicating time and resources to identifying and reporting fake news related to their articles' topics, which thus directly compete for readers' trust. According to the European Parliament and Council of the European Union (2022),

platform providers are required to offer a point of contact for such situations, equipping genuine news writers with the right to report fake news (see 3.4). To minimize the resources needed for identifying and reporting fake news, Guo et al. (2022) suggests employing advanced fact-checking technologies, such as automated verification tools. These technologies can assist genuine writers in rapidly identifying fake news published by others. Reporting identified fake news to platform providers for removal or flagging can help maintain the integrity of genuine news writers' content. This attacking measure also fosters close collaboration between genuine news writers and platform providers, potentially countering the loss of trust in their relationship (see 3.2).

Platform providers

Platform providers can counter fake news through content moderation, a process in which they monitor and manage content on their digital news platforms to ensure compliance with established guidelines and community standards (Meta Platforms, 2024c). Facebook, for example, employs content moderation by partnering with third-party fact-checkers (Meta Platforms, 2024d) and utilizing artificial intelligence (Meta Platforms, 2024c).

Additionally, research suggests that platform providers could financially incentivize the production of genuine news to further combat fake news (Pennycook and Rand, 2019; Ehsanfar and Mansouri, 2017). This approach can be viewed as a subsidization strategy aimed at attracting a critical mass of genuine news writers (Wünderlich, 2024d, p. 19).

Given the mechanisms of fake news as a dark pattern, platform providers can also adapt their user interfaces to address the cognitive and psychological factors contributing to the spread of fake news (see 2.2). Martel et al. (2020) demonstrate that simple user interface interventions that encourage readers to engage analytically rather than emotionally can effectively reduce belief in fake news.

4.2 Future work

Open research questions remain for each aspect of this paper's impact analysis of fake news (see 3). Below are selected open research questions for future work:

- *Mechanisms of digital markets:* This paper defines the "fake news loop" and provides theoretical evidence for its existence (see 3.1). Future work should focus on empirically validating this loop. The same applies to the claim that fake news can achieve a lock-in

effect, which is also only theoretically supported in this paper (see 3.1). Additionally, empirical studies should aim to quantify the positive effects of fake news on network activity and compare these with the negative effects on network size due to the erosion of trust in platform providers (see 3.2). Such research would enhance our understanding of the overall impact of fake news on network effects.

- *Management of market participants:* Section 3.2 reveals that genuine news writers lose trust in platform providers, leading them to abandon digital news platforms. However, the section also indicates a shift in readers' trust from genuine news writers to fake news writers. This raises the question of whether the loss of genuine news writers is acceptable for platform providers, given that readers predominantly engage with fake news writers. Additional empirical research is needed to explore this issue further. A deeper understanding would enable platform providers to better plan responses to fake news and its impact on the dynamics between readers and writers.

- *Revenue Model:* Section 3.3 highlights how targeted advertising as a revenue model contributes to the continued production and success of fake news. This leads to the intuitive question of why platforms do not switch revenue models to mitigate fake news. Future research should compare potential revenue models concerning their amplifying effects on fake news. This paper hypothesizes that switching from targeted advertising to a subscription model could decrease the spread of fake news but might also reduce profits for platform providers since subscription models only monetize network size and not the network activity that targeted advertising capitalizes on. Understanding these dynamics could lead to additional countermeasures against the financial incentives driving fake news production. Such countermeasures could extend current research by Pennycook and Rand (2019) and Ehsanfar and Mansouri (2017).

- *Regulation:* This paper concludes that fake news is a collection of dark patterns (see 2.3). Further research is needed to explore the legitimacy of this conclusion because recognizing fake news as a dark pattern would subject digital news markets to additional regulations that address dark patterns (European Data Protection Board, 2023). These additional regulations would contribute to the need for more and stronger regulation, as expressed by current research (see 2.4).

This paper regards the role of platform providers as a topic that needs to be better understood in order to counter fake news effectively. This suggestion aligns with current research recommen-

dations to better identify which actors in the digital news market benefit from fake news (see 2.4). This paper's impact analysis of fake news in digital markets reveals a lack of consensus on whether fake news is harmful or beneficial for platform providers. On the one hand, the positive impact of fake news on the network effects of digital news platforms and its potential to create lock-in effects suggests that allowing fake news can be advantageous for platform providers (see 3.1). However, on the other hand, this paper's investigation into the management of market participants reveals the distrust that fake news generates among genuine writers towards platform providers, leading to their eventual disengagement from these platforms (see 3.2). Additionally, fake news can potentially lead to the failure of the digital news market (see 3.4). Consequently, from a business perspective, fake news represents both a pain and a gain for platform providers. Understanding whether platform providers experience fake news as pain or gain is crucial for developing effective strategies to combat fake news, given their central role in digital news markets and fake news. As intermediaries between readers and writers, platform providers operate the digital news market (see 3.2). As facilitators of the production of fake news, platform providers predominantly enable the existence of fake news as digital goods and dark patterns (see 2.3). As distributors of fake news, platform providers significantly contribute to its acceptance and spread, as evident throughout this paper's impact analysis. Therefore, it is essential to determine whether fake news is more of a pain or gain for platform providers to ascertain whether they can be genuine allies in combating fake news. If fake news is more beneficial for platform providers, prevention strategies must focus on extending regulations for platform providers, supporting the consensus among current research that regulation is crucial in the fight against fake news (see 2.4).

To better understand whether fake news represents a pain or gain for platform providers, this paper proposes a comprehensive research study that integrates both quantitative and qualitative methods. The quantitative component will involve the analysis of public financial reports of digital news platforms and surveys of platform providers to assess the financial impacts, user engagement metrics, and regulatory costs associated with fake news. Additionally, the study will examine the prevalence of fake news on the analyzed platforms to interpret its impact on revenue, cost, and market participants' presence and activity. The qualitative component will consist of interviews with key stakeholders from the surveyed platform providers, aiming to uncover the attitudes of decision-makers towards fake news and their strategies in dealing with it. These interviews could reveal whether platform providers view fake news as beneficial or harmful. This paper considers the inclusion of X, a platform currently undergoing significant changes, such as the firing of its content moderation team (see 3.2), as particularly valuable.

Comparing X with other platform providers, such as Facebook, which have implemented diverse measures against fake news (Meta Platforms, 2017, 2024c, 2024d), could provide insights into the success of platform providers given different amounts of effort put into combating fake news. Through this comprehensive research approach, the study aims to provide decisive evidence to determine whether fake news is ultimately a gain or a pain for platform providers. The paper assumes that fake news yields short-term gains due to increased network activity (see 3.1) but long-term pains due to the potential loss of user trust (see 3.2) and risk of market failure (see 3.4).

Bibliography

Zhang, X., & Ghorbani, A. A. (2020). An overview of online fake news: Characterization, detection, and discussion. *Information Processing Management*, *57*(2), 102025. https://doi.org/https://doi.org/10.1016/j.ipm.2019.03.004

World Economic Forum. (2024). Global Risks 2024: Disinformation Tops Global Risks 2024 as Environmental Threats Intensify [Retrieved 15-07-2024]. https://www.weforum.org/press/2024/01/global-risks-report-2024-press-release/

Directorate-General for Communication. (2024). EU Code of Practice on Disinformation [Retrieved 08-07-2024]. https://digital-strategy.ec.europa.eu/en/policies/code-practice-disinformation

Beauvais, C. (2022). Fake news: Why do we believe it? *Joint Bone Spine*, *89*(4), 105371. https://doi.org/https://doi.org/10.1016/j.jbspin.2022.105371

Lee, J. (2020). How Fake News Affects U.S. Elections [Retrieved 26-07-2024]. https://www.ucf.edu/news/how-fake-news-affects-u-s-elections/

Vamanu, I. (2019). Fake news and propaganda: A critical discourse research perspective. *Open Information Science*, *3*(1), 197–208. https://doi.org/doi:10.1515/opis-2019-0014

Hoppen, F. (2024). Randale nach Messerangriff: "Das waren keine Leute aus Southport" [Retrieved 31-07-2024]. https://www.tagesschau.de/ausland/europa/southport-england-randale-100.html

Pennycook, G., & Cannon, T. (2018). Prior exposure increases perceived accuracy of fake news. *Journal of Experimental Psychology General*. https://doi.org/10.2139/ssrn.2958246

Olan, F., Jayawickrama, U., Arakpogun, E. O., Suklan, J., & Liu, S. (2022). Fake news on social media: The impact on society. *Information Systems Frontiers*, *26*(2), 443–458. https://doi.org/10.1007/s10796-022-10242-z

Rocha, Y. M., de Moura, G. A., Desidério, G. A., de Oliveira, C. H., Lourenço, F. D., & de Figueiredo Nicolete, L. D. (2021). The impact of fake news on social media and its influence on health during the covid-19 pandemic: A systematic review. *Journal of Public Health*, *31*(7), 1007–1016. https://doi.org/10.1007/s10389-021-01658-z

Tandoc, E. C. (2019). The facts of fake news: A research review. *Sociology Compass*, *13*(9). https://doi.org/10.1111/soc4.12724

Aïmeur, E., Amri, S., & Brassard, G. (2023). Fake news, disinformation and misinformation in social media: A review. *Social Network Analysis and Mining*, *13*(1). https://doi.org/10.1007/s13278-023-01028-5

Hamed, S. K., Ab Aziz, M. J., & Yaakub, M. R. (2023). A review of fake news detection approaches: A critical analysis of relevant studies and highlighting key challenges associated with the dataset, feature representation, and data fusion. *Heliyon*, *9*(10), e20382. https://doi.org/10.1016/j.heliyon.2023.e20382

Hu, B., Mao, Z., & Zhang, Y. (2024). An overview of fake news detection: From a new perspective. *Fundamental Research*. https://doi.org/https://doi.org/10.1016/j.fmre.2024.01.017

Wünderlich, N. (2024a). Digitale Märkte - V1: Grundlagen digitaler Märkte.

Vicario, M. D., Quattrociocchi, W., Scala, A., & Zollo, F. (2019). Polarization and fake news: Early warning of potential misinformation targets. *ACM Trans. Web*, *13*(2). https://doi.org/10.1145/3316809

Ferrara, E. (2015). Manipulation and abuse on social media. *SIGWEB Newsl.*, *2015*(Spring). https://doi.org/10.1145/2749279.2749283

Martel, C., Pennycook, G., & Rand, D. G. (2020). Reliance on emotion promotes belief in fake news. *Cognitive Research: Principles and Implications*, *5*(1). https://doi.org/10.1186/s41235-020-00252-3

Nadarevic, L., Reber, R., Helmecke, A. J., & Köse, D. (2020). Perceived truth of statements and simulated social media postings: An experimental investigation of source credibility, repeated exposure, and presentation format. *Cognitive Research: Principles and Implications*, *5*(1). https://doi.org/10.1186/s41235-020-00251-4

Calvillo, D. P., Rutchick, A. M., & Garcia, R. J. B. (2021). Individual differences in belief in fake news about election fraud after the 2020 u.s. election. *Behavioral Sciences*, *11*(12). https://doi.org/10.3390/bs11120175

Begg, I. M., Anas, A. P., & Farinacci, S. (1992). Dissociation of processes in belief: Source recollection, statement familiarity, and the illusion of truth. *Journal of Experimental Psychology: General*, *121*, 446–458. https://api.semanticscholar.org/CorpusID:229079

Calvillo, D. P., & Smelter, T. J. (2020). An initial accuracy focus reduces the effect of prior exposure on perceived accuracy of news headlines. *Cognitive Research: Principles and Implications*, *5*(1). https://doi.org/10.1186/s41235-020-00257-y

Billard, T. J., & Moran, R. E. (2023). Designing trust: Design style, political ideology, and trust in "fake" news websites. *Digital Journalism*, *11*(3), 519–546. https://doi.org/10.1080/21670811.2022.2087098

Tandoc, E. C. (2021). Fake news. In *The routledge companion to media disinformation and populism* (pp. 110–117). Routledge.

ABC News. (2024). ABC News website [Retrieved 30-06-2024]. https://abcnews.go.com/

Murtha, J. (2016). How fake news sites frequently trick big-time journalists [Retrieved 30-06-2024]. https://www.cjr.org/analysis/how_fake_news_sites_frequently_trick_big-time_journalists.php

Meta Platforms. (2024a). Facebook Website [Retrieved 26-06-2024]. https://about.meta.com/technologies/facebook-app/

Statista Search Department. (2023). Fake news ad revenue 2021 [Retrieved 01-07-2024]. https://www.statista.com/statistics/1253292/misinformation-publishers-advertising-revenue/

Bakir, V., & McStay, A. (2018). Fake news and the economy of emotions. *Digital Journalism*, *6*(2), 154–175. https://doi.org/10.1080/21670811.2017.1345645

Emma Graham-Harrison, J. J., & Heall, A. (2021). Facebook 'still making money from anti-vax sites' [Retrieved 01-07-2024]. https://www.theguardian.com/technology/2021/jan/30/facebook-letting-fake-news-spreaders-profit-investigators-claim

Shinal, J. (2017). Facebook's fight to kill fake news may hurt its profit margin [Retrieved 01-07-2024]. https://www.cnbc.com/2017/11/01/facebook-says-costs-will-rise-to-go-after-fake-news.html

Mathur, A., Acar, G., Friedman, M. J., Lucherini, E., Mayer, J., Chetty, M., & Narayanan, A. (2019). Dark patterns at scale: Findings from a crawl of 11k shopping websites. *Proc. ACM Hum.-Comput. Interact.*, *3*(CSCW). https://doi.org/10.1145/3359183

European Data Protection Board. (2023). Guidelines 03/2022 on deceptive design patterns in social media platform interfaces: how to recognise and avoid them [Accessed 24-06-2024]. https://www.edpb.europa.eu/our-work-tools/our-documents/guidelines/guidelines-032022-deceptive-design-patterns-social-media_en

Kozyreva, A., Lewandowsky, S., & Hertwig, R. (2020). Citizens versus the internet: Confronting digital challenges with cognitive tools. *Psychological Science in the Public Interest*, *21*(3), 103–156. https://doi.org/10.1177/1529100620946707

Brignull, H. (2024). Dark Patterns [Retrieved 01-07-2024]. https://www.deceptive.design/

Meta Platforms. (2017). Working to Stop Misinformation and False News [Retrieved 01-07-2024]. https://www.facebook.com/formedia/blog/working-to-stop-misinformation-and-false-news

Ruiz, C. D. (2023). Disinformation on digital media platforms: A market-shaping approach. *New Media & Society*, *0*(0). https://doi.org/10.1177/14614448231207644

Cassar, D. (2023). The misinformation threat: A techno-governance approach for curbing the fake news of tomorrow. *Digit. Gov.: Res. Pract.*, *4*(4). https://doi.org/10.1145/3631615

Leiser, M. (2023). Analysing the european union's digital services act provisions for the curtailment of fake news, disinformation, amp;amp; online manipulation. https://doi.org/10.31235/osf.io/rkhx4

Hausknecht, L., & Hilger, G. (2023). Content regulation in the european union: Hate speech, fake news co. *Juristenzeitung*, *78*(5), 198.

Pollicino, O. (2023). *Freedom of Speech and the Regulation of Fake News* (O. Pollicino, Ed.). Intersentia.

Franek, K. (2024). How Facebook Makes Money: Business Model Explained [Retrieved 08-07-2024]. https://www.kamilfranek.com/how-facebook-makes-money-business-model-explained/

Meta Platforms. (2023). Meta Platforms Annual Report.

Wünderlich, N. (2024b). Digitale Märkte - V2: Mechanismen digitaler Märkte.

Shapiro, C., & Varian, H. (2008, January). *Information Rules: A Strategic Guide to The Network Economy* (Vol. 30). https://doi.org/10.2307/1183273

Benzell, S., & Collis, A. (2022). Regulating digital platform monopolies: The case of facebook. *Available at SSRN 3619535*.

Knee, J. A. (2018). Why some platforms are better than others. *MITSloan Management Review*, *59*(2).

Zhu, F., & Iansiti, M. (2019). Why some platforms thrive and others don't. *Harvard Business Review*, 118–125.

Belleflamme, P., & Peitz, M. (2021). *The economics of platforms: Concepts and strategy*. Cambridge University Press.

Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. *Science*, *359*(6380), 1146–1151. https://doi.org/10.1126/science.aap9559

Ali, K., Li, C., Zain-ul-abdin, K., & Zaffar, M. (2021). Fake news on facebook: Examining the impact of heuristic cues on perceived credibility and sharing intention. *Internet Res.*, *32*, 379–397. https://doi.org/10.1108/intr-10-2019-0442

t'Serstevens, F., Piccillo, G., & Grigoriev, A. (2022). Fake news zealots: Effect of perception of news on online sharing behavior. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.859534

Braun, J. A., & Eklund, J. L. (2019). Fake news, real money: Ad tech platforms, profit-driven hoaxes, and the business of journalism. *Digital Journalism*, *7*, 1–21. https://doi.org/10.1080/21670811.2018.1556314

Quattrociocchi, W., Scala, A., & Sunstein, C. R. (2016). Echo chambers on facebook. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2795110

Fantl, J. (2021). Fake news vs. echo chambers. *Social Epistemology*, *35*(6), 645–659. https://doi.org/10.1080/02691728.2021.1946201

Nguyen, C. T. (2020). Echo chambers and epistemic bubbles. *Episteme*, *17*(2), 141–161. https://doi.org/10.1017/epi.2018.32

Chakravarty, A., Kumar, A., & Grewal, R. (2014). Customer orientation structure for internet-based business-to-business platform firms. *Journal of Marketing*, *78*(5), 1–23. Retrieved July 8, 2024, from http://www.jstor.org/stable/43785834

Wünderlich, N. (2024c). Digitale Märkte - V4: Management von Marktteilnehmer*innen.

Kim, B., Xiong, A., Lee, D., & Han, K. (2021). A systematic review on fake news research through the lens of news creation and consumption: Research efforts, challenges, and future directions (L. Lavorgna, Ed.). *PLOS ONE*, *16*(12), e0260080. https://doi.org/10.1371/journal.pone.0260080

Martens, B., Aguiar, L., GGmez, E., & Mueller-Langer, F. (2018). The digital transformation of news media and the rise of disinformation and fake news. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3164170

Mitchell, C. (2023). Deluge of false information on X prompts exit [Retrieved 29-07-2024]. https://www.thepress.co.nz/nz-news/350090624/deluge-false-information-x-prompts-exit

Meade, A. (2023). ABC exiting Twitter: Australia's national broadcaster shuts down almost all accounts on Elon Musk's X [Retrieved 29-07-2024]. https://www.theguardian.com/technology/2023/aug/09/abc-australia-leaves-twitter-x-elon-musk

Taeuscher, K., & Laudien, S. (2017). Understanding platform business models: A mixed methods study of digital marketplaces. *European Management Journal*. https://doi.org/10.1016/j.emj.2017.06.005

Nikhilesh Dholakia, A. O., & Atik, D. (2023). The miasma of misinformation: A social analysis of media, markets, and manipulation. *Consumption Markets & Culture*, *26*(3), 217–232. https://doi.org/10.1080/10253866.2022.2149508

Visentin, M., Pizzi, G., & Pichierri, M. (2019). Fake news, real problems for brands: The impact of content truthfulness and source credibility on consumers' behavioral intentions toward the advertised brands. *Journal of Interactive Marketing*, *45*(1), 99–112. https://doi.org/10.1016/j.intmar.2018.09.001

Adgate, B. (2023). With Concerns About Brand Safety, More Advertisers Have Left X [Retrieved 30-07-2024]. https://www.forbes.com/sites/bradadgate/2023/12/07/with-concerns-about-brand-safety-more-advertisers-have-left-x/

Mehnert, A., & Erbsland, M. (1993). Zum begriff der regulierung: Gegenstand, träger und methoden. https://hdl.handle.net/10419/29455

Akerlof, G. A. (1970). The market for "lemons": Quality uncertainty and the market mechanism. *The Quarterly Journal of Economics*, *84*(3), 488–500. Retrieved July 8, 2024, from http://www.jstor.org/stable/1879431

European Parliament and Council of the European Union. (2022). Digital Services Act [Accessed: 2024-07-08]. https://eur-lex.europa.eu/eli/reg/2022/2065/oj

European Commission. (2024). The impact of the Digital Services Act on digital platforms [Retrieved 08-07-2024]. https://digital-strategy.ec.europa.eu/en/policies/dsa-impact-platforms

European Comission. (2024). Signatories of the 2022 Strengthened Code of Practice on Disinformation [Retrieved 30-07-2024]. https://digital-strategy.ec.europa.eu/en/library/signatories-2022-strengthened-code-practice-disinformation

Meta Platforms. (2024b). Digital Literacy - Overview [Retrieved 01-08-2024]. https://about.meta.com/actions/safety/topics/digital-literacy

European Commission and Directorate-General for Education, Youth, Sport and Culture. (2022). *Guidelines for teachers and educators on tackling disinformation and promoting digital literacy through education and training*. Publications Office of the European Union. https://doi.org/doi/10.2766/28248

PolitiFact. (2024). PolitiFact Website [Retrieved 09-07-2024]. https://www.politifact.com

FactCheck.org. (2024). FactCheck.org - About Us - Our Mission [Retrieved 09-07-2024]. https://www.factcheck.org/about/our-mission/

Agentur, D. P. (2024). Dpa-factchecking website [Retrieved 31-07-2024]. https://dpa-factchecking.com

Baptista, J. P., & Gradim, A. (2022). A working definition of fake news. *Encyclopedia*, *2*(1), 632–645. https://doi.org/10.3390/encyclopedia2010043

Google News Initiative. (2024). Google Fact Check Tools [Retrieved 09-07-2024]. https://newsinitiative.withgoogle.com/de-de/resources/trainings/verification/google-fact-check-tools/

Duke Reporter's Lab. (2024). User Guide — The ClaimReview Project [Retrieved 01-08-2024]. https://www.claimreviewproject.com/user-guide

Calero Valdez, A., & Ziefle, M. (2018, August). Believability of news: Understanding users perceptions of fake news and the effectiveness of fact-checking badges. In *Proceedings of the 20th congress of the international ergonomics association (iea 2018)* (pp. 469–477). Springer International Publishing. https://doi.org/10.1007/978-3-319-96077-7_50

Guo, Z., Schlichtkrull, M., & Vlachos, A. (2022). A Survey on Automated Fact-Checking. *Transactions of the Association for Computational Linguistics*, *10*, 178–206. https://doi.org/10.1162/tacl_a_00454

Meta Platforms. (2024c). How does Facebook use artificial intelligence to moderate content? [Retrieved 01-08-2024]. https://www.facebook.com/help/1584908458516247

Meta Platforms. (2024d). Partnering with Third-Party Fact-Checkers [Retrieved 01-08-2024]. https://www.facebook.com/journalismproject/programs/third-party-fact-checking/selecting-partners

Pennycook, G., & Rand, D. G. (2019). Fighting misinformation on social media using crowd-sourced judgments of news source quality. *Proceedings of the National Academy of Sciences*, *116*(7), 2521–2526. https://doi.org/10.1073/pnas.1806781116

Ehsanfar, A., & Mansouri, M. (2017). Incentivizing the dissemination of truth versus fake news in social networks. *2017 12th System of Systems Engineering Conference (SoSE)*, 1–6. https://doi.org/10.1109/SYSOSE.2017.7994981

Wünderlich, N. (2024d). Digitale Märkte - V3: Strategien im Kontext digitaler Märkte.