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Uninformed or Misinformed in the Digital News Environment? How Social Media News Use Affects Two Dimensions of Political Knowledge

Atle Haugsgjerd^a, Rune Karlsen^b, and Kari Steen-Johnsen^a

^aInstitute for Social Research, Oslo, Norway; ^bDepartment of Media and Communication, University of Oslo, Norway

ABSTRACT

This article examines how the use of social media for news affects citizens' knowledge about politics and current affairs. We employ a two-dimensional perspective on political knowledge and investigate how factual political knowledge, confidence in that knowledge, and misinformation, understood as the mismatch between factual political knowledge and confidence in knowledge, are related to social media news consumption. While earlier studies have suggested a negative relationship between social media news consumption and factual knowledge, there are indications that social media use may give people a general sense of being informed, even when they are not. Such general subjective knowledge might, however, differ from confidence in retrieved facts. Drawing on a two-wave panel study from Norway, we find evidence of a negative relationship between social media news consumption and both dimensions of knowledge. Notably, however, we do not find that social media news use leads to confidence in incorrect beliefs, suggesting that the digital media environment produces an uninformed, but not an overconfident, misinformed news audience.

KEYWORDS

social media; news consumption; political knowledge; confidence in knowledge; misinformed citizenry

Introduction

For decades, the mass media has provided the public with an opportunity to keep abreast of politics and current affairs (Holbert, 2005; Neuman et al., 1992). This role of the media as a provider of political information is critical to the functioning of large-scale democracies. Following the news helps people keep themselves updated about the most recent political events, acquire information about politics, and make more well-founded political decisions (e.g., Aalberg & Curran, 2012; Barabas & Jerit, 2009; Chaffee & Kanihan, 1997). In turn, an informed citizenry is widely viewed as normatively desirable for representative democracies to the extent that it is described as “the unwavering normative thrust in public opinion research” (Kuklinski et al., 2000; see also , p. 790; Delli Carpini & Keeter, 1996).

Social media platforms have become increasingly important news sources in today's media environment (e.g., Bode, 2016; Newman et al., 2018), and an extensive literature has investigated how news consumption on social media affects citizens' factual political knowledge (e.g., Cacciatore et al., 2018; Castro et al., 2021; Dimitrova et al., 2014; Feezell

CONTACT Atle Haugsgjerd  atle.haugsgjerd@samfunnsforskning.no  Institute for Social Research, Oslo, Norway
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& Ortiz, 2021; Shehata & Strömbäck, 2021; Van Erkel & van Aelst, 2021). Parallel to this research agenda, recently a growing number of studies have investigated how social media news use affects citizens' evaluations of their own knowledge, that is, their feeling of being informed (Feezell & Ortiz, 2021; Kumpel et al., 2022; C. Y. Park, 2001; Schaefer, 2020; Yamamoto & Yang, 2022; Schaefer, 2020 #1323). Taken together, these strands of research suggest that social media news use does not make people more knowledgeable about politics and current affairs, but increases their general feeling of being informed (S. Lee & Xenos, 2019; S. Lee et al., 2021, 2022; Schaefer, 2020; Yamamoto & Yang, 2022).

In this article, we further investigate the relationship between social media news use and political knowledge and base our approach on the seminal work of Kuklinski et al. (2000). They distinguished between factual knowledge and confidence in knowledge and used the term “misinformation” to describe the situation when people hold inaccurate factual beliefs and do so confidently. “Misinformed citizens,” in this sense of the term, are distinct from “uninformed citizens” who hold incorrect factual beliefs but do not place any confidence in them. We examine how social media news use is related to factual political knowledge, confidence in knowledge, and the combination of these two dimensions in the form of misinformation. To study this question, we use representative individual-level panel data collected in the fall of 2020. A comprehensive, tailor-made battery of questions was developed for the specific purpose of this study. The panel structure of the data allows us to go beyond the cross-sectional analyses typical of many previous studies (e.g., Caciatore et al., 2018; Castro et al., 2021) and run panel-data regression models.

We make the following contributions to the literatures on political knowledge and misinformation in the digital news environment. First, by studying confidence in specific retrieved facts, in line with the original approach of Kuklinski et al. (2000), our study complements most previous research that has tended to examine so-called “subjective knowledge,” that is, people's overall self-assessment of their knowledge and their general sense of being informed (S. Lee et al., 2022; Yamamoto & Yang, 2022). Although these concepts of knowledge have important similarities, they are different in that the first is a general self-assessment of one's political competence, while the latter is confidence in the accuracy of a specific fact retrieved from memory.

Second, the strand of literature on confidence in knowledge that originated with Kuklinski et al. (2000) has provided important insights about the psychological antecedents of this type of misinformation, but has to a lesser extent focused on the possible influence of behavioral factors and media use in particular (Jerit & Zhao, 2020). We add to this body of research by investigating whether citizens' news use within the digital media environment influences confidence in knowledge and misinformation.

Third, we propose a novel approach to measuring misinformation at the individual level that distinguishes between uninformed users (low knowledge but little confidence in it) and misinformed users (low knowledge but high confidence in it) (cf. Kuklinski et al., 2000; S. Lee & Akitaka, 2018; S. Lee, 2020). This measure breaks new ground by combining factual knowledge and confidence in knowledge into one measure of misinformation. This empirical approach should be useful for future studies of misinformation in the digital media environment.

Finally, previous research on social media and subjective knowledge has focused on either the U.S (e.g. Anspach et al., 2019; S. Lee et al., 2021) or countries in Asia (David et al., 2019; Yamamoto & Yang, 2022). By contrast, we have collected Norwegian primary data,

and thus complement existing research by studying how social media news use affects confidence in knowledge and misinformation in a Western European high-quality news context. Taken together, our theoretical and empirical approach provides new insights into the democratic implications of social media news use.

Theory

Political Knowledge as a Two-Dimensional Construct

“Political knowledge” is traditionally defined as the accurate retrieval of factual information stored in memory about politics and societal issues (Delli Carpini & Keeter, 1996). This ability is crucial from a democratic perspective, as it influences a wide range of attitudinal and behavioral outcomes, such as acceptance of democratic principles, attitudes toward specific political issues, and political participation (e.g., Bartels, 1996; Galston, 2001; Kleinberg & Lau, 2019). Implicitly or explicitly, most research on political knowledge builds on this definition, measuring political knowledge in terms of respondents’ ability to correctly answer factual questions.

Psychologists, however, have proposed that knowledge is a two-dimensional construct, with one dimension consisting of the ability to retrieve stored information, and the other consisting of confidence in what is being retrieved. The latter dimension is referred to as “confidence in knowledge” (Kuklinski et al., 2000; Schacter, 1983). This distinction is important for a number of reasons. If political knowledge is indeed the “currency of democratic citizenship,” as Delli Carpini and Keeter (1996) have argued, then confidence in knowledge increases the likelihood that these facts will inform political preferences and behaviors in meaningful ways. Confidently held inaccurate beliefs, however, increase the likelihood that people will make decisions that are not consistent with their preferences had they been correctly informed (e.g., Kuklinski et al., 2000). Confidence in knowledge is also important for political behavior. For example, S. Lee and Akitaka (2018) found that factual knowledge and confidence in knowledge are related to different antecedents and outcomes. Confidence in knowledge is more closely associated with political engagement than factual knowledge. Other studies have indicated similar results for willingness to engage (S. Lee et al., 2021) and to discuss politics (Schaefer, 2020).

Equally important, distinguishing between these two dimensions of political knowledge allows for distinguishing the condition of being “misinformed” from the condition of being “uninformed” (S. Lee & Akitaka, 2018). While the latter concept simply implies a lack of factual information, the former describes a case in which someone is wrong about the facts but nevertheless has confidence in these beliefs. Consistent with this proposition, we treat misinformation as an individual-level descriptive concept that is distinct from neighboring concepts such as beliefs in rumors and conspiratorial thinking (see Jerit & Zhao, 2020, p. 78, for a discussion). While the cure for being uninformed is to obtain better and more information, misinformed citizens are likely to be less willing to process new information that contradicts what they already think they know, at least with respect to contested political issues (Kuklinski et al., 2000, p. 794).

Empirical research has just begun to scratch the surface of the causes and consequences of being politically misinformed (see for instance Graham, 2020; Ortoleva & Snowberg, 2015; van Kessel et al., 2021). The research literature has provided important insight

regarding the psychological processes that lead to misinformation – including people’s unintentional desire to reach conclusions that are consistent with their attitudes. Other factors, such as personality traits and behavioral factors, media use in particular, have received less attention (Jerit & Zhao, 2020). Given the important role of social media as news sources in today’s media environment (e.g., Bode, 2016; Newman et al., 2018), it is critical to determine how social media news use is related to factual political knowledge, confidence in knowledge, and the combination of these two dimensions in the form of misinformation.

Social Media News Use and Factual Political Knowledge

A growing body of literature has investigated the relationship between social media news consumption and political knowledge, understood as factual political knowledge (Bode, 2016; Cacciatore et al., 2018; Castro et al., 2021; Dimitrova et al., 2014; Gottfried et al., 2017; H. Lee & Yang, 2014; Shehata & Strömbäck, 2021). This literature assumes that the online environment offers greater content complexity than the traditional media environment (Castro et al., 2021; Shehata & Strömbäck, 2021; Thorson & Wells, 2016). Whereas traditional media curate news based on specific journalistic and ethical standards, ensuring that citizens are provided with a selected but diverse set of relevant news, social media has been described as an environment that offers a set of “curated flows” (Thorson & Wells, 2016). The term “curation” refers here to selecting, organizing, and managing the abundance of available information into something that fulfills an informational need (Thorson & Wells, 2016, p. 313).

The logic of network media and social media curation arguably leads to three interrelated problems (Shehata & Strömbäck, 2021). First, news through social media is not restricted to professional news providers; in addition to these, there are numerous alternative information sources in the flow of information. Second, the news encountered on social media is not selected by a news organization, but by recommendations from peers and more-or-less hidden algorithms, which likely leads to a less informative and less diverse news diet. Third, and relatedly, on social media the news is more tailored to individual preferences, and therefore less likely to offer a set of generalized news stories (see also Bright, 2016).¹

Consistent with these theoretical expectations, several studies have found a negative relationship between social media news use and factual political knowledge (e.g., Cacciatore et al., 2018; Dimitrova et al., 2014; H. Lee & Yang, 2014; S. Lee, 2020; Shehata & Strömbäck, 2021; van Erkel & van Aelst, 2021). For instance, Shehata and Strömbäck (2021) concluded that social media “appears to be a qualitatively different type of news source” that provides more “personalized, attitude-specific and issue-specific learning” (Shehata & Strömbäck, 2021, p. 141).

Nevertheless, existing empirical evidence on the relationship between social media news use and factual political knowledge is inconclusive (Amsalem & Zoizner, 2022; Lorenz-Spreen et al., 2022). A recent large-scale comparative study found somewhat mixed results regarding the relationship between social media news use and factual knowledge (Castro et al., 2021), and several non-European studies have found a positive relationship (Di & Fang, 2019; Kim & Kwak, 2017; C. S. Park & Kaye, 2018). Moreover, some of the problems related to social media curation are potentially amended if individuals engage with content from legacy news outlets in and through social media networks. Relatedly, any negative

impact that social media might have on political knowledge should be less severe for individuals who also use traditional media as a news source (Castro et al., 2021).

Overall, while we acknowledge that the informational effects of social media news consumption likely depend on the quality of both online and offline news sources, the theoretical discussion related to social media curation and the total weight of empirical evidence lead us to expect a negative relationship between social media news use and being informed about news and current affairs. Therefore, we hypothesize that social media news consumption is negatively related to factual knowledge (Hypothesis 1).

Social Media News Use, Confidence in Knowledge, and Misinformation

Even if social media news use should contribute less to political knowledge, it does not mean that people do not *feel* more knowledgeable after consuming news on these platforms. Indeed, in their seminal contribution, Kuklinski et al. (2000) found that a large proportion of American voters overestimated their knowledge of American politics, and particularly those holding the least accurate beliefs. Research in other areas has reached similar conclusions. Market researchers use the term “miscalibration” to describe how consumers tend to overestimate their knowledge of products (e.g. Alba & Hutchinson, 2000), and social psychologists describe people’s tendency to overestimate their reasoning, knowledge, and performance as the Dunning-Kruger effect (e.g. Mazar & Fleming, 2021). Some have even argued that “overconfidence is indeed a robust phenomenon and can be adopted by researchers as a stylized fact about human cognition” (Alba & Hutchinson, 2000, p. 123).

There are strong theoretical reasons to believe that social media news use can lead to overconfidence and a subjective feeling of knowing. The curation of content on social media by strategic actors, personalization, and algorithmic filters may instigate repeated exposure to the same content, which in turn creates a sense of knowing (Schaefer, 2020). Moreover, the public sphere constituted through social media is structured in ways that could reinforce cognitive biases (e.g. Cinelli et al., 2021; Karlsen et al., 2017). Such cognitive biases may imply strong beliefs that information disseminated in the social media environment is accurate, leading to a positive association between social media news use and confidence in knowledge. Indeed, the majority of empirical studies on subjective knowledge have found that use of social media for news increases people’s belief of being informed, also when factual knowledge levels are low (Feezell & Ortiz, 2021; S. Lee & Xenos, 2019; S. Lee et al., 2021, 2022; Schaefer, 2020; Yamamoto & Yang, 2022).

However, although clearly related, the general subjective feeling of being informed is not identical to specific confidence in retrieved facts from memory. While the former is a general self-assessment of being informed about a topic, the latter is confidence in a specific fact retrieved from memory being correct. Social media news consumption can of course influence both aspects in a similar manner. However, the two aspects can also differ in both antecedents and effects, and it is possible that reliance on social media for news creates a general sense of being informed that is not reflected in confidence about specific knowledge. A two-wave panel study from the U.S. conducted in 2018, using identical measures to our study, found that news consumption on social media impedes learning about politics – not only with respect to factual knowledge, but also with respect to confidence about retrieved knowledge (S. Lee, 2020).

Based on the results from the studies on social media and subjective knowledge (Anspach et al., 2019; Feezell & Ortiz, 2021; S. Lee et al., 2021), we hypothesize that social media news use is positively associated with confidence in knowledge (Hypothesis 2). With respect to misinformation, as conceptualized in this work, it follows from the combination of H1 and H2 that we expect social media news use to make people confident in incorrect factual beliefs. Thus, we expect social media news use to be positively related to being politically misinformed (Hypothesis 3).

Data

We designed and collected two waves of individual-level panel data from Norway. The Norwegian media system is characterized by a dominant public service broadcaster (Syvertsen et al., 2014), low levels of news avoidance (Karlsen et al., 2020), and comparatively high levels of social media news use and people with higher education (Skogerbø & Karlsen, 2021). Norwegian newspapers have also made the transition to online environments quite successfully (Sundet et al., 2020). Even though much of the content is behind paywalls, the Norwegian hybrid digital sphere provides access to large amounts of quality news to the general public. Given that the Norwegian case enables people to gain political knowledge from social media use, it should be an interesting case to investigate the research question posed in this paper.

The panel data were collected in the fall of 2020 using Kantar's online panel, and the questionnaire was distributed as a web survey. Kantar's online panel is comprised of a pre-recruited selection of about 40,000 people over the age of 15 who are willing to participate in surveys. The participants were randomly recruited via telephone (landline and mobile) and postal surveys, which allowed a representative sample to be drawn. The sample is representative in terms of gender, age, and education levels, with young people slightly under-represented. Wave I was fielded in the period from September 25 to October 26, and a total of 3,285 respondents participated in the first wave. Wave II was fielded in the period from November 21 to December 23. All respondents from the first round were re-contacted and asked to participate in the second wave, and 2,318 respondents participated in both waves. In addition, to ensure that Wave II could be used as a cross-sectional sample, fresh respondents were added; thus, the total sample in Wave II included 3,009 participants. In the analysis, we used the balanced panel of 2,318 respondents, but replicated the analyses on the cross-sectional Wave II data to validate the results.²

Research Design

Our research design is similar to previous studies that use two-wave panel data to investigate acquired knowledge about topics covered in the news (e.g., S. Lee, 2020; Shehata & Strömbäck, 2021). We measured people's factual political knowledge and confidence in knowledge in the second wave of the survey, asking only about issues and events covered in the news in the period *between* the two waves. Our key explanatory variable, news consumption on social media, was measured in the first wave, along with a range of important control variables capturing motivational factors, cognitive resources, and socio-demographic characteristics. This setup allowed us to run time-lagged regression models in

which we controlled for prior levels of static political knowledge, which mitigated against the problem of reversed causality.

We analyzed the relationships between social media news consumption and our three dependent variables (factual knowledge, confidence in knowledge, and misinformation) using a similar stepwise approach. We started by presenting bivariate relationships in a model with a lagged explanatory variable. Then, in the second model, we controlled for traditional news consumption and the extent to which people followed news outlets on social media. This is an important step, as people who use social media for news consumption are also likely to consume news using traditional media (e.g., Castro et al., 2021). Moreover, engaging with news outlets on social media might amend some of the problems with online news consumption discussed in the theoretical section (e.g., Barnidge & Xenos, 2021). Third, we controlled for typical sociodemographic variables that may confound the relationships between social media news consumption and political knowledge: Age, gender, and education. Finally, we controlled for political interest, prior static political knowledge, and assertive personality traits. In each regression model, our dependent variable was measured at t^2 , while our explanatory and control variables were measured at t^1 .

Measurements

Dependent Variables

All of our items on factual political knowledge were designed to measure knowledge about recent political developments and events. This is referred to as “political surveillance knowledge,” which is distinct from static knowledge (Barabas et al., 2014). We measured factual political knowledge by asking 16 questions concerning politics and current affairs covered in the news in the period between Waves I and II. The topics included COVID-19 (four items), international affairs (four items), Norwegian politics (four items), and Norwegian policy (four items). In designing these questions, we followed the example of Barabas et al. (2014) and included questions pertaining to both politics and policy. The questions were mainly non-contentious factual questions. To prevent respondents from looking up answers online, they had only 15 seconds to answer the questions. We computed an additive index counting the number of correct answers. Scores on the index of factual knowledge range from 0 (no correct answers) to 16 (all correct answers).

Second, we measured knowledge as confidence, in line with S. Lee and Akitaka (2018, p. 4). After each factual knowledge question, respondents were asked how confident they were that their answer was correct on a scale from 1 (very uncertain) to 11 (very certain). Based on these items, we computed a confidence index that averaged the mean values of all 16 items.

Finally, to operationalize misinformation, we standardized the index of factual knowledge and the index of confidence in knowledge so that they were both on a scale of 0–10. We then subtracted the factual knowledge index from the confidence in knowledge index.³ Positive values represent high levels of confidence and low levels of factual knowledge.

Explanatory Variables

We utilized two different measures of social media news consumption. Our first measure is based on the following question: “On a typical day, how much time do you spend watching, listening to, or reading news about politics and societal issues on . . . ?” The media channels in question were television, radio, newspapers (including online), magazines, and social media (e.g., Facebook, Twitter, TikTok, YouTube, and Snapchat). The response categories were as follows: no time, up to 15 minutes, up to 30 minutes, up to 1 hour, up to 1.5 hours, up to 2 hours, up to 2.5 hours, up to 3 hours, up to 4 hours, and up to 5 hours or more.⁴ Second, we measured social media news consumption by asking about people’s most important news sources: “Regardless of how much time you spend on different media types, what is your main source of news for political and societal issues?” In the main analysis, we presented the results based on the frequency item. In the appendix, we replicated all analyses using the latter item as a binary variable (social media as the most important source vs. not the most important source).⁵ Finally, we measured people’s traditional news consumption by creating a mean index of the television, radio, and newspaper frequency items.

Control Variables

We measured political interest using the standard item in the literature (Prior, 2019): “How interested are you in politics?” The response categories were “very interested,” “somewhat interested,” “only slightly interested,” and “not at all interested.” We measured static political knowledge through 10 factual knowledge questions on politics and policy issues (Barabas et al., 2014). Based on these 10 items, we computed an additive index that ranges from 0 (no correct answers) to 10 (10 correct answers). The degree to which people engage with news media outlets on social media was measured by the following question battery: “How many news media, such as VG, NRK, or your local newspaper, do you follow on . . . ?” We measured the use of news outlets on four different social media platforms: Facebook, Twitter, Instagram, and Snapchat. Our variable takes the highest value of the four variables. Age is a continuous variable, while gender and higher education are included as binary variables. Finally, in order to control for the possibility that there may be categories of citizens who simply are confident in wrong information due to their personality, we computed an index measuring assertive personality trait. This is a mean index based on the following three items: “I consider myself . . . 1) self-confident, 2) ambitious, 3) like to take the lead” (Chronbach’s $\alpha = .79$). We describe all the dependent and independent variables used in the summary presented in Table 1.⁶

Analyses

Social Media News Consumption and Factual Political Knowledge

In this section, we study the relationship between social media news consumption and factual political knowledge (Table 2). We hypothesized that social media news consumption would be negatively associated with factual political knowledge (H1). We begin by showing the simple bivariate relationship in Model 1. In Model 2, we controlled for traditional news consumption and following news media outlets on social media. We then controlled for

Table 1. Descriptive information of variables included in the analyses.

Name	Min	Max	Mean	St. Dev	N
Factual political knowledge	0	16	8.49	2.98	2318
Confidence in knowledge	0	10	5.27	2.06	2318
Misinformed	-10	10	-.04	1.92	2318
Social media news consumption	0	5	.56	.78	2318
Social media most important source	0	1	.07	.25	2318
Traditional news consumption	0	5	1.52	1.23	2318
Political interest	0	3	1.95	.70	2303
Static political knowledge	0	10	6.10	1.83	2318
Following news outlets on social media	0	3	.80	.82	2318
Assertiveness	1	7	4.19	1.22	2308
Age	18	88	54.48	16.66	2318
Gender	0	1	.49	.50	2318
Higher education	0	1	.37	.48	2318

Table 2. Social media news consumption and factual political knowledge (OLS).

	Model 1	Model 2	Model 3	Model 4
Social media news consumption	-0.46** (0.08)	-0.66** (0.09)	-0.35** (0.08)	-0.23** (0.07)
Traditional media news consumption		0.42** (0.05)	0.26** (0.05)	0.12** (0.04)
Following news outlets on social media		0.03 (0.08)	0.09 (0.07)	0.05 (0.07)
Age			0.05** (0.00)	0.03** (0.00)
Female			-1.25** (0.11)	-0.72** (0.11)
Higher education			1.36** (0.12)	0.49** (0.11)
Political interest				1.09** (0.08)
Static political knowledge				0.53** (0.03)
Assertiveness				-0.04 (0.04)
Intercept	8.75** (0.08)	8.20** (0.11)	5.58** (0.24)	1.51** (0.33)
N	2318	2318	2318	2293
R ²	0.01	0.04	0.17	0.36

Standard errors in parentheses.

* $p < .05$, ** $p < .01$.

sociodemographic factors in Model 3 and added political interest, static political knowledge, and the assertive personality index in Model 4.

The main finding in Table 2 is that, as expected, social media news consumption is associated with less knowledge about politics and current affairs. The coefficient is negative and statistically significant in all models, even when controlling for prior levels of static political knowledge (-0.46, -0.66, -0.35, -0.23; $p < .01$). According to Model 1, which shows the simple bivariate relationship, using social media for 30 minutes per day for news consumption reduces knowledge by about one correct answer (out of 16). When controlling for traditional news consumption and following news outlets on social media, the magnitude of the coefficient increases, suggesting that individuals who use other news channels in addition to social media are better informed than those who exclusively use social media for news consumption (Model 2). Also as expected, the relationship between traditional media

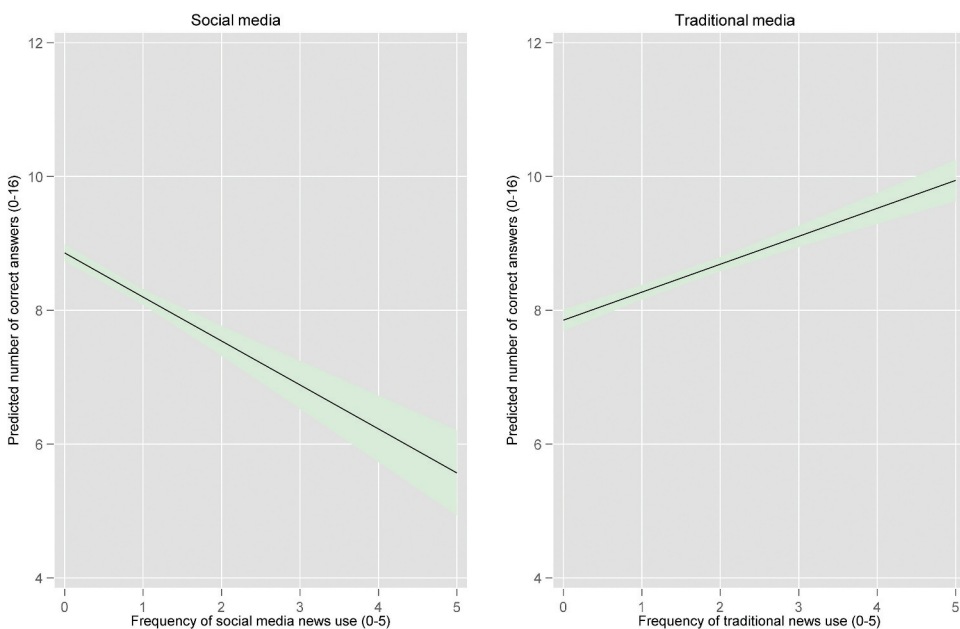


Figure 1. Predicted levels of factual political knowledge (number of correct answers) based on social media news use and traditional media news use. Based on Model 2 in Table 2.

use and factual political knowledge is positive. In Figure 1 we illustrate these relationships and show the predicted number of correct answers for different levels of social media news use (left panel) and traditional media news use (right panel).⁷

Furthermore, Table 2 shows that the negative relationship between social media news use and factual knowledge is partially explained by sociodemographic characteristics, as the magnitude of the social media coefficient is almost cut in half by age, gender, and education (Model 3). The negative relationship is also to some extent explained by political interest, static political knowledge, and the assertive personality index (Model 4).⁸ Nevertheless, the overall relationship between social media news consumption and factual knowledge is not fully explained by these factors.⁹

Social Media News Consumption and Confidence in Knowledge

We hypothesized that there would be a positive relationship between social media news consumption and confidence in knowledge (H2). As shown in Table 3, contrary to our expectation, the consumption of news on social media is not associated with a stronger belief in being correct, but with a lower confidence in knowledge.

The social media news use coefficient is negative and significant in all models (-0.31, -0.52, -0.18, -0.15; $p < .01$). Again, the magnitude of the coefficient increases when controlling for traditional news consumption. This suggests that individuals who use traditional news in addition to news on social media are more confident in their knowledge than individuals who solely use social media for news consumption (Model 6). Traditional media news use is positively related to confidence in knowledge. To illustrate the direction and magnitude of these relationships, we show in Figure 2 the predicted levels of confidence in

Table 3. Social media news consumption and confidence in knowledge (OLS).

	Model 5	Model 6	Model 7	Model 8
Social media news consumption	-0.31** (0.05)	-0.52** (0.06)	-0.18** (0.05)	-0.15** (0.05)
Traditional media news consumption		0.43** (0.03)	0.22** (0.03)	0.15** (0.03)
Following news outlets on social media		0.04 (0.05)	0.16** (0.04)	0.10* (0.04)
Age			0.06** (0.00)	0.06** (0.00)
Female			-0.86** (0.07)	-0.51** (0.07)
Higher education			0.51** (0.07)	0.06 (0.07)
Political interest				0.80** (0.05)
Static political knowledge				0.14** (0.02)
Assertiveness				0.17** (0.03)
Intercept	5.44** (0.05)	4.86** (0.07)	1.66** (0.15)	-0.94** (0.21)
N	2318	2318	2318	2293
R ²	0.01	0.08	0.37	0.48

Standard errors in parentheses.

* $p < .05$, ** $p < .01$.

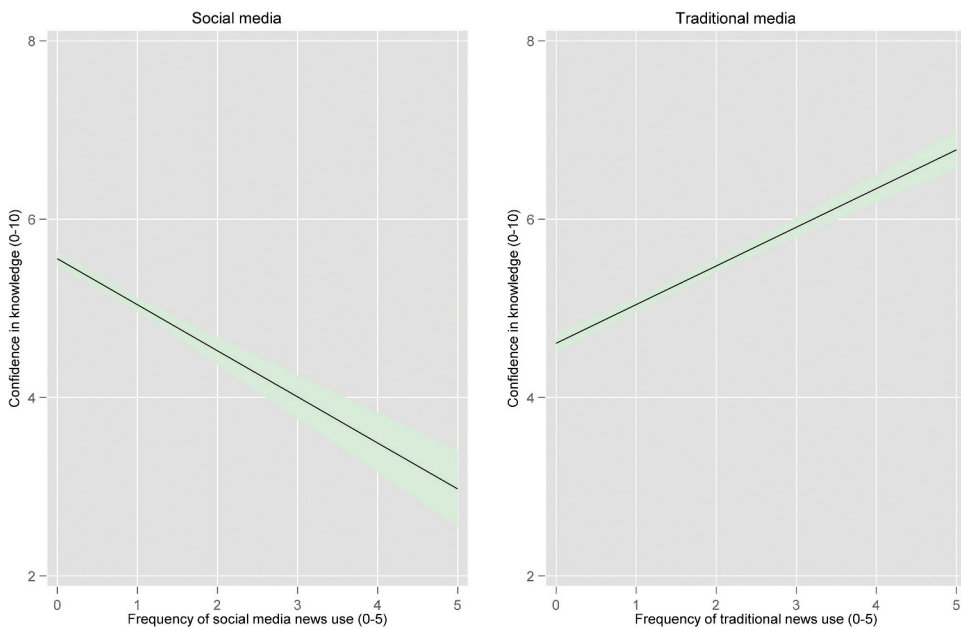


Figure 2. Predicted levels of confidence in knowledge based on social media news use and traditional media news use. Based on Model 6 in Table 3.

knowledge for different levels of social media news use (left panel) and traditional media news use (right panel).

As for the control variables, confidence in knowledge is largely associated with the same characteristics that determine factual political knowledge: gender, education, age, political interest, static political knowledge, and the assertive personality index. To some extent, the negative relationship between social media news use and confidence in knowledge is mediated by these variables. Thus, the negative relationship in question is partly due to the social characteristics of citizens who use social media for news (Model 7) and their tendency to be less knowledgeable and politically interested in the first place (Model 8).

Social Media News Consumption and Misinformed Citizens

In this last empirical section, we examined the two dimensions of knowledge in combination. More specifically, we investigated the relationship between social media news consumption and the misinformed index. As described in the methods section, the misinformed index combines factual knowledge levels and confidence in knowledge by subtracting the former from the latter. We hypothesized that social media news use would be positively associated with being misinformed (H3). Table 4 shows the results of our multivariate analysis, with the misinformed index as the dependent variable.

The key finding from Table 4 is that there is no statistically significant relationship between social media news consumption and being misinformed. The social media news use coefficient is close to zero and not statistically significant in any model. This is an important finding: while social media news use is related to less knowledge about politics and current affairs, as well as lower confidence in that knowledge, there is no relationship with being misinformed in terms of being confident in one's incorrect beliefs. By contrast,

Table 4. Social media news consumption and being misinformed (OLS).

	Model 9	Model 10	Model 11	Model 12
Social media news consumption	-0.02 (0.05)	-0.11 (0.06)	0.03 (0.05)	-0.00 (0.05)
Traditional media news consumption		0.17** (0.03)	0.06+ (0.03)	0.07* (0.03)
Following news outlets on social media		0.02 (0.05)	0.11* (0.05)	0.07 (0.05)
Age			0.04** (0.00)	0.04** (0.00)
Female			-0.08 (0.08)	-0.06 (0.08)
Higher education			-0.34** (0.08)	-0.25** (0.08)
Political interest				0.12* (0.06)
Static political knowledge				-0.19** (0.02)
Assertiveness				0.20** (0.03)
Intercept	-0.03 (0.05)	-0.26** (0.07)	-1.99** (0.16)	-1.88** (0.24)
N	2318	2318	2318	2293
R ²	0.00	0.01	0.12	0.17

Standard errors in parentheses.

* $p < .05$, ** $p < .01$.

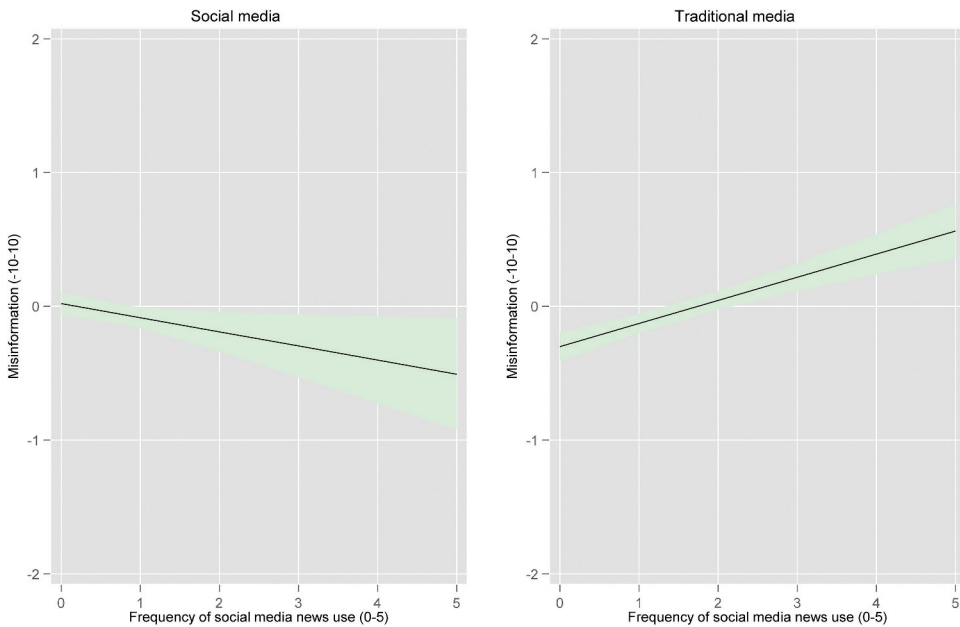


Figure 3. Predicted levels of misinformation based on social media news use and traditional media news use. Based on Model 10 in Table 4.

news consumption on traditional media is positively related to misinformation, although the magnitude of the correlation is modest (Model 10). In Figure 3, we illustrate the predicted levels of misinformation for different levels of social media news use (left panel) and traditional media news use (right panel).

Regarding the control variables (Models 11 and 12), both education and static political knowledge are negatively related to being misinformed, suggesting that ability somewhat increases the ability to discriminate between correct and incorrect answers. By contrast, motivational factors appear to have the opposite influence. Both political interest and the assertive personality index are positively related to the misinformed index.

Discussion and Conclusion

In this study, we examined how factual political knowledge, confidence in knowledge, and misinformation, understood as the mismatch between factual political knowledge and confidence in knowledge, are related to social media news consumption. We found a consistent negative relationship between social media news consumption and factual political knowledge, particularly among those who did not use other news sources besides social media. Thus, our first hypothesis (H1), was fully supported. This result is consistent with much previous research (Cacciatore et al., 2018; S. Lee, 2020; Shehata & Strömbäck, 2021; van Erkel & van Aelst, 2021), although the overall evidence is inconclusive (Lorenz-Spreen et al., 2022). We can only speculate, but the quality of the news environment might be an interesting factor to consider when interpreting our results. Norway is characterized by a rich information environment and the availability of free, high-quality news (Skogerbø & Karlsen, 2021). In a high-quality news environment with an informed legacy news

audience, differences in political knowledge between this group and those who mainly use social media as a news source might be larger than in a poorer information context. Similar results to ours, showing a negative relationship between social media news use and factual knowledge, have indeed been found in comparable media systems, such as Sweden (Shehata & Strömbäck, 2021) and the Netherlands (Van Erkel & van Aelst, 2021).

We also found that social media news use is negatively related to confidence in knowledge, which means that H2 is not supported. Furthermore, based on our novel approach to study misinformation on the individual level, we demonstrated that misinformation in this sense is unrelated to social media news consumption. This means that our third hypothesis (H3) is also not supported. In other words, social media news consumers are not misinformed – they are just more uninformed than others.

The latter results contrast with most previous research comparing peoples' factual knowledge with various forms of subjective knowledge. In general, these studies have found that social media news use contributes to people not only feeling informed, but also overestimating their level of knowledge (Feezell & Ortiz, 2021; S. Lee et al., 2022; Schaefer, 2020; Yamamoto & Yang, 2022). However, these studies mostly investigated different information environments than a Western European news context, primarily the U.S. and South-East Asian countries. S. Lee (2020), who studied confidence in retrieved facts using measures of confidence in retrieved facts similar to ours, did however come to similar results as our study, using U.S. data. Overall, these findings support the argument that the concepts of subjective knowledge and confidence in knowledge have important similarities, but are not identical and differ in their antecedents (S. Lee & Akitaka, 2018). In other words, it appears as if reliance on social media for news creates a general sense of being informed that is not necessarily reflected in confidence in retrieved facts. An important avenue for further research is to systematically compare the general sense of being informed and confidence in retrieved facts in different news contexts, also in terms of their antecedents and consequences.

To date, social media news use has mostly remained unexplored in the misinformation literature originating from Kuklinski et al. (2000), despite the proposition that media exposure matters (Jerit & Zhao, 2020, pp. 78–81). To achieve further progress in this domain, more studies are needed on mechanisms that may explain such outcomes. Considering that misinformation likely results from an interplay between exposure to information and internal cognitive processes (Jerit & Zhao, 2020, pp. 78–81), such studies should consider factors at both the individual and structural levels (Delli Carpini & Keeter, 1996). We show that the factors of motivation and ability influence misinformation differently from factual political knowledge and confidence in knowledge. Education, static political knowledge, and political interest increase both factual knowledge and confidence in knowledge, and explain some of the negative relationships to social media use. However, education and static knowledge decrease misinformation, while political interest increases it. This suggests that people with high ability are better able to recognize when they are wrong about facts. By contrast, some people seem to consistently insist on being right when they are wrong, regardless of motivation. Our measure of assertiveness was positively related to misinformation, even when other factors were taken into account. The latter finding is an indication that being misinformed is linked to certain stable personality traits. In this way, our results also speak to the broader literature on misinformation that has shown great interest in the impact of psychological factors (Jerit & Zhao, 2020).

A limitation of the study is that we studied the effect of social media news consumption using measures of self-report, which may lead to inaccuracies. The measures were also limited in terms of tapping the actual content that users meet through the set of curated flows in their news feed, which could be important in conditioning learning (cf. Shehata & Strömbäck, 2021; Thorson & Wells, 2016). Even though we did include a control variable for exposure to traditional news media through social media, it is clear that more work should be done to develop measures that measure such variations in content and quality. All in all, the present research design is less apt at distinguishing effects resulting from lack of news exposure due to curation, and effects due to more inherent aspects of social media technologies that make them worse platforms for learning when people are exposed to a message. Studies that combine survey and social media data, which would allow us to measure both self-reported news use and objective measures of social media networks and feeds, would be preferable. However, such studies are difficult to implement.

Moreover, surveillance knowledge is difficult to measure. We relied on a series of questions about political information and events reported in the traditional news media to operationalize this concept. It could be argued that this approach is biased toward the traditional news agenda and that our measurement therefore to a lesser extent reflects the news agenda on social media. Still, the fact that we included a broad range of political issues concerning both politics and policy topics, should, as we see it, increase the likelihood of these items representing general information about events and current affairs.

In conclusion, this study adds evidence to the increasing body of research showing that digital media forms a poorer environment for informing citizens about politics and current affairs. In particular, our findings suggest that social media is not only a less useful platform for acquiring factual political knowledge, but also for fostering confidence in that knowledge. In this sense, knowledge acquired through social media seems to be less useful as a “democratic currency,” given that such confidence is important for opinion formation and inspiring political participation (Kuklinski et al., 2000; S. Lee & Akitaka, 2018; S. Lee et al., 2022). This is a democratic worry. The study nevertheless modifies this concern to some extent, as social media does not produce people with great confidence in inaccurate beliefs (Jerit & Zhao, 2020; S. Lee & Akitaka, 2018). In general, then, the digital news environment seems to foster an uninformed but not a misinformed news audience.

Notes

1. In addition, Van Erkel and van Aelst (2021) suggested and found empirical support for the notion that social media contributes to information overload and, therefore, less learning.
2. See Tables A7–A9 in the appendix. These analyses yielded similar results to the main analyses.
3. Lee et al. (2022) used a similar approach to measure the gap between factual knowledge and the general feeling of being informed.
4. Our variable measuring social media news use is right skewed. About 30% of respondents spend no time using social media for news, while more than 50% spend between 15 minutes and an hour per day for this purpose. Only about 15% of respondents spend more than an hour per day on social media news consumption. We tested whether the distribution of our social media measure affects the distribution of the residuals. This is not the case – the residuals are virtually normally distributed in all models.
5. See Tables A4–A6 in the appendix. The analyses with the alternative measure of social media news use yielded similar results to the main analysis.

6. See Table A1 in the appendix for question wording of the knowledge items and Figure A1 for the proportion of respondents with correct answers and their mean confidence in the answers being correct.
7. As our measure of factual political knowledge is a count variable, we also ran negative binomial regression models yielding the same results. See Table A10 and Figure A2 in the appendix.
8. The effect of social media news use is not conditioned by political interest nor static political knowledge. See Table A2 in the appendix.
9. Analyses distinguishing among different types of factual knowledge (COVID-related issues, international issues, political issues, and policy issues, additive knowledge indexes from 0 to 4) show that the negative relationship between social media news consumption and factual knowledge is valid across issue topics (Table A3 in the appendix). However, the relationship is much weaker for “COVID issues” and is not significant for “political issues” when controlling for OMA factors and sociodemographic factors. We also performed jackknife analyses, excluding one of the knowledge items each time to see whether any specific item drives the results. The size of the relationship was similar across all models. See Figure A3.

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No potential conflict of interest was reported by the author(s).

Notes on contributors

Atle Haugsgjerd, is a senior research fellow at the Institute for Social Research, Oslo. His research concerns political behaviour, political communication and democracy in Europe.

Rune Karlsen, is professor at the Department of Media and Communication, University of Oslo. His research interests focus on political communication, electoral research, political parties, and media effects.

Kari Steen-Johnsen, is a research professor at the Institute for Social Research, Oslo. She is interested in the conditions for democratic participation in the broad sense, emphasizing the consequences of digitalization and social media. Her research includes themes such as political mobilization and organization, citizen’s news use and political knowledge, as well as public debate and the freedom of speech.

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