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News consumption in the digital society

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Chapter 6

Conclusion and discussion

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The rise of digital technologies has important consequences for the way citizens are informed. Some scholars are optimistic and believe that digital technologies contribute to the quality of democracy. Digital technologies, for example, enable citizens to deal with the information overload and find more interesting content, as news consumption is becoming increasingly individualized and personalized (Stroud, 2011). At the same, these trends are an important source of concern. Other scholars fear that digital technologies have harmful implications for democracy. Citizens increasingly consume news that algorithms select for them, potentially resulting in filter bubbles, polarization, and fragmentation (Pariser, 2011; Sunstein, 2007). As a consequence, citizens who are more interested in politics are more likely to be directed to political news (i.e., the rich get richer). This dissertation contributes to this important debate in the field of political communication.

This dissertation integrated three groups of features that shape news consumption in the digital society (i.e., content features, consumer features, and context features) into one framework: the CCC-model. Scholarly work is usually limited to one or two of those groups of features, while it is ultimately the combination and interaction of all three groups of features to study news consumption in today's media landscape. Furthermore, to date, research has rarely examined the role of social ties and algorithms in patterns of news consumption, nor did it empirically test the effects of using digital technologies and platforms to connect with political and societal issues. Scholarly work examining the reciprocal relationship between news consumption and political interest repeatedly found inconsistent results. This dissertation filled these gaps and added substantially to the knowledge about the democratic role of digital technologies and platforms. This dissertation contributed to the literature by offering a thorough understanding of news consumption in the digital society and, more importantly, the consequences for citizens' interest in politics and engagement with political news.

In this final chapter, I will discuss the main findings and conclusions of the research presented in this dissertation. In addition, theoretical, methodological, and practical implications of this dissertation will be addressed. I will also identify areas for future research. Finally, concluding remarks are provided.

Content, consumer, context features: Patterns of news consumption

This dissertation started with the overarching research question: “*To what extent do content features, consumer features, and context features of news media interact in affecting how citizens consume news and, ultimately, affect interest in politics and engagement with political news?*”. This overarching research question can be divided into two sub-questions that together provide insight into news consumption in the digital society. Answers to these research questions form the starting point of this chapter.

The first two chapters of this dissertation focused on the first sub-question. It is questioned to what extent content features, consumer features, and context features of news media interact in citizens’ news consumption habits. Answering this question offered a comprehensive overview of the way citizens are informed about political and societal issues. Fundamental questions regarding the ‘tabloidization’ or ‘increasing infotainment’ can be answered. Will the growing supply of news draw citizens toward increasingly consuming entertainment news? Will the supply of political news merely attract those citizens who are already politically interested (the rich get richer) or will it also attract citizens who are not so much interested in politics? And if so, to what extent do digital technologies and platforms accelerate such processes?

Chapter 2 examined the interaction between content features and consumer features in the context of television news consumption, or, in other words, a traditional “one size fits all” context. By combining audience-meter data with survey data ($N_{\text{viewers}} = 3,672$, $N_{\text{households}} = 1,761$) and subtitle data ($N = 63,718$), Chapter 2 examined which topics are covered by various formats and genres of television programs (i.e., content features); and, more importantly, how viewing behavior can be connected to important predictors of news use, namely *political interest* and *political ideology* (i.e., consumer features).

Chapter 2 offered four valuable insights. First, news programs are clearly the most important program to get exposed to political news for the majority of viewers. News programs have not necessarily been replaced by other television formats or genres, such as late-night talk shows and satire programs. This means that, despite a growing diversity of formats and genres (Aalberg et al., 2013), citizens prefer traditional news broadcasts to ‘infotainment’ programs (e.g., late-night talk shows, satire programs) as their main news source.

Second, political interest is an important predictor of exposure to political news. With more and more television formats and genres available (Aalberg et al., 2013), citizens have to become more *selective* with respect to their news consumption decisions (van Aelst et al., 2017). According to prior scholarship (Prior, 2007; Stroud, 2011), politically interested viewers invest more time and effort in selecting their news diet. Chapter 2 echoed these findings. The results show that politically interested viewers are more likely to watch formats and genres of television programs that primarily cover news. Viewers who are not so much interested in politics, in contrast, were on average less likely to watch such programs. In turn, the results revealed that politically interested viewers are more often exposed to political topics in such programs compared to viewers who are less interested in politics.

Third, political ideology has an impact on how viewers allocate their viewing time. Chapter 2 indicated that viewers voting for left-wing parties are more likely to watch current affairs, opinion, and satire programs of public service television than viewers voting for right-wing parties. The results also indicated that, although viewers voting for right-wing parties do not necessarily watch opinion programs, they are equally likely as left-wing viewers to encounter political topics in such programs. This suggests that viewers voting for right-wing parties are less interested in entertainment news provided by such channels.

Finally, although viewers who do not vote, vote for a different party (i.e., without representation in the States General), or do not cast a ballot, consume an equal number of current affairs and opinion programs as left-wing viewers, they are less often exposed to political news in such programs. There seems to be an association between television news consumption and political participation (Ksiazek et al., 2010). Previous work already found that news consumption and participation represent a reciprocal relationship in which the news media “serve to further activate activism” (Norris, 2000, p. 7).

The dissertation shifted its focus from television to online news consumption. Or, in other words, from a “one size fits all” context to a setting with unique user experiences. **Chapter 3** examined the interaction between content features, consumer features, and context features across a wide range of online news sources. By passively tracking online news consumers (N = 354), this study analyzed the way news consumers combine news websites, search engines, and social media, as well as a variety of news topics (e.g., politics, entertainment), while navigating online. This resulted in a data set of more than one million URLs from 175 websites collected over 8 months in 2017/18.

Chapter 3 offered three insights into the way citizens consume news online. First, the vast majority of online news consumption patterns resemble offline news media habits, with individuals directly visiting homepages of their (probably) favorite, typically mainstream, news outlets (Flaxman et al., 2016). When news users browse through a news website, they are highly likely to continue browsing within that same outlet. This is even more so for politically interested news users. Although social media are not often used as an entry-point to a Web session, the results do give an indication on the role of social media in the online news consumption process. The results indicate that Facebook is particularly important in generating Web traffic to other, mostly local and regional, news outlets. For this finding, one could argue that users do not need Facebook to find typically mainstream news outlets. Search engines, on the other hand, seem to serve any type of news outlet.

Second, to understand whether the growing supply of news draws citizens toward increasingly consuming entertainment news, Chapter 3 examined news consumption of a wide variety of topics. While previous studies have examined people's selection of entertainment news (e.g., Prior, 2005), such studies did not quantitatively track what people choose to consume, and how they combine different topics into complex patterns of media use. The results of Chapter 3 certainly confirm previous findings (e.g., Pearson & Knobloch-Westerwick, 2018). News consumers prefer entertainment news over any other topic (e.g., politics, business). An explanation for this result might be that, due to a commercialized news business, news organizations increasingly seek attention by offering entertainment news (Tandoc, 2014). Personalization and customization have made it easier to avoid news about political and societal issues. As a consequence, the growing supply of (and interest in) entertainment news seems to precede the supply of (and interest in) political news. Although politically interested citizens were somewhat more likely to read news items covering political and societal issues, citizens predominantly select and consume entertainment news in an online news environment.

Finally, to determine whether certain news topics are more likely to be accessed through one pathway over another, Chapter 3 looked into the interplay between content features and context features. Although users particularly encounter entertainment news on Facebook (due to e.g., friends and acquaintances), which is in line with findings by Bakshy et al. (2015), entertainment news is not necessarily accessed via social media, but also via a wide variety of news websites.

Taken together, with more and more news sources to choose from, citizens have become more selective in their news consumption choices. As a result, political preferences (e.g., political interest, political ideology) play a key role in understanding patterns of news consumption. Politically interested citizens consume more political news, whereas those who prefer non-political news opt for more entertaining options. One could argue that the gap between citizens who are highly interested in politics and the ones who are not becomes wider, and that due to the context in which news consumption happens, those effects might be accelerated. In the second part of this dissertation, the consequences of digital technologies and platforms for citizens' interest in politics and engagement with political news are examined.

Causal and reciprocal effects: News consumption and political variables

Investigating the interplay between content, consumer, and context features not only yields important insights into patterns of news consumption, but also functions as the starting point for understanding the causal and reciprocal effects between news consumption and various political variables. This brings us to the second research question, which addresses to what extent content, consumer, and context features affect citizens' interest in politics and engagement with political news.

Chapter 4 presented an experiment among adolescents ($N = 230$) to uncover the democratic implications of using instant messaging apps for news. It examined whether interpersonal political discussion affects interest in politics and engagement with political news. More specifically, the affective responses (i.e., emotions, feelings), behavioral responses (i.e., actions and behavioral intentions), and cognitive responses (i.e., political knowledge) to interpersonal political discussion on instant messaging apps have been examined. The findings did not only advance earlier research about interpersonal political discussion but also provided a deeper understanding of the role of social ties in our current news media landscape.

Chapter 4 contributed four valuable insights. First, interpersonal political discussion on instant messaging apps has the potential to elicit positive emotions and feelings (e.g., curiosity, happiness, and excitement). Interesting to note, though, is that this effect did not carry over to negative emotions and feelings (e.g., anger, sadness, boredom).

This brings us to the second point. Affective responses to interpersonal political discussion on instant messaging apps are shaped by social ties. Instant messaging apps particularly facilitate interpersonal political discussion among family and friends—usually characterized by intimacy, respect, and mutual regard (Kenny, 1994). This might result in ideologically more homogeneous networks. The results of Chapter 4 indicated that interpersonal political discussion on instant messaging apps with very *strong ties* made participants feel more curious, happy, and excited compared to interpersonal political discussion with weaker ties.

Third, Chapter 4 examined the importance of interpersonal political discussion of news and politics in the process of political learning. The findings revealed that interpersonal political discussion positively affects issue-specific knowledge. This is in line with the differential gains hypothesis (Scheufele, 2002). That is, the influence of news consumption is partly determined by the presence or absence of related interpersonal discussion. Interpersonal political discussion helps adolescents to think about political and societal issues, relate personal experiences to politics, and reconsider issue stances. “[t]he act of engaging in discussion forces meaningful information processing and thus increases learning due to an influence on information processing during discussion” (Eveland, 2004, p. 180).

Fourth, the results did not indicate a significant effect of behavioral responses to interpersonal political discussion on instant messaging apps (e.g., political interest, seeking additional information.) This might indicate that when citizens are not necessarily exposed to a variety of different political viewpoints and arguments, the motivation to develop more informed views and advance their own political opinions, and thereby their interest in politics is limited (Torcal & Maldonado, 2014). To put differently, citizens are less likely to seek additional information if they do not have to counter opposing viewpoints to strengthen their arguments (Lyons et al., 2016).

Chapter 5 focused on the reciprocal relationship between news consumption and political variables. The study relied on two-wave panel survey data (N = 907). It extended previous work focusing on traditional news media (see e.g., Strömbäck & Shehata, 2019), by examining the reciprocal dynamics between political interest, news media trust, and news consumption across a wide variety of platforms, including social media, instant messaging apps, and non-mainstream news websites.

Chapter 5 offered four useful insights. First, the study clearly suggested a reciprocal effect for various news topics (e.g., national news, international news). The effects are particularly strong with respect to interest in political news. Besides, for many years, scholars have expressed concerns that consuming entertainment news might lead to opposite effects by

negatively influencing political interest (Prior, 2007). The effects were generally positive. In other words, Chapter 5 did not find support for ‘media malaise’—suggesting media have negative democratic influences (Strömbäck & Shehata, 2010).

Second, there are some reciprocal relationships between political interest and news media use, but also differences across media types. By distinguishing between *media effects* and *selection effects*, Chapter 5 examined whether there are reciprocal effects between political interest and news media use (Slater, 2007). Although reciprocal effects were evident predominantly with traditional news outlets, the chapter also indicated reciprocal dynamics between political interest and digital platforms (e.g., mobile news apps). Generally, it is noteworthy that there are stronger selection effects than media effects when examining specific forms of news media use. In line with the work of Prior (2007), political interest turned out to be very stable. This indicates that politically interested citizens are more likely to consume news, but media use does little to further promote interest.

Third, there are some reciprocal relationships between news media trust and news media use, but also differences across media types. In line with Strömbäck and Shehata (2019), also comparing public service and commercial television, Chapter 5 revealed a reciprocal relationship between trust in public broadcasting and watching television, but not for trust in commercial broadcasting. Public broadcasting television tends to provide hard news (Reinemann et al., 2016), leading those who are politically interested to watch public service television rather than commercial television (i.e., selection effect). Public service television also has a strong reputation as a reliable source for political and public issues, which, in turn, can have a stronger impact on political interest than watching commercial television (i.e., media effect; Strömbäck & Shehata, 2019). Besides, the results indicate reciprocal effects for non-mainstream news websites and social media. On the one hand, it can be argued that those who trust such outlets prefer to use these outlets precisely because they provide quick access to a wide variety of different (mainstream or non-mainstream) news outlets, and thus a range of viewpoints and perspectives. Social media platforms, for example, can act as gateways to other sources of news (Fletcher & Park, 2017). On the other hand, citizens might learn that the same event can be presented in many different ways. As a result, they might become more aware of the manipulative power of news and thus more skeptical toward journalism (Tsfati, 2010).

Finally, Chapter 5 advanced our understanding of changes in news consumption during a major public health crisis. This study relied on a two-wave panel study: A first wave in early December 2019, just before the outbreak of COVID-19 in China’s Hubei province, and the

second wave in April 2020, when COVID-19 had spread to the Netherlands where various measures were taken to prevent the spread of the virus. The results indicated that both traditional as well as online news consumption increased in the early stages of the COVID-19 pandemic (in comparison to routine periods a few years ago). Yet, television news consumption surpasses that of all other media forms. In accordance with media dependency theory, the higher the threat level, the more dependent citizens become on media, particularly mass media outlets, for their information (Ball-Rokeach & Defleur, 1976). This is also in line with prior research on public crises, such as the September 11 terrorist attacks (Lowrey, 2004), the 2003 SARS epidemic in China (Tai & Sun, 2007), as well as the COVID-19 pandemic in particular (Nielsen et al., 2020).

In sum, digital technologies and platforms also have positive effects. Younger citizens are predominantly using online and social media to get informed about the world around them. The results of Chapter 4 demonstrated that digital platforms, such as instant messaging apps, serve as a resource for engaging younger citizens with political and societal issues. Social ties are the driving force behind the effects. News consumption is not only shaped by social ties (e.g., friends, family, and acquaintances) and the information that those ties share, but social ties also affect the way citizens respond to discussing political news. Furthermore, although reciprocal effects between news use and political interest were evident predominantly with traditional news outlets, Chapter 5 showed that digital platforms (e.g., mobile news apps) can also positively affect political life. Although the effects are somewhat small, they contribute significantly to citizens' interest in politics and engagement with political news. The question that now arises is what these results mean. In the next part of this chapter, the theoretical, methodological, and practical implications of this dissertation will be discussed.

Theoretical implications and future research

The work presented in this dissertation has important theoretical implications for how we understand, examine, and think about news consumption in the digital society. As noted in the introduction, the very nature of news consumption is changing in the digital age. With an enormous number of available news sources, as well as an increasing role of social ties and algorithms, it is challenging to develop a comprehensive understanding of media use and media effects (see de Vreese & Neijens, 2016). Established mass communication theories, such as the knowledge gap theory (Tichenor, Donohue, & Olien, 1970), gatekeeping theory (Shoemaker & Vos, 2009), uses and gratifications (e.g., Kaye & Johnson, 2002), news media

habits (LaRose, 2010), virtuous circles (Norris, 2000), and selective exposure (e.g., Stroud, 2008), might not hold up anymore in their original formulations. After all, these theories were developed in a news environment in which people were exposed to a specific news source that could be clearly labeled and was identical for all users. In a digital society, there is no longer a single homogeneous news supply for all users, as news consumption transformed into a moving target.

A new framework for understanding news consumption in the digital society

First, this dissertation provided new theoretical knowledge about news consumption in the digital society. The rise of digital technologies and platforms has implications for how we study the role of news in a digital society. It is crucial to understand such changes because being informed about important public issues is essential for a well-functioning democracy. An already rich literature shows that news consumption affects various forms of political engagement, such as political knowledge (de Vreese & Boomgaarden, 2006), political interest (Strömbäck & Shehata, 2010), and political participation (Moeller & de Vreese, 2013). Likewise, a growing body of literature has documented the importance of individual preferences predicting exposure to news and political content (Lecheler & de Vreese, 2017; Prior, 2007; Strömbäck & Shehata, 2010).

Taken together, it is clear that understanding *which* news is consumed by *whom*, and *how* (in which context) is crucial. Yet, theoretical and empirical assumptions about news consumption and its implications are usually limited to one or two of those components. This dissertation showed that features affecting patterns of news consumption can no longer be studied in isolation, but need to be considered in relation to other features. This dissertation highlighted the importance of addressing: (1) content features (i.e., *what?*, such as news topics), (2) consumer features (i.e., *who?*, such as sociodemographics, political interest, political ideology), and especially (3) context features (i.e., *how?*, the role of social ties and algorithms as opposed to a “one size fits all” context) in news consumption habits in a complex media environment. This dissertation integrated these three groups of features into one framework: the CCC-model. This model allows us to better understand how the *combined* influence of those three groups of features shapes news consumption in the digital society. The role of context features is particularly relevant. When investigating digital platforms, scholars should not only examine the direct relationship between, for example, political interest and news consumption, but also the ways in which citizens’ behavior and their social ties influence algorithmic recommendation systems (see Thorson et al., 2021).

In turn, the CCC-model reframes research questions in debates such as polarization, news avoidance, as well as selective and incidental exposure.

Digital technologies and platforms can positively influence political life

By presenting information and news that serves the user best, news use is becoming increasingly individualized and personalized. Many scholars underline the immediate negative implications of personalized communication. Among other things, they argue that this could limit the diversity of news content citizens are exposed to, potentially resulting in filter bubbles, echo chambers, polarization, and fragmentation (Pariser, 2011; Sunstein, 2007). This dissertation alleviated this pessimistic mood. To go beyond a fixation on ‘filter bubbles’ and ‘echo chambers’, this dissertation investigated the role of digital platforms in the wider news media landscape. The findings of this dissertation revealed that the majority of citizens in the Netherlands use a wide range of sources to consume news, varying from traditional news sources, such as television news and newspapers, to online news sources, including news websites, social media, and instant messaging apps. Citizens not only have access to a great variety of outlets that provide information about political and societal issues, but many citizens also make use of these outlets.

An important question that arises is how digital technologies and platforms eventually affect citizens’ interest in politics and engagement with political news. Although many scholars have underlined that citizens’ political interest affects their news consumption behavior (e.g., Kruikemeier & Shehata, 2017; Strömbäck & Shehata, 2019), theoretical knowledge about how digital technologies and platforms affect political interest is scarce. News media are an important source of information about political and societal issues. There exists a rich amount of literature showing that news consumption enhances interest in (a diverse set of) political and societal issues (see e.g., Kruikemeier & Shehata, 2017; Lecheler & de Vreese, 2017; Strömbäck & Shehata, 2010, 2019). In that sense, political interest can be considered as a dependent variable. On the other hand, political interest can also be considered as a predictor of news consumption. With the rise of digital technologies and the important role of social ties and algorithms, citizens who are more interested in politics are more likely to be directed to political news. This dissertation investigated the dynamics of this reciprocal relationship across a wide variety of news outlets. Although reciprocal effects between news use and political interest were evident predominantly with traditional news outlets, this dissertation demonstrated that digital platforms, such as mobile news apps, can also positively affect interest in politics and engagement with political news. More research is certainly needed to explore these relationships further.

Gatekeeping processes are increasingly complex in the digital society

Third, this dissertation added to the growing body of literature that examines gatekeeping processes. For decades, political elites and traditional media actors (e.g., journalists, print and broadcast media organizations) exercised control over what information reached society (Shoemaker & Vos, 2009). In the digital society, such gatekeeping tasks are increasingly carried out by a wider array of actors. As a result, gatekeeping processes in the digital society are complex, interactive, and dynamic. Based on digital traces of personal data (e.g., a citizen's past behavior, sociodemographics, social ties, or inferred similarity to other citizens), Google's algorithm compiles our search results, news websites recommend us certain news content, and Facebook's news feed algorithm compiles our daily dose of news.

Search engines and digital platforms, such as social media, not only control access to information but also have a facilitating role to link users and content (for a detailed overview, see Helberger, Kleinen-von Königslöw, & van der Noll, 2015). Digital platforms are able to interact with their users. Examples include personalized features (e.g., news recommendations) as well as enhanced possibilities for engaging with other users (e.g., to share and discuss news content). Digital platforms also exercise control over the information that is (not) presented to users, by editing and modifying news content on personal profiles (e.g., in users' news feeds). Users have little to no knowledge about the selection criteria on which the processes of content recommendation are based. They are not always provided with any possibilities to change such processes.

Theorizing the dynamics of news consumption in the digital society requires accurately mapping how citizens are influenced by each of these actors. This dissertation demonstrated that search engines (e.g., Google) and digital platforms, such as social media (e.g., Facebook, Twitter), play an important role in directing news consumers to a great diversity of news sources. Such platforms enable citizens to deal with the information overload and find more interesting content. Search engines, for example, provide citizens with lists of news outlets that would go unnoticed otherwise. This includes smaller, lesser-known sources, such as local and regional news outlets. In turn, this leads to a diversification of the news supply. Nonetheless, the responsibility of search engines and digital platforms, such as social media, cannot be neglected. This dissertation highlights the work needed to understand which actors are most influential. For which people? Under which conditions?

Social ties shape news consumption in the digital society

Fourth, this dissertation examined to what extent news consumption is shaped by social ties. In the digital society, citizens often encounter news that is sent, shared, or liked by their social ties (e.g., friends, family, acquaintances, see Thorson & Wells, 2016; Trilling et al., 2017). The literature on the effects of encountering news that is sent, shared, or liked by social ties is limited. Hence, the wider implications of news sharing across social networks remain unclear. This dissertation is among the first to study the effects of sharing and discussing news in instant messaging apps. The findings pointed out that—although adolescents tend to be less involved in politics compared to older adults (see e.g., Neundorf et al., 2013)—instant messaging apps could serve as a resource for engaging adolescents with political and societal issues. More specifically, the findings demonstrated that instant messaging apps could exert a significant influence on political learning. Political knowledge has several potential benefits for public life, for example, related to voting behavior (e.g., de Vries et al., 2011), public opinion formation (e.g., Tillman, 2012), and increased feelings of political efficacy (e.g., Wells & Dudash, 2007). These are desirable outcomes in a *participatory democracy* or *deliberative democracy* (Bohman, 2007).

Besides, instant messaging apps enable conversations about political and societal issues in relatively intimate and closed environments. This dissertation also demonstrated that sharing and discussing political news with *strong* ties positively affects engagement with political news. More specifically, interpersonal political discussion with strong ties evokes feelings of curiosity and excitement. Examining these conversations provided us granular detail about the democratic value of connecting through such apps. Future research needs to examine to what extent experiences will be a result of the interests and opinions of citizens' social ties. It can be expected that individuals who have an online network with ties who are more interested in politics are more likely to be exposed to political news, whereas those with ties who are less interested in politics are probably less exposed to political news. As selective exposure theory suggests, citizens in a more homogeneous network are likely to be mainly exposed to news that represents topics and ideological stances that their social ties prefer as well (Halberstam & Knight, 2016; Stroud, 2010). In that sense, instant messaging apps might limit the diversity of news outlets and political viewpoints that citizens encounter (Swart et al., 2018b). More attention should be devoted to the role of different viewpoints in interpersonal political discussion on instant messaging apps (such as research on filter bubbles and selective exposure does).

Television news retains its importance, despite the changing media landscape

Finally, this dissertation offered insights into the role of television in the digital society. While there is a substantial growth in the focus on online media (e.g., social media, news websites), relatively less scholarly attention is nowadays devoted to television (Robinson et al., 2018). Although a focus on online media is important, we cannot shift our attention away from television. Television viewing remains a crucial part of citizens' media diet and an important source of news for many (particularly during times of crisis).

As there is a rich history of scholarship on the subject, it can be questioned whether we have any new questions to ask about television as a source of news (Bennett & Iyengar, 2008). This dissertation showed that the existing understanding of television is insufficient and that it is essential for political communication scholars to capture the implications of emerging trends in television production and consumption (Robinson et al., 2018). Theoretical propositions from previous decades might not hold up anymore, because political news is now packaged in a variety of formats and genres beyond news and documentary, including late-night talk shows and satire. Besides, this dissertation found better ways to measure television news consumption. The measurement of exposure to political news has always been difficult (Prior, 2009). This dissertation demonstrated that new methods prove particularly fruitful for capturing exposure to political news. The findings provided a very convincing explanation of the link between political preferences and exposure to political news on television. Using a computational approach to examine television news consumption is essential for the development of the field, as it has generated insights that bring a greater understanding of television news consumption in the digital society. Taken together, scholars must not lose sight of the powerful function that television still serves.

Methodological implications

Today's media landscape, in which citizens are exposed to an enormous amount of information anytime, anywhere, and from a wide range of sources on a growing number of devices, has complicated the measurement of news consumption (de Vreese & Neijens, 2016). In this dissertation, traditional methods are combined with computational tools and methods to examine *which* news is consumed by *whom*, and *how* (in which context). Such efforts undoubtedly have implications for political communication research.

Improving political communication research through better measurement of news consumption

First, this dissertation presented new and innovative methods to measure news consumption in today's news media landscape. The rise of digital technologies and platforms presents many challenges for researchers studying news use today. To date, most research methods analyzing news consumption focus on recalled user behavior by survey, diary, or interview methods (e.g., Taneja et al., 2012; Tewksbury, 2003). Self-report measures are easy to include in a survey or experiment. Including other questions creates the possibility to correlate patterns of news consumption with sociodemographics or political preferences, such as political interest and political ideology. However, self-reports may be less accurate as some people tend to over-report news usage, because it is socially desirable or it is hard to recall content they consumed (Prior, 2009; Vraga et al., 2016). Recently, more accurate avenues for studying online news consumption have opened up.

This dissertation combined the rich nature of self-reports (e.g., survey data, experimental data) with the precision of passive measurement methods (e.g., audience-meter data, online tracking data), to obtain a comprehensive understanding of news consumption in the digital society. Using passive measurement methods allowed us to gain insights into the actual individually encountered information and the access to information via different news outlets. Research presented in this dissertation proposed various ways to tackle the complexity of studying news use today. To capture changes over time, longitudinal studies combining automatic tracking data and survey data on news consumption are needed in the future. Furthermore, future work particularly needs to find new and innovative ways to examine how algorithms shape what content becomes visible to individual users. For instance, a sock-puppet approach (i.e., multiple accounts controlled by the same user) can be used to emulate certain aspects of user behavior in relation to algorithms (for a detailed overview, see Bodo et al., 2017).

New methodological approaches offer substantial added value to political communication research

Second, this dissertation showed how knowledge and insights from computer science can be used to analyze the data. The amount of data that can be collected has increased dramatically. Computational methods are used to move towards valid and reliable research using large data sets. In this dissertation, several advanced and innovative methods and applications in the field of text and network analyses have been combined.

This dissertation has indicated how various automated content analysis methods can be applied to classify news content. For many years, news exposure research has been enriched with content analyses of textual sources of political content (e.g., newspaper articles, government publications). Yet, measuring exposure to political news on a large-scale continued to be elusive. In this dissertation, automated content analysis methods have been applied to extract meaningful features from large-scale data (Boumans & Trilling, 2016). For instance, a knowledge base (i.e., Wikipedia DBpedia, Wikidata) has been used to automatically assign hundreds of thousands of different topics at different levels of abstraction to subtitles of television programs. Besides, supervised machine learning was used to determine what type of news is covered in online news items and social media posts.

In addition, network analysis has been applied to model the relations and processes in large-scale data. For instance, Markov chains have been constructed, as these provide a better understanding of which outlets and news topics are combined during a Web session (for a detailed overview, see Vermeer & Trilling, 2020). Social network analysis was used to create groups consisting of densely connected individuals. Taken together, text and network analyses have provided novel tools and perspectives to analyze news consumption in the digital society.

Practical implications

This dissertation also has important practical implications for news media organizations (e.g., editors, journalists, Web developers), broadcasters, policymakers, and society at large.

Digital technologies and platforms change journalistic practices

First and foremost, this dissertation provided some practical guidelines for news media organizations. In the digital society, citizens actively combine a wide variety of news sources into complex patterns of news consumption. The rise of digital technologies has not only increased the number of news sources, but has also improved the ability to describe and analyze patterns of news consumption. Patterns of news consumption are an important source of support and inspiration for news media organizations (including editors, journalists, and Web developers; Giomelakis et al., 2019).

Existing studies often explore news consumption on an aggregate level and less at the level of a particular news outlet. This dissertation has revealed how different news outlets (i.e., news websites, social media, search engines) and news topics (i.e., politics, entertainment)

contribute to patterns of news consumption. For instance, regional and local news outlets are struggling to survive and compete with national news outlets (Hess & Waller, 2017). The reach of regional and local news has diminished. Among other things, this dissertation showed that regional and local news outlets could particularly benefit from Facebook referrals. The results of this dissertation also help news organizations seeking to guide users to the relevant content on their website (e.g., personalized news). As journalistic news production is more and more metrics-driven, users' pathways can, for example, help to determine whether a certain news article should be offered merely to premium members or not (Vermeer & Trilling, 2020). As journalists, editors, and Web developers are the architects of news pathways (Pearson & Kosicki, 2017), the findings of this dissertation can serve as a starting point to help them shape the paths users take.

Television and digital media are in direct competition

Despite the ubiquitous use of digital technologies and platforms, this dissertation also demonstrated that television remains a crucial part of citizens' news consumption and an important source of political news for many (particularly during times of crisis). It will probably remain so for many citizens for years to come (Nielsen, 2016). Yet, especially younger people are increasingly moving away from traditional broadcast television and moving towards digital technologies and platforms. Younger people increasingly rely on on-demand viewing, distributed viewing, and mobile viewing. In turn, this stresses the importance for television news providers to find their place in the digital society (Nielsen, 2016). Television news providers need to adapt to the continuing rise of online video and digital platforms. In the Netherlands, television news providers are already finding new ways to move beyond television news as we know it, for example, by offering free video-on-demand services.

Policymakers need to consider the potential dark side of digital technologies and platforms

Third, this dissertation demonstrated that citizens increasingly consume news that algorithms select for them. Algorithms increasingly tailor search results and sort news based on digital traces of personal data (e.g., a citizen's past behavior, sociodemographics, social ties, or inferred similarity to other citizens). This can offer opportunities as well as pose threats to the democratic role of the media. Among other things, it highlights the importance of implementing algorithmic systems with a profound understanding of the democratic values digital platforms can serve (for a detailed overview, see Helberger, 2019). For example, designing systems that promote exposure to diverse content. The media as well as

policymakers have to consider the potential dangers (e.g., privacy, transparency) of digital technologies and platforms. As such, digital technologies and platforms need to be designed to advance values and goals that are considered desirable in a democratic society (Helberger, 2019).

Citizens should be informed about the way algorithms influence their news consumption

Last, the findings revealed that Dutch citizens not only have access to a great variety of outlets that provide information about political and societal issues, but many citizens also make use of these outlets. Even more so, some of the findings uncover the democratically beneficial side of digital technologies. For example, young adults use messaging apps to share news and to discuss and learn about politics and society. Whether democracy will be strengthened by digital technologies and platforms not only depends on whether or not citizens consume news from a very diverse range of news outlets. For the benefits of digital technologies to outweigh the costs, we must also attenuate its negative effects, by informing citizens how algorithms determine what they see, and what they can do to undercut this control. Only through increasing the digital literacy of citizens, can we unlock the full democratic potential of digital technologies.

Final conclusion

Altogether, this dissertation has built on established theories and the empirical possibilities enabled by large data sets to shed new light on news consumption in the digital society. Digital technologies have dramatically changed the very nature of news consumption. Digital technologies have not only increased the number of news sources. With the rise of digital technologies and platforms, news consumption is also becoming increasingly individualized and personalized. Political preferences play an increasingly important role in explaining news consumption. This dissertation integrated content features, consumer features, and context features into one framework: the CCC-model. This model allows us to better understand what shapes news use in today's media landscape. Some of the findings of this dissertation justify the pessimistic view of earlier work. That is, citizens highly interested in politics are more likely to consume political news compared to citizens that are less interested in politics, and that due to the context in which news consumption happens, those effects might be accelerated. This dissertation also showed that digital technologies and platforms contribute to the quality of political life. The findings revealed that citizens not only have

access to a great variety of news outlets that provide information about political and societal issues, but many citizens also make use of these outlets. Younger citizens are predominantly using online and social media to get informed about the world around them. Digital platforms, such as instant messaging apps, may serve as a resource for engaging younger citizens with political and societal issues. All in all, it is the way digital technologies and platforms are used that can undermine or improve political life.