

Alt Facts & Fact-Checking
The Economics of Social Media
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1. Introduction

Donald Trump stunned the political world when he became the first person without government or military experience ever to be elected president of the United States (Dimock & Gramlich, 2021). He won the 2016 election after a campaign that defied norms and commanded public attention, predominantly on social media, from the moment it began. This included starting the “alt-facts” movement, as his clearly false statements were not claimed to be falsehoods but merely alternative facts. Moreover, alt-facts are false facts, and they fall within the “fake news” distinction. Since the rapid onset of alt-facts, countries, the media, and independent organizations have attempted to mediate them by either blocking social network accounts and sites or setting up large-scale fact-checking operations. However, Vosoughi et al. (2018) assert that “falsehood diffuse[s] significantly farther, faster, deeper, and more broadly than the truth in all categories of information”. Not only do alt-facts spread faster but correcting a reader’s incorrect belief after exposure to alt-facts is very difficult even with fact-checking (Barrera et al. 2020). Henry et al. (2022) argue that the key to limiting the impact of alt-facts is to inhibit their propagation on social media.

To inhibit the spread of alt-facts, the authors study the impacts of fact-checking. More specifically, they take an alt-fact published by a far-right politician on social media and pair it with the corresponding fact-checked information attained from credible sources. The aim is to answer the research question: *How does adding fact-checking information to an original alt-fact affect the user’s sharing of said alt-fact on social media?* Henry et al. (2022) study this question using a randomized experiment in the context of the May 2019 European Parliament elections in France involving real sharing on Facebook. The first result of their online survey experiment is that there is a significant gap between the intention of sharing and the actual sharing on personal Facebook pages. Furthermore, even a small cost associated with an additional click substantially reduces sharing. Secondly, fact-checking, whether imposed or voluntary, reduced the sharing of alt-facts by 45%. Additionally, participants shared the fact-checked information at similar rates of around 3% when the fact-checking information was forced or voluntary. Lastly, using the adaptive LASSO method, the authors find that within the voluntary fact-check group, those who chose not to view the fact-checking were still less likely to

share the alt-fact, suggesting that the knowledge of its existence is enough to reduce their sharing intentions. The findings offer insights for appropriate actions for both public and private entities to reduce the sharing of alt-facts on social media.

2. Literature Review

This research adds to the literature on the propagation of fake news on social media. Alcott and Gentzkow (2017) reiterate the dramatically different structure of social media platforms as news sources because content can be shared freely and without fact-checking. In the context of the 2016 US presidential election, they estimate 760 million instances of a user clicking through and reading a fake news story, or equivalently about three stories read per American adult. Importantly, their definition of fake-news does not include false statements by politicians, i.e., alt-facts.

Additionally, the authors contribute to growing literature on the impact of fact-checking on sharing false-news. Again, in the context of the 2016 US presidential election, Clayton et al. (2020) find that adding a “Rated false” or “Disputed” tag underneath headlines reduces their perceived accuracy, although neither tag measurably reduced the self-reported likelihood that the user would share the headlines on social media.¹ Furthermore, Pennycook et al. (2020) introduce a Bayesian model of belief updating in response to the presence or absence of a warning that demonstrates that rational Bayesian reasoning can give rise to the implied truth effect, where the presence of warnings caused untagged headlines to be seen as more accurate than in the control. They find support for this phenomenon, and that adding the “false” label to a statement significantly reduces a participants’ self-reported intention to share the statement on social media. However, Henry et al. (2022) reach one step further in their survey because they present the possibility of actual sharing on Facebook, not merely hypothetical sharing.

This work expands on the authors’ previous work with Barrera et al. (2020). They test how exposure of voters to alternative facts, fact checking, or true facts affect voting intentions, policy positions, knowledge of facts, and trust in official

¹ Facebook began adding “Disputed” tags to stories in its News Feed that have been debunked by fact-checkers in December 2016. It used this approach for approximately one year before switching to providing fact-checks in a “Related Articles” format underneath suspect stories.

institutions. In a randomized online experiment during the 2017 French presidential election campaign, they subjected subgroups of 2,480 French voters to alternative facts by the extreme-right candidate, Marine Le Pen. Although both studies focus on French elections and far-right statements, including those from Le Pen, instead of examining alt-facts and fact-checking on political outcomes, Henry et al. (2022) test the impact of fact-checking on the sharing behavior of alt-facts. In short, the authors differentiate themselves from the current literature because they study actual sharing behavior on personal Facebook pages, they compare the effect of imposed fact-checking to voluntary fact-checking on the sharing of alt-facts, they highlight the costs of additional clicks, and finally, showcase the key role that fact-checking plays in restricting the propagation of fake news.

3. Experimental Design

The following section explores the empirical background of the study, including the data, research design, treatment groups, and descriptive statistics.

3.1 Data & Set-Up

Henry et al. (2022) conducted a randomized experiment using the online survey platform *Qualtrics*. The survey occurred the week before May 26, 2019, the date of the European Parliament elections held in France. The goal of the elections was to select France's 79 members with the main contest being between the EU-skeptic Rassemblement National party (RN, Marine Le Pen's party) and the pro-EU La République En Marche (LREM, Emmanuel Macron's party). The sample included 2,537 French voting-age Facebook users. The sample was stratified on education and gender by treatment. Ideally, the sample is representative of the French adult population eligible to vote. The experiment consisted of two alt-facts statements related to the central theme of RN's anti-EU campaign. Table 1 illustrates the statements and the respective fact-checking information provided by *Libération*, a major French newspaper, and Töller (2010).

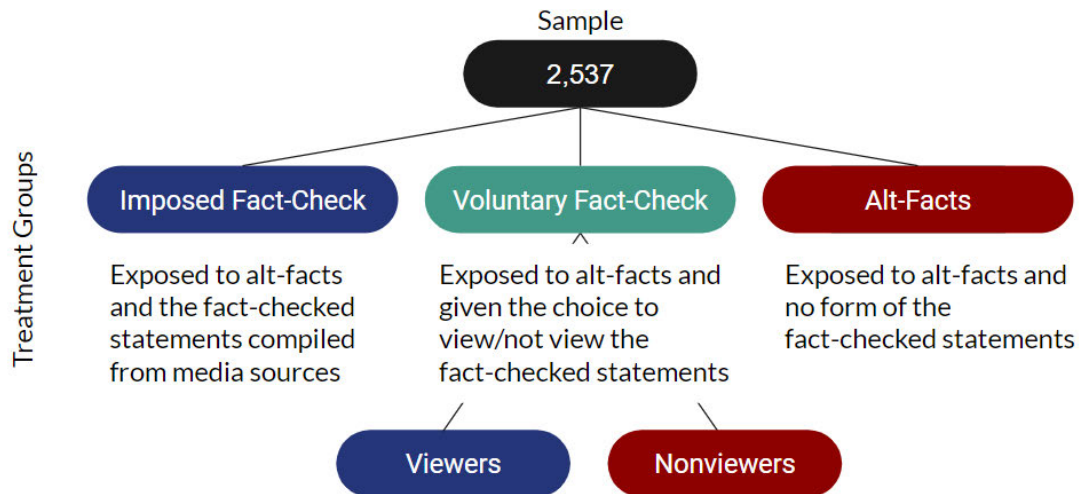
Table 1: Alt-Facts in the Survey

RN Member	Alt-Fact Statement	Fact-Checking Provided to Participants
Marine Le Pen	“The European Union wants immigration. It has said this multiple times, through the voices, among others, of multiple European Commissioners. They even went as far as saying 50 million immigrants by 2050.”	<i>Liberation</i> : this observation does not imply that these population losses need to be compensated by immigrants “Without migration, the active population will decline by more than 20 million in the fifteen upcoming years. By 2060, the active population would have decreased by 50 million.” - Dimitris Avramopoulos, European Commissioner for Migration, Home Affairs, and Citizenship
Jordan Bardella	“We have to regain control of our budgets, regain control of our laws. I remind you that 87 percent of our laws, laws that are voted, come from European directives.”	Töller (2010) reports that between 3-27% of French laws come from European legislation, well below the 87% figure quoted by Bardella.

The experiment set-up begins with participants given a brief introduction indicating the survey’s focus on social media behavior. Participants are then asked questions regarding their socioeconomic characteristics (age, gender, education, income, and religion), their use of social media (motivations for sharing content on Facebook), their level of altruism, reciprocity, and image concerns to indicate their social preferences that may affect sharing decisions, and finally, their 2017 presidential election voting behavior and opinion of the EU. Following, participants are randomly assigned to treatments groups: Alt-Facts, Imposed Fact-Check, or Voluntary Fact-Check (see Figure 1). Each group was exposed to a different informational treatment and after, asked (i) whether they wanted to share the alt facts on their Facebook page, and given the opportunity (ii) whether they wanted to anonymously share the content with 100 other individuals, (iii) if applicable, whether they wanted to share the fact-checking information on Facebook, and given the opportunity. Importantly, after the user is given the opportunity to post, they have to again reconfirm by clicking the Facebook share button on the screen which leads them to the Facebook website where they must login to proceed to post. The last step of the set-up measures voting intentions and attitudes towards the EU and

a factual question on participants' beliefs regarding the share of French laws coming from European Directives.

Figure 1: Research Design



The Voluntary Fact-Check treatment is further divided into *Viewers*, those who chose to view the fact-checking information, and *Nonviewers*, those who did not. Nonviewers proceeded as participants of the Alt-Facts Treatment and Viewers proceeded as participants of the Imposed Fact-Check Treatment group. This distinction allows the authors to later use the adaptive LASSO to consider the endogenous selection into viewing of the two subgroups.

3.2 Descriptive Statistics and Balance

Across the treatment groups the randomization worked relatively well with minor imbalances. As previously mentioned, the sample was stratified to match the French voting age population and not of Facebook users in France. As a result, the participants had less Facebook friends, are older, more likely to be married and less likely to have tertiary education than a mean French Facebook user.

4. Results

This section details the empirical results of the survey. The results are broken down into the following sections: Additional Clicks, Effect of Fact-Checking on Sharing, Endogenous Viewing Selection, and Validity. Moreover, the authors find support that false news spreads faster than the truth on social media (consistent with Vosoughi et al. 2018).

4.1 Additional Clicks

Henry et al. (2022) report that of the 2,537 participants, 302 expressed a sharing intention, 82 took the sharing action (i.e., clicked the Facebook share button that brought them to the external website), and 21 ended up sharing on Facebook. The proportional decrease of users continuing to each step is similar across treatments. For the 1,176 participants who viewed fact-checking information, 218 expressed a sharing intention, 53 clicked the Facebook share button, and 7 reconfirmed. Not only do self-reported sharing intentions seriously overestimate actual sharing behavior, but an additional click can also greatly reduce sharing. Importantly, the latter is irrespective of content of the information shared.

4.2 Effect of Fact-Checking on Sharing

Fact-checking significantly and substantially reduces the sharing of alt-facts on Facebook. Furthermore, the impact of fact-checking is very similar whether it is forced or optional. By examining the unconditional means, Henry et al. (2022) find that 14.7% of users in the Alt-Facts group expressed a sharing intention, around 4% higher than the mean rate for the other two groups. For the imposed and voluntary groups, the means are 10.8% and 10.2% respectively. The actual sharing of alt-facts also decreases when fact-checking is available and again, is similar between imposed and voluntary groups. Exposure to fact-checking (imposed or voluntary) reduces the sharing action by 43% to 45%.

Including all pretreatment characteristics, in Panel A of Table 2 the results are confirmed via OLS regressions. Again, we see a significant negative average treatment effect (ATE) of being in the imposed and voluntary groups on the intent to share alt facts, on average. Furthermore, the p-value of 0.899 implies we cannot reject the null for equality between the two groups. However, the ATE of being in the voluntary treatment group on the sharing intention of fact-checking is significantly negative, even though the rate of actual sharing is quite similar (see Table 2 Panel B).

Table 2: Average Treatment Effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Panel A. Average treatment effect on sharing alt-facts</i>								
Dependent variable:	Intent to share Alt-Facts on Facebook				Action of sharing Alt-Facts on Facebook			
Imposed Fact-Check	-0.045 (0.016)	-0.045 (0.016)	-0.049 (0.017)	-0.050 (0.017)	-0.020 (0.006)	-0.020 (0.006)	-0.021 (0.006)	-0.021 (0.007)
Voluntary Fact-Check	-0.038 (0.016)	-0.038 (0.016)	-0.040 (0.017)	-0.052 (0.017)	-0.021 (0.005)	-0.021 (0.005)	-0.024 (0.006)	-0.026 (0.006)
Observations	2,537	2,537	2,265	2,078	2,537	2,537	2,265	2,078
R ²	0.004	0.010	0.110	0.166	0.008	0.010	0.073	0.101
Mean DV, Alt-Facts Treatment	0.147	0.147	0.155	0.161	0.0462	0.0462	0.0492	0.0509
p-value, Imposed = Voluntary	0.635	0.634	0.530	0.899	0.812	0.812	0.579	0.379
<i>Panel B. Average treatment effect on sharing fact-checking</i>								
Dependent variable:	Intent to share Fact-Check on Facebook				Action of sharing Fact-Check on Facebook			
Voluntary Fact-Check	-0.028 (0.016)	-0.028 (0.016)	-0.041 (0.017)	-0.039 (0.018)	-0.001 (0.006)	-0.001 (0.006)	-0.001 (0.006)	0.004 (0.007)
Observations	1,692	1,692	1,517	1,388	1,692	1,692	1,517	1,388
R ²	0.002	0.038	0.100	0.131	0.000	0.004	0.038	0.073
Mean DV, Imposed Fact-Check	0.143	0.143	0.158	0.160	0.0315	0.0315	0.0337	0.0320
<i>Panel C. Actual compared to predicted sharing for viewers and nonviewers</i>								
Dependent variable:	Difference b/w actual and predicted: Intent to share Alt-Facts on Facebook				Difference b/w actual and predicted: Action of sharing Alt-Facts on Facebook			
Imposed Fact-Check	-0.046 (0.016)	-0.045 (0.016)	-0.052 (0.017)	-0.051 (0.018)	-0.021 (0.006)	-0.021 (0.006)	-0.022 (0.007)	-0.021 (0.007)
Voluntary Fact-Check: Viewer	-0.025 (0.023)	-0.028 (0.023)	-0.028 (0.024)	-0.025 (0.024)	-0.023 (0.008)	-0.022 (0.008)	-0.022 (0.008)	-0.020 (0.008)
Voluntary Fact-Check: Nonviewer	-0.066 (0.017)	-0.063 (0.017)	-0.074 (0.018)	-0.072 (0.019)	-0.026 (0.006)	-0.027 (0.006)	-0.032 (0.007)	-0.030 (0.007)
Observations	2,219	2,219	2,051	2,018	2,349	2,349	2,112	2,078
R ²	0.007	0.011	0.038	0.069	0.010	0.016	0.046	0.063
Mean dep. var., Alt-Facts T	-0.0014	-0.0014	0.0036	0.0023	0.0006	0.0006	0.0027	0.0019
Mean predicted Alt-Facts T	0.150	0.150	0.156	0.159	0.0474	0.0474	0.0483	0.0490
Mean predict. Imposed Fact-Check T	0.158	0.158	0.159	0.159	0.0467	0.0467	0.0479	0.0480
Mean predict. Voluntary T, Viewer	0.188	0.188	0.190	0.190	0.0589	0.0589	0.0592	0.0592
Mean predict. Voluntary T, Nonviewer	0.136	0.136	0.144	0.144	0.0432	0.0432	0.0442	0.0442
<i>All panels:</i>								
Strata controls		✓	✓	✓		✓	✓	✓
Demographic controls and Facebook use			✓	✓			✓	✓
All pretreatment characteristics				✓				✓

Note: The comparison group in panel A is Alt-Facts treatment. The comparison group in panel B is Imposed Fact-Check treatment. Strata controls include dummies for gender and middle-and low-level education. The set of demographic and Facebook use controls is as follows: age, age squares, income (1–10), family status (dummies for married and single), number of children, size of the place of living (dummies for village and town), dummy for attending religious services, religion (dummies for Catholic, Muslim, and no religion), dummies for each of the 9 levels of education, frequency of Facebook use, dummy for sharing often on Facebook, the log of 1+ the number of Facebook friends, a dummy for having voted for Marine Le Pen in the second round of 2017 elections, negative image EU. The list of all pretreatment characteristics is given in online Appendix Table A1. Most importantly, it includes self-reported altruism, reciprocity, and image importance, as well as self-reported reasons to share on Facebook (interest, influence, image, reciprocity). Robust standard errors are in parentheses.

4.3 Endogenous Viewing Selection

Within the Voluntary Fact-Check group, Henry et al. (2022) find that Viewers share more alt-facts than Nonviewers. Yet, before treatment, how is the viewing decision related to an individual's propensity to share alt-facts on Facebook? To examine this the authors utilize the adaptive LASSO method and select key determinants of sharing alt-facts among pretreatment characteristics (i.e. they voted for Le Pen in the 2017 presidential election, those who are motivated to influence others, etc.). The results indicate that Viewers have a significantly higher ex ante propensity to share than Nonviewers: 18.8% vs. 13.6%. Panel C of Table 2 indicates that among Nonviewers, actual sharing decrease by 60.2% ($= -0.026/0.0432$) on average as a result of the fact-checking opportunity, implying that merely the existence of fact-checking significantly decreases the likelihood of sharing an alt-fact.

4.4 Validity

Was Facebook the appropriate social media platform for this study? Facebook may be the most popular platform in France overall, but not for politics.² As of November 11, 2022 Macron has 7.4M Twitter followers, 4.4M on Facebook and 1.9M on Instagram followers. Le Pen also has the majority of her followers on Twitter with 2.8M, 1.7M on Facebook, and 291K on Instagram. Representatives of the U.S. Congress and Senate have been utilizing social media to connect with the American public, and Twitter is frequently the platform of choice. In 2021 there were over 477,000 posts by members of the U.S. Congress on Twitter. In comparison, there were 295,000 thousand Facebook posts published by members of Congress in 2021 (Dixon 2022). Not only is Twitter the candidates' most popular social media platform, but politicians who use it get more votes than their non-tweeting counterparts (Kruikemeier 2014). Moreover, it could be that individuals would be more likely to share political opinions on Twitter rather than Facebook.

5. Further Research

One aspect that the Henry et al. (2022) survey did not include was a test or question to determine how many prior alt-facts were read or shared by the participants. The reason this could impact the results is that the believability of fake news is

² In the third quarter of 2021, Facebook was the leading social media in France with more than 73.2% of French online users accessing the social media platform on a monthly basis (GWI 2022).

influenced by prior exposure. Pennycook et al. (2018) use actual fake-news headlines presented on Facebook and show that even a single exposure increases subsequent perceptions of accuracy, both within the same session and after a week. The authors dub this phenomenon the “illusory truth effect”, and it occurs for fake-news headlines despite a low level of overall believability and even when the stories are labeled as contested by fact checkers or are inconsistent with the reader’s political ideology.

Additionally, an examination into cognitive bias, such as the Dunning-Kruger effect could shed new light on these results. The 1999 paper that launched the Dunning-Kruger Effect offered groundbreaking insight into why people overestimate their level of skill, knowledge, and performance in a variety of contexts. The study found that the miscalibration between estimated and actual performance follows a consistent pattern. People with the lowest scores on a test tend to show the highest overestimations of their performance, midrange performers show less overestimation, and the best performers tend to slightly underestimate themselves (dunning and Kruger 1999). Put simply, uneducated or inexperienced individuals in a certain area of knowledge tend to overestimate their knowledge of that topic. Even though the authors controlled for education, the Dunning-Kruger effect is concerned with the knowledge of a specific topic, that may or may not be learned through formal education. Thus, it would not be controlled for via education level, rather the authors would have to ask questions regarding a chosen topic to determine a user’s actual and perceived knowledge of that topic.

Furthermore, Lyons et al. (2021) even find that this effect of overconfidence may be a crucial factor for explaining how false and low-quality information spreads via social media in the US. In their study, overconfident individuals are more likely to visit untrustworthy websites in behavioral data; to fail to successfully distinguish between true and false claims about current events in survey questions; and to report greater willingness to like or share false content on social media, especially when it is politically congenial. In summary, the Dunning-Kruger effect should be utilized to help explain a user’s propensity to share alt-facts on social media.

6. Conclusion

In January 2022, the President of the French Republic received the first report from the "Enlightenment in the Digital Age" Commission, this commission looked at the challenges posed by the Internet to the French democracy and access to information. In it the authors claim: “although the internet and social media provide access to an unparalleled volume of reliable knowledge and information, they have also opened the door to the sharing of a large amount of false information with repercussions that rarely remain confined to social media” (Bronner et al. 2022). The spread of fake news on social media has real consequences on socioeconomic outcomes. Thus, inhibiting the spread is a key part of the solution. Henry et al. (2022) find that fact-checking reduces the sharing of alt-facts by upwards of 45%. Furthermore, the results are similar across imposed or voluntary groups. Policymakers and social media platforms should also consider the drastic decrease in sharing with reconfirmation of the users’ willingness to share content. In conclusion, including a fact-check signal on questionable posts significantly reduces the dissemination of alt-facts on Facebook in France.

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