

# Multi-Platform News Use and Political Participation Across Age Groups: Toward a Valid Metric of Platform Diversity and Its Effects

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## Abstract

News consumption in today's media environment is increasingly characterized by reliance on multiple platforms: People now get their news from the web, television, radio, and various social media. Employing a nationally representative survey from the United States, this study develops an index of multi-platform news use. The index is validated by testing age group differences in the way people participate in politics. Results show that Millennials are more likely to rely on multiple platforms for news. Multi-platform news is also positively related to alternative modes of political engagement. Results are discussed in light of generational shifts in political behavior.

## Keywords

age group differences, hybrid media, multi-platform news, news use, political participation, political engagement, social media

In the contemporary media environment, news users increasingly rely on multiple platforms as sources of news and public affairs information, including not only “traditional” platforms such as television and newspapers, but also web-only and alternative

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online news platforms (Bakker & De Vreese, 2011; Edgerly, Thorson, Thorson, Vraga, & Bode, 2018; Shehata, Ekström, & Olsson, 2015; Yuan, 2011). Multi-platform news use is largely facilitated by the affordances of mobile technology and social media applications, such as Facebook and Twitter (Costera Meijer & Groot Kormelink, 2015; Thorson & Wells, 2016). Although most Americans still regularly get their news from television (50%), the number of people who get their news online (43%) is nearly double the number for print (18%) or radio news (25%; Gottfried & Shearer, 2017).

In response to these developments, scholars have called for increased attention to the nature and outcomes of multi-platform news use (Bachmann, Kaufhold, Lewis, & Gil de Zúñiga, 2010; Chan-Olmsted, Rim, & Zerba, 2013; Ha et al., 2018; Moehler & Allen, 2016; Taneja, Webster, Malthouse, & Ksiazek, 2012). Two pervasive issues remain in this area. First, it is unclear to what extent people actually get their news across multiple platforms. Second, we understand very little about the unique effects of multi-platform news on people's attitudes and behaviors (Ksiazek, Malthouse, & Webster, 2010). The current study answers this call by developing an index of multi-platform media reliance (multi-platform news index [MPI]) for survey data, based on a stringent form of reliability testing, confirmatory factor analysis (CFA). The metric is created from a widely used approach to distance measurement (Chiclana, García, del Moral, & Herrera-Viedma, 2013; Deza & Deza, 2009). This study then validates this measure by testing its influence on age group differences in news consumption and political participation patterns.

Prior research shows evidence of generational differences in news use that arise from variation in the sociocultural and technological contexts in which individuals are immersed during youth and young adulthood (N. J. Lee, Shah, & McLeod, 2013; Patterson, 2007, 2013). Thus, younger media users tend to develop news consumption habits that have a lasting influence on their news-selection choices later in life (LaRose, 2010; N. J. Lee et al., 2013). Theoretically, these generational differences in media socialization should be no different for multi-platform news use (Edgerly, Vraga, Bode, Thorson, & Thorson, 2018). Meanwhile, other scholars have noted that younger people tend to engage with a proliferating array of nontraditional political groups, social movements, and identity-based communities, and these changes are closely related to parallel advancements in media technologies and their uses (e.g., Bennett, 2008; Bimber, Stohl, & Flanagin, 2009; Dahlgren, 2009; Kim & Ball-Rokeach, 2009; Xenos & Loader, 2014). The current study engages this scholarly conversation by examining how the shift toward multi-platform news use is related to various forms of political participation.

## Defining Multi-Platform News Use

Multi-platform news use is a common feature of today's news media environment, and it is facilitated by the proliferation of different media channels and devices through which people consume the news (e.g., Gottfried & Shearer, 2017; Hermida, Fletcher, Korell, & Logan, 2012). In this context, multi-platform news use is *the habit of paying regular attention to, or relying on, more than one information and communication*

*technology modality for the consumption of news and public affairs information.* The potential complexity of post-broadcast news consumption poses conceptual and methodological problems for scholars concerned with measuring news use (de Vreese & Neijens, 2016; Ksiazek et al., 2010; Mitchelstein & Boczkowski, 2010). At least two concerns permeate research in this area. First, today's news users may divide attention across different media platforms. Isolating and comparing individual platforms (as is often done in quantitative studies) can produce artificially low estimates of news exposure, particularly in younger groups (Ksiazek et al., 2010).<sup>1</sup> Research shows a substantial degree of overlap between traditional broadcast audiences and audiences for online news sources (Dutta-Bergman, 2004), an observation that has led some scholars to argue that the study of either "news repertoires" (Taneja et al., 2012; Yuan, 2011) or technological platform use (Bachmann et al., 2010) is a more fruitful enterprise than examining overall news use.

A second challenge in creating valid news consumption measures, particularly in survey or interview contexts, is the difficulty for respondents to accurately recall exposure to several technological platforms. In other words, survey respondents will likely report watching *CNN* with attention to television, online portals, or a social media platform. Respondents commonly make mistakes in recall (Prior, 2009), and given the potential for news exposure across platforms, a valid account for the degree of overlap among media platforms is a lingering concern for journalism and communication scholars (Niederdeppe, 2016). In response to these difficulties, scholars tend to look only at one multimedia platform (such as Facebook; Stoycheff, Liu, Wibowo, & Nanni, 2017) or two devices for political events (so-called "dual screening," for example, Vaccari, Chadwick, & O'Loughlin, 2015). An overall index of multi-platform news use is still missing in the literature.

This study introduces a method for creating and testing a MPI. The MPI is *an indicator of the balance and diversity in one's dependency on multiple information and communication technology platforms for consumption of news and public affairs information.* The MPI is independent of an overall attention to, or motivation for, news seeking. While prior research has employed similar indices to measure "total news use" (Edgerly, Thorson, et al., 2018; Ksiazek et al., 2010), the index used by the current study differs in one important aspect. Because we are interested in the degree of overlap between different technological modes rather than total news use, the index presented here measures the overlap or balance in the various technological outlets people rely on for news.

The MPI captures people's patterned uses of the various information and communication technologies available to them. Therefore, the MPI is not a replacement measure for news use, but rather a complementary measure that accounts for the additional affordances multiple platforms enable. This distinction has been referred to as a degree of media dependency (Ball-Rokeach, 1998), where overall attention to news (intensity dependency) may be distinguished from higher order forms of news engagement with several platforms (referent dependency, see Ha et al., 2018). Low MPI reflects reliance on one or two communication modalities (low diversity), and high MPI reflects reliance on several media and technological modalities (high diversity).

Empirically, the MPI shares more in common with simple equations for measuring distance and diversity often used outside the field of communication (e.g., Chiclana et al., 2013). When paired with CFA, MPI offers scholars an opportunity to identify and reduce measurement error as well. The focus on platform diversity is appropriate for the inherent challenges of accounting for news consumption patterns in postbroadcast society. There are three reasons why platform diversity matters: affordances of technology, communication as information, and effects of multimedia.

## **Affordances, Communication, and Effects**

### *Affordances*

If technology shapes the content, costs, and speed of information a news consumer receives (Bimber, 2003; Delli Carpini, 2000), then multi-platform news use qualitatively alters the relationship between citizens and their media environment. Combining social media, Internet, and broadcast news sources exposes people to a higher number of personally relevant stories, news recommendations from friends, and information from diverse networks (Bakshy, Messing, & Adamic, 2015; C. S. Lee & Ma, 2012). Emerging devices (hardware) and applications (software) interact to constantly reshape the type of communicative behaviors that are allowed. These so-called “affordances” have implications for both news content and the social interactions that occur alongside the news.

Scholarly discussions on the affordances of technology are often framed in light of the changing nature of “media logic” in networked society. As Dahlgren (2009) put it, media logic is a set of “imperatives that shape the particular attributes and ways of doing things within a given media . . . the procedures of selection, form, tempo, informational density, aesthetics, contents, modes of address, and production schedules” (p. 52). The logic of networked communication significantly alters the scope of information and communication practices available (Klinger & Svensson, 2015). In addition, depending on the platform, technology companies may incorporate a range of design features, aggregation algorithms, or other text and image options that also broaden the scope of information available (Ananny & Crawford, 2015). The more one’s news use is dictated by the logic of networks, the more likely they are to be exposed to a wider range of technical affordances.

### *Communication as Information*

Networked media logic presupposes that news content will appear alongside other communication activities. For example, an increasing number of actors are able to participate in the creation and sharing of news. This elevates the importance of discussions and social interactions around the news (Hermida et al., 2012; C. S. Lee & Ma, 2012; Vaccari et al., 2015). People can also tailor their news feeds to include traditional and alternative sources (Thorston & Wells, 2016). Thus, people are exposed to a hybrid communication flow, where elements of broadcast news culture overlap with

digital and interactive cultures online (Chadwick, 2017). The implication for news use across platforms is that people's information repertoires are expanded, along with the possibilities for engagement with the news. Thus, it is reasonable to assert that news exposure coincides with interpersonal communication in multi-platform news environments.

### *Effects of Engagement With the News*

The sheer depth of informational opportunities that multi-platform news enables has implications for how people respond to the news. More information leads to an increased likelihood of inadvertent exposure (Beam & Kosicki, 2014), increased interest in personally relevant issues (Strömbäck, Djerf-Pierre, & Shehata, 2013), exposure to dissenting views (J. K. Lee, Choi, Kim, & Kim, 2014), and moderately increased knowledge of current events (Dimitrova, Shehata, Strömbäck, & Nord, 2014). Several studies also show that multimedia environments have effects on learning, memory, and cognition. These studies offer mixed findings, and dividing one's attention—as is often the case with persistent notifications and habitual phone checking—can negatively influence recall (e.g., Mayer & Moreno, 2003). Affective and behavioral responses to media use may be directly or indirectly related to changes in the patterns of news platform reliance.

Because any given modality of connection to the Internet may come with its own set of affordances, and because these affordances shape the range and scope of information available, multi-platform news use may have unique effects, and a valid measurement for exploring the phenomena is a salient research need. The following sections (a) outline how multi-platform news use applies to age group differences in patterns of news consumption; (b) connect multi-platform news use to age differences in modes of political participation; and (c) test the relationship between age and the MPI on political participation.

### **Media Socialization and Age Group Differences**

The percentage of older adults that regularly consume news from broadcast sources is 3 times greater than that for the youngest age groups (Mitchell, Gottfried, Barthel, & Shearer, 2016). The news-attention gap has been explained as a matter of individual interest in the news (Ksiazek et al., 2010; Strömbäck et al., 2013), levels of education (Gaziano, 1997), or a product of choice and fragmentation in the media environment (Prior, 2005). One theme that binds these studies together is the observation that news consumption habits are set at a young age, and are often the product of shared family and social experiences. For example, Patterson (2013) discusses how most children who grew up in the 1960s and 1970s were exposed to television news as a part of a nightly family TV watching ritual. Other sources of socialization into the news are schools, peer groups, and the current political climate (Claes & Quintelier, 2009; N. J. Lee et al., 2013; Vaala & Bleakley, 2015). Over time, these behaviors become

automatic, and motivations for a particular type of technological dependence become habitual (LaRose, 2010).

If news habits are the product of particular historical and social circumstances, theories of social change based on generation effects are a useful tool for understanding interage differences in news-seeking behavior. Generations are social constructs that bind groups of people based on some shared experience (Mannheim, 1952/2015). Birth cohorts are the most common distinction in this area, and they are directly relevant to the study of news consumption patterns. This is because a birth cohort (a group of people categorized by age) represents “collective aggregates of socially structured life histories” (Corsten, 1999, p. 250), or rather, the shared experience of life in society at a particular time. To the extent that people of a certain age group experience the same news events (Katz, 1980), through a similar type of technology (Rogers, 2010), they are bound by a set of news habits modeled after their peers and parents (Chaffee, McLeod, & Atkin, 1971).

Young adults, much like their parents before them, are socialized to use multiple platforms for news in the home, in school, and through peer networks (Edgerly, Vraga, et al., 2018; Vaala & Bleakley, 2015). Thus, older cohorts are more likely to watch television news, and younger groups will rely on social media, the Internet, and mobile devices as they are socialized into using them. A combination of aging populations and the rapid evolution of information communication technologies (ICTs) lead to stark differences in news consumption patterns between younger and older citizens. Based on the above, we pose the following:

**H1:** Millennials will consume news from several platforms relative to older age groups.

**H2:** Millennials will score higher on a measure of multi-platform news (MPI) than other age groups.

## **Multi-Platform News Use and Political Participation**

Scholars have debated changes in civic and political engagement for more than 20 years (e.g., McLeod, Scheufele, & Moy, 1999; Norris, 2002). Some have pointed toward declines in traditional group membership and institutional forms of political engagement, particularly among younger people, as evidence of a weakening American democracy (e.g., Bauerlein, 2008). In response, other scholars argue that today’s citizens, especially youth, lack meaningful opportunities to engage with traditional political institutions (Delli Carpini, 2000), yet others counter that the Internet has contributed to the expansion of participatory repertoires (Norris, 2002; Xenos & Loader, 2014). These expanded repertoires of action include not only voting and traditional political participation, but also networked organization, protests, political consumerism, and direct democratic action (Carr, Gotlieb, Lee, & Shah, 2012; Stolle, Hooghe, & Micheletti, 2005). Bennett (2008) suggests that the Internet has contributed to a generational shift toward “lifestyle politics,” in which youth personalize their political identities and agendas, picking and choosing sites and targets of engagement as they

fit the individual's preferences. Thus, even while voting and other forms of traditional civic and political engagement are on the decline, particularly among youth, digital media have made possible the rise of new forms of political engagement (Zukin, Keeter, Andolina, Jenkins, & Carpini, 2006).

Research shows that these developments in political engagement are closely related to the emergence of digital media technologies. For example, Bimber and colleagues (2009) argue that digital media have afforded the ability for different kinds of political organizations to form and organize. Meanwhile, digital media have also afforded the ability to interact with traditional institutions in new ways. Thus, digital media have arguably contributed to the expanding range of opportunities available to citizens when it comes to political engagement. At the same time, digital media may increase the likelihood that individuals engage in these new forms of participation. For example, Bennett (2008) argues that the "cascading advance of media platforms," including social media, are increasingly integral to the personalization of politics and political identity construction (p. 1). Social media, in particular, have encouraged this shift in political engagement because loose networks allow people to take more responsibility for defining and maintaining their social and political identities. Thus, digital media have not only expanded the possible repertoires of political action, but the structure and modality of communication in digital media environments encourage it.

Another body of literature shows that news use is a strong and consistent predictor of political engagement. The effects of news consumption are largely mediated through discussion and cognitive reflection (e.g., Sotirovic & McLeod, 2001). Through these discursive processes, news media consumption can affect individual's values, political identities, and the ways in which they engage in politics (Keum, Devanathan, Deshpande, Nelson, & Shah, 2004; Shah et al., 2007). Consuming news on multiple devices should enhance these effects, because people are exposed to more frequent, albeit shorter, calls for political action, social interaction, or other mobilizing information.

If news use is closely associated with political engagement, and changes in the news media environment are closely related to developments in political engagement, it stands to reason that major shifts in patterns of news engagement—namely, the shift toward multi-platform news use—should also be related to changes in political participation. Several studies have explored the relationship between news use and *offline participation* (participation in groups and organizations that work to influence politics at the institutional level; Chadha, Avila, & Gil de Zúñiga, 2012; McLeod et al., 1999; Verba, Schlozman, & Brady, 1995), *online participation* (digital and alternative modes of participation enabled by the Internet and social media; Bennett, Wells, & Freelon, 2011; Bode, Vraga, Borah, & Shah, 2014; Edgerly, Thorson, et al., 2018; Valenzuela, Kim, & Gil de Zúñiga, 2011; Vissers & Stolle, 2014), *lifestyle politics* (consumer action to express one's political views; Bennett, 1998; Gil de Zúñiga, Copeland, & Bimber, 2014; Keum et al., 2004; Shah et al., 2007), and *voting* (Verba et al., 1995). The repertoires for both news consumption and political participation have expanded. Based on the above literature, one may argue that if digital media expand participation opportunities, and the MPI is a measure of platform diversity, then the MPI should be

positively related to emergent political practices. However, as the MPI has not been formally tested before, we pose the following as research questions:

**RQ1:** How is multi-platform news use related to both online and offline forms of political participation?

**RQ2:** How is multi-platform news use related to voting?

**RQ3:** How is multi-platform news use related to lifestyle politics and protest?

Finally, the study argues that younger adults will be more likely to score high on the MPI (**H2**). If the MPI is also positively related to an expanded participation repertoire, how might age interact with (moderate) the relationship between multi-platform reliance and political participation?

**RQ4:** What is the relationship between age, multi-platform news, and political participation?

## **Method**

### *Sample*

Analysis for this study is based on cross-sectional survey data collected online in the United States in early 2014. The Nielsen Company was contracted to distribute the questionnaire according to a mixed panel and stratified-quota sampling procedure. Response rates are not typically reported in online panels. Instead, cooperation rates and demographic information are used to determine generalizability (American Association of Public Opinion Research [AAPOR], 2016; also see Callegaro et al., 2014). Nielsen contacted approximately 5,000 people from an online pool of over 200,000 based on a target for age, gender, education, and income. In all, 2,060 participants started the survey, and 247 cases were deleted for incomplete or invalid data (AAPOR, Cooperation Rate [CR1] = 38.1%,  $N = 1,813$ ). The response statistics fall within parameters published in similar studies (Bode et al., 2014; Stoycheff, 2016). Nielsen employs both probability and panel-based procedures to offset the limitations of online sampling (Bosnjak, Das, & Lynn, 2016).

The sample is evenly split in terms of gender (50% female), has fewer Hispanics than general population estimates (White = 74%), and has slightly more middle-aged respondents ( $M = 52.7$ ). Income,  $Mode = 50K$  to  $99K$  (36%), and education,  $Mode =$  some college (34.5%), are relative to national numbers. Overall, the demographic profile is similar to other political surveys, and U.S. Census Bureau reports (Saldana, McGregor, & Gil De Zuniga, 2015).

### *Statistical Approach*

To address the overarching claims in the study, the authors first created a MPI in three steps. First, a CFA model was specified for all news platforms. CFA is a more stringent

form of validity testing that (a) tests validity *within and between* news platforms, and; (b) offers evidence that individual survey responses account for *only one platform* of news use at a time (see Brown, 2015; Kenny, 2016). Second, average-item constructs for each news platform were created based on the final questions chosen for each factor in the CFA model. Third, the MPI was calculated as the absolute value between scores on the news constructs (see below).

Next, to validate the MPI and answer the hypotheses and research questions, age group differences in news consumption were tested using one-way ANOVA and Tukey post hoc tests (**H1** and **H2**). The authors then examined the effects of the MPI on political consumerism, offline group associations, online participation, protest behavior, and voting with a series of ordinary least squares (OLS) regressions (**RQ1-RQ3**). Finally, the interactions (**RQ4**) were probed using the upper bound of age groups as the cutoff points (ages 32, 51, 69, 88), and statistical significance was calculated according to the Johnson–Neyman technique (Preacher, Curran, & Bauer, 2006).

### News Platform Use

Frequency of news use for each medium is measured as the extent to which respondents regularly use certain media technologies for public affairs and informational purposes (LaRose, 2010; Yuan, 2011). Based on CFA, five separate news constructs were created—12 items, five factors, no modification;  $\chi^2/df = 2.8$ , comparative fit index (CFI) = .98, Tucker-Lewis index (TLI) = .97, root mean square error of approximation (RMSEA) = .04 ( $p = .99$ ), standardized root mean square residual (SRMR) = .03.<sup>2</sup> The benefit of this approach is that researchers can make stronger arguments for the internal validity of their news consumption measures. All news exposure items were measured with the same 10-point scale (1 = *never*, 10 = *all the time*). The final variables were created using the following latent constructs:

**Television news.** Frequency of exposure to news programs on television was captured with the following questions: (a) How often do you get news from network TV news (e.g., ABC, CBS, NBC); (b) How often do you get news from local television news (local affiliate stations); and (c) How often do you use television for news (three-item averaged scale, Cronbach's  $\alpha = .87$ ;  $M = 6.72$ ,  $SD = 2.75$ ).

**Radio news.** Attention to radio news was measured with one item: (a) How often do you get news from radio news (e.g., NPR, talk shows) ( $M = 3.90$ ,  $SD = 3.03$ ).<sup>3</sup>

**Newspapers.** Newspaper reading was measured with the following two items: (a) How often do you get news from local newspapers (e.g., *Oregonian*, *Houston Chronicle*, and *Miami Herald*); and (b) How often do you use print for news (averaged scale, Spearman–Brown coefficient = .85;  $M = 5.2$ ,  $SD = 3.11$ ).

**Online/Web news.** News from online websites and aggregators was tapped with three items: (a) How often do you get news from online news sites (e.g., Gawker, Politico,

BuzzFeed); (b) How often do you use news aggregators (e.g., Google News, etc.) to get news; (c) How often do you use sites and apps that collect news, such as Flipboard or Pulse (averaged scale, Cronbach's  $\alpha = .66$ ;  $M = 2.74$ ,  $SD = 1.94$ ).

*Social media news.* News and public affairs on social media was measured with the following three items: (a) How often do you use Facebook for getting news; (b) How often do you use social media to stay informed about current events and public affairs; and (c) How often do you use social media to stay informed about local community (averaged scale, Cronbach's  $\alpha = .84$ ;  $M = 3.22$ ,  $SD = 2.42$ ). These items are based on survey questions employed in previous studies (Bachmann et al., 2010; Gil de Zúñiga & Valenzuela, 2011; Mitchell et al., 2016).

*MPI.* The MPI is calculated by summing the distance between scores on each platform (television, newspaper, radio, web/online, and social media) expressed by the following equation:

$$D = \left( \sum_{i=1}^n |a_i - b_i| \right).$$

In the equation above,  $D$  indicates the total distance between scores,  $i$  indicates the number of potential platforms,  $a$  indicates the average score on the first platform, and  $b$  indicates the average score on the second news platform (Chiclana et al., 2013; Deza & Deza, 2009). The resulting score was then reverse coded, so that a higher score on the MPI indicates greater overlap in the ICTs used for news and information purposes ( $54 = \text{complete overlap}$ , and  $0 = \text{no overlap}$ ;  $M = 22.51$ ,  $SD = 13.43$ ; range = 54) (see Table 1 and Figure 1).<sup>4</sup>

### Independent Variables

*Age groups.* Because this study is concerned with socialization into news use and politics through technological efficacy cultivated early in life, we sorted the sample into four age groups. Categories were assigned according to normative definitions of citizenship commonly used in literature on democratic participation. These categories are used throughout the literature, and are based on shared cultural experiences and technology use (Bennett, 2008; Fry, 2016; Zukin et al., 2006). Age groups are coded as Dutiful Citizens (born before 1946;  $n = 217$ ; 12%); Baby Boomers (born 1946-1964;  $n = 712$ ; 40%); Generation-X (Gen-Xers; born 1965-1983;  $n = 590$ ; 33%); and Millennials (born after 1984;  $n = 277$ ; 15%).

*Covariates.* Scholars have identified a variety of individual characteristics that might explain when, or if, people decide to participate in political life. Several common variables related to cognitive traits and social network features are included in the analysis to avoid spurious outcomes. These measures are based on previous research where noted and include *political self-efficacy*—two items: (a) I consider myself well qualified to participate in politics, and (b) I have a good understanding of the important

political issues facing our country—(Spearman–Brown coefficient = .87;  $M = 5.22$ ;  $SD = 3.17$ ; Morrell, 2003); *strength of ideology* (three-item folded scale, 0 = *independent*, 5 = *strong liberal/conservative on economic, social, and political issues*; Cronbach's  $\alpha = .89$ ,  $M = 2.18$ ;  $SD = 1.55$ ); *political knowledge* (eight-item index based on current events and prominent actors in politics; Cronbach's  $\alpha = .75$ ,  $M = 4.4$ ;  $SD = 2.18$ ; Delli Carpini & Keeter, 1996); online and offline *political discussion network size*—two open-ended items, following the prompt: About how many total people have you talked to (a) face-to-face or over the phone about politics or public affairs; and (b) via the Internet, including email, chat rooms, social networking sites, and micro-blogging sites—(natural log, Spearman–Brown coefficient = .61;  $M = 0.34$ ,  $SD = 0.87$ ; Eveland, Hutchens, & Morey, 2013); and frequency of *political discussion* with both strong and weak ties (eight-item average scale, Cronbach's  $\alpha = .89$ ;  $M = 3.3$ ,  $SD = 1.77$ ; Gil de Zúñiga & Valenzuela, 2011).

### Outcome Variables

*Political participation.* The dependent variables of interest in this study represent different dimensions of citizenship, based on resources, habits, and technology. To validate the various modes of political participation (lifestyle, online, offline, protest, and voting), a five-factor latent variable model was tested (CFA). Due to the highly skewed nature of political action measures, reliability testing was conducted using robust standard errors (Maximum Likelihood Robust Standard Errors [MLR], Huber–White, see Rosseel, 2012). The final model produced acceptable fit,  $\chi^2/df = 3.5$ , CFI = .98, TLI = .97, RMSEA = .05 ( $p = .88$ ), SRMR = .03. All participation questions were measured with the same 10-point scale (1 = *never*, 10 = *all the time*). Categories of participation are based on previous literature. The CFA is based on the following items.

*Lifestyle politics.* Several scholars have examined the role of political consumerism in affecting social change (Bennett, 1998; Keum et al., 2004; Shah et al., 2007). Two items asked the following: (a) How often have you boycotted a certain product or service because of the social or political values of the company; and (b) How often have you bought a certain product or service because of the social or political values of the company (averaged scale, Spearman–Brown coefficient = .78;  $M = 3.11$   $SD = 2.58$ ).

*Online political participation.* Frequency engaging in online and digital forms of citizenship is based on previous research (Valenzuela et al., 2011; Vissers & Stolle, 2014) and measured with three items: (a) How often have you used a mobile phone to donate money to a campaign or political cause via text message or app; (b) How often have you started a political or cause-related group on a social media site; (c) How often have you signed up online to volunteer to help with a political cause (averaged scale, Cronbach's  $\alpha = .92$ ;  $M = 1.46$ ;  $SD = 1.3$ ).

*Activism/protest.* Political activism was measured with two items: (a) How often have you participated in any demonstrations, protests, or marches; and (b) How often have you attended a political rally (Spearman–Brown coefficient = .89;  $M = 1.27$ ,  $SD = 1.71$ ).

*Formal group/offline associations.* Offline group associations represent the traditional resource-based model of citizenship (Sotirovic & McLeod, 2001; Verba et al., 1995), and were comprised of three items: (a) How often have you donated money to a campaign or political cause; (b) How often have you participated in groups that took any local action for social or political reform; and (c) How often have you been involved in public interest groups, political action groups, political clubs, political campaigns, or political party committees (averaged scale, Cronbach's  $\alpha = .87$ ;  $M = 2.17$ ,  $SD = 2.05$ ).

*Voting.* Voting in the previous election (see Pew Research Center, 2012) was tapped with two items: (a) How often do you vote in local or statewide elections, and (b) How often do you vote in federal or presidential elections (averaged scale, Spearman–Brown coefficient = .93;  $M = 7.89$ ,  $SD = 3.08$ ).

## Results

**H1** predicts that Millennials will consume news from several platforms relative to older age groups. A comparison of average news use by age group and medium (Figure 1 and Table 1) reveal distinctions in frequency of news use. Millennials ( $n = 178$ ) report the lowest frequency of reading newspapers ( $M/SD = 3.86/2.60$ ), and the highest frequency of social media news ( $M/SD = 4.32/2.41$ ). In contrast, Dutiful Citizens ( $n = 157$ ) tend to rely on television news more than other platforms and report higher overall television news use than other age groups ( $M/SD = 7.62/2.53$ ), followed by newspapers ( $M/SD = 6.6/3.19$ ) and radio ( $M/SD = 4.15/3.40$ ). Boomers ( $n = 497$ ) rely on television news ( $M/SD = 7.35/2.66$ ) and newspapers ( $M/SD = 5.81/3.28$ ) to a lesser degree, and they get their news from the radio less often than respondents in the Dutiful age group ( $M/SD = 4.02/3.16$ ). The Gen-X group ( $n = 397$ ) supplements their broadcast-era platforms with more social media news ( $M/SD = 3.53/2.51$ ) and web news ( $M/SD = 2.94/1.92$ ). All respondents report television as the medium they use most frequently for news.

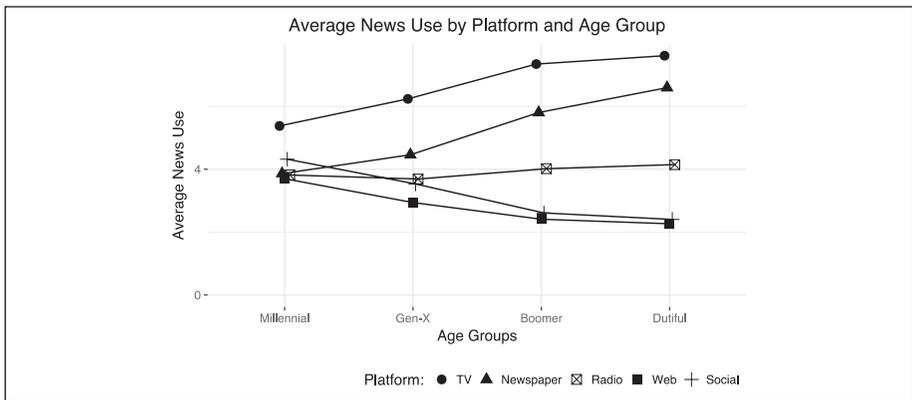
Results from ANOVA tests (Table 1) show statistically significant differences in platform use between age groups for television,  $F(3, 1214) = 34.26$ ,  $p < .001$ ; newspapers,  $F(3, 1222) = 37.81$ ,  $p < .001$ ; web news,  $F(3, 1212) = 26.54$ ,  $p < .001$ ; and social media news,  $F(3, 1212) = 33.71$ ,  $p < .001$ . Differences in attention to radio news were due to sample size and distribution,  $F(3, 1221) = 1.25$ ,  $p = .289$ .<sup>5</sup> Post hoc Tukey tests confirm that Millennials consume more social media and web-based news than other groups, and the differences are statistically significant across age groups. Based on the plot of mean values for each age group (Figure 1), Millennials on average report consuming newspaper and web at about the same rate, while they get their news from social media and radio slightly more often. Compared with other age groups,

**Table 1.** Means and Standard Deviations of Frequency of News and Multi-Platform Index by Age Group.

	TV	Newspaper	Radio	Web	Social media	Multi-platform index
Age group	<i>M (SD)</i>					
Dutiful	7.62 (2.53)***	6.60 (3.19)***	4.15 (3.40)	2.26 (1.67)***	2.40 (1.96)***	15.41 (12.42)***
Boomer	7.35 (2.66)***	5.81 (3.28)***	4.02 (3.16)	2.41 (1.71)***	2.61 (2.14)***	18.27 (12.51)***
Gen-X	6.24 (2.73)***	4.46 (2.78)	3.69 (2.91)	2.94 (1.92)***	3.53 (2.51)***	25.64 (12.82)***
Millennial	5.38 (2.56)	3.86 (2.60)	3.81 (2.77)	3.70 (2.04)	4.32 (2.41)	31.76 (11.21)

Note. *N* = 1,225. Asterisks show statistically significant differences from the Millennial group (reference group). Based on ANOVA and post hoc analysis (Tukey test).

\*\*\**p* < .001.



**Figure 1.** Plot shows average frequency of news use (0 = never and 10 = all the time) across platforms (Table 1).

younger adults tend report getting their news from a variety of platforms at about the same rate. **H1** is confirmed.

**H2** proposed Millennials will score higher on a measure of multi-platform news (MPI) than other age groups. Based on the MPI score (Table 1) those in the Millennial group have, on average, a pattern of multi-platform news use that is twice as “dense” as those in the Dutiful age group (MPI = 31.76 for Millennials vs. MPI = 15.41 for Dutiful). Millennials also score higher in the MPI than Boomers (MPI = 18.27) and Gen-Xers (MPI = 25.64). Post hoc tests confirm that group differences between age groups are statistically significant. The authors further tested H2 with a linear model (OLS) between age and MPI. Results indicate that age and MPI are inversely related ( $b = -.38, SE = .02, p < .001$ ).<sup>6</sup>

Next, the relationships between MPI and various forms of political participation are assessed. Table 2 shows that the MPI is positively related to offline/group associations

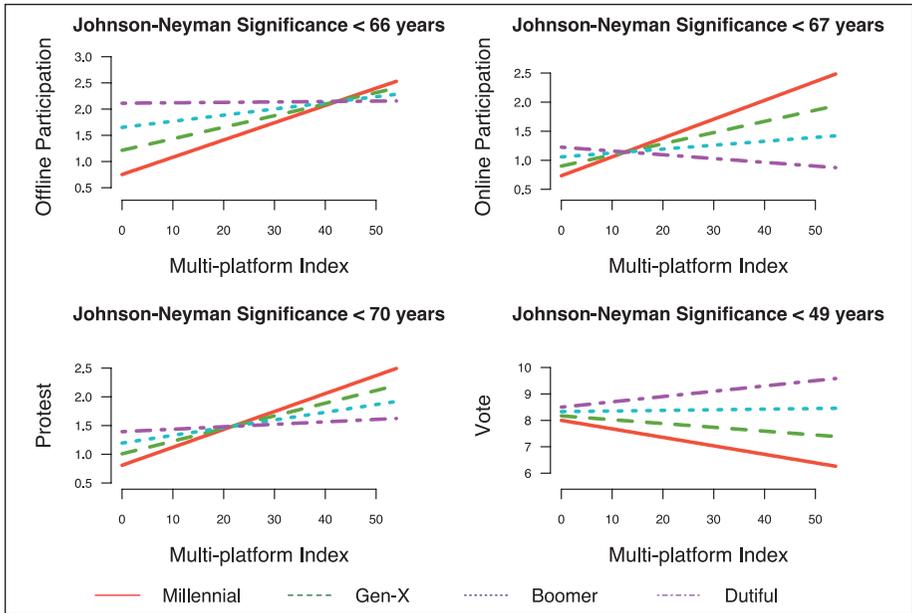
**Table 2.** OLS Regressions for Multi-Platform News Index on Levels of Online Political Engagement, Offline Politics and Group Associations, Voting, Lifestyle Politics, and Protest.

	Online political engagement	Offline/group associations	Voting	Lifestyle politics	Protest
	(1)	(2)	(3)	(4)	(5)
Age	-.106***	.084**	.160***	.030	-.011
Gender (female)	-.094***	-.014	.082**	.034	-.072***
Education	-.016	.002	.020	.053*	-.003
Income	-.003	.005	.070**	-.003	-.020
Race (White)	-.001	-.013	.091***	.056*	-.026
Discussion network size	-.113***	.136***	.004	.130***	.027
Internal efficacy	.075*	.111***	.144***	.113***	.129***
Strength of ideology	.009	.050*	.149***	.088***	.048
Political knowledge	-.114***	.004	.236***	.055	-.117***
Political discussion	.294***	.230***	.076*	.185***	.267***
Print news	.060*	.010	.061*	-.054	.046
Radio news	.049	.081**	.004	.059*	.041
TV news	.107**	.069*	.044	.022	.060
Web news	.079**	.107***	-.014	.094**	.082**
Social media	.149***	.095***	-.014	.130***	.097***
Multi-platform index	.236***	.156***	-.072*	.078*	.193***
Observations	1,272	1,281	1,271	1,286	1,281
Adjusted R <sup>2</sup>	.259	.302	.334	.274	.240
Residual SE (df)	0.984 (1,255)	1.605 (1,264)	2.451 (1,254)	2.191 (1,269)	1.344 (1,264)

Note. Coefficients are standardized betas. OLS = ordinary least squares.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

(RQ1;  $\beta = .156, p < .001$ ; see Model 2, Table 2; total variance explained, model  $R^2 = 30\%$ ). The MPI is also positively related to online forms of participation (see Model 1, Table 2;  $\beta = .236, p < .001$ ; model  $R^2 = 26\%$ ). MPI is indirectly related to voting (RQ2; see Model 3, Table 2). The relationship between MPI and voting is negative, and the null hypothesis (that there is no relationship) occurs about 5% of the time ( $\beta = -.072, p < .05$ ; model  $R^2 = 33\%$ ). RQ3 asked how the MPI relates to alternative or non-institutionalized forms of politics, that is, lifestyle politics and protest. Table 2 also shows the MPI coefficients for lifestyle politics (Model 4; model  $R^2 = 27\%$ ). and protest (Model 5; model  $R^2 = 24\%$ ). Results indicate that MPI is positively associated with protesting ( $\beta = .193, p < .001$ ), and lifestyle politics ( $\beta = .078, p < .05$ ). Although MPI operates similar to social media, web, and television news in most models, MPI only marginally predicts lifestyle politics, but social news ( $\beta = .130, p < .001$ ) and web news ( $\beta = .094, p < .01$ ) are strong, positive predictors. Social



**Figure 2.** Interaction effects of age groups and MPI on political participation (Table 2). Note. Johnson–Neyman significance labels are the age cutoff points for a statistically significant effect. MPI = multi-platform index.

media is not related to voting ( $\beta = -.014, p = .61$ ), whereas the relationship between MPI and voting is negative.

**RQ4** asked about the relationships between age, multi-platform news, and political participation. Based on the OLS models (Table 2), younger adults are more likely to participate online ( $\beta = -.106, p < .001$ ), but less likely to vote ( $\beta = .160, p < .001$ ) or join offline groups ( $\beta = .084, p < .01$ ). To thoroughly explore these relationships, interaction tests (moderation analysis) between age groups and MPI were performed.

Figure 2 plots the interaction effects in models where the interaction terms were statistically significant. Results show that for younger adults, particularly Millennials, as one’s score on the MPI increases ( $x$  axis), levels of political activity also increase ( $y$  axis) (Figure 2). The interaction effect of age on the relationship between MPI and political participation is positive and statistically significant for online, offline, and protest forms of engagement—but not for voting. In contrast, there is a negative relationship between MPI and voting for Millennials, and the relationship is statistically significant for those adults under 49 years of age (Johnson–Neyman technique). Results indicate that an increase in multi-platform news reliance tends to increase respondent’s reported levels of certain types of political activity for most age groups in the sample. The exception is the Dutiful group, where the slopes (effect strength) are mostly flat in all models.

## Discussion

The *multi-platform index* (MPI) adds to discussions about how to conceptualize and measure news use in the contemporary media environment (Bachmann et al., 2010; de Vreese & Neijens, 2016; Ha et al., 2018). As complexity in the media environment accelerates, people's orientations toward the news, and in turn, public life, are increasingly shaped by the various affordances of a hybrid media system. Specifically, Millennials are more likely to depend on multiple media platforms. Multi-platform news use is also directly related to differences in how citizens engage in politics. Results show patterned differences in how one's news use is related to various modes of political participation: multi-platform news use is positively related to online, offline group participation, political consumerism, and protest. In contrast, multi-platform news is negatively related to voting habits.

Based on these results, we can draw at least three concrete conclusions. First, as previous research has discussed (Bennett, 2008; Bimber et al., 2009; Dahlgren, 2009; Kim & Ball-Rokeach, 2009; Shah et al., 2007), patterns in news media consumption seem to drive differences in the way people participate in politics. Second, there are stark differences in patterns of media consumption and political participation between age groups (Patterson, 2007; Zukin et al., 2006). Third, and most importantly, the shift toward multi-platform news use occurs in tandem with changes in the way people engage in democratic society. Thus, it is reasonable to infer that multi-platform news dependency broadens an individual's information repertoire, which in turn offers alternative opportunities for participation in political life.

The MPI also addresses some of the validity concerns with measuring news use in specific media as separate items (de Vreese & Neijens, 2016; Mitchelstein & Boczkowski, 2010). In response to these concerns, scholars have developed the notion of media repertoires (Taneja et al., 2012; Yuan, 2011) and total news consumption (Ksiazek et al., 2010). These measures, like the one tested here, aim to reduce the tendency to underestimate news consumption in younger cohorts. The current approach argues for the increased use of CFA to improve *within and between* construct validity as well (particularly if platform isolation is relevant to the guiding research question). Because our research centers on the nature of platform diversity, or rather, the degree of overlap between uses of news on different platforms, we developed an index that shares more in common with measures of distance and density (Chiclana et al., 2013; Deza & Deza, 2009).

Platform diversity represents a higher order form of news engagement, one that has been conceptualized as dependency on media platforms apart from the intensity of use (Ball-Rokeach, 1998; Ha et al., 2018). Our data show only small differences in overall news use between age groups (see Note 6), but stark differences in technological reliance. Thus, younger adults' media dependency is typified by "snacking" behaviors; information is consumed in smaller amounts through a variety of technical modalities. Media snacking may have implications beyond political participation (e.g., learning, memory, political discussion, or emotional responses to content). In addition, the content pushed in diverse media contexts is qualitatively different from content flows in

low-diversity contexts. Understanding the various social and cognitive effects of platform diversity represents an ongoing research need.

An important caveat here should be noted: The MPI does not directly take into account total news use, and is thus agnostic to the platform itself, as well as the total amount of news used. It is simply a measure of relative “balance” of news use across media, and it is a useful tool for isolating platform dependence from overall news use. This measure makes a contribution to the field by tapping the broad range of possible platforms an individual might be exposed to at any given time. This more accurately describes how people actually encounter news in a technology-rich information environment. The measure clearly operates differently than news alone in the empirical models, and therefore, it represents a complimentary (rather than a replacement) operationalization of media behavior.

This study also engages ongoing conversations about the changing nature of citizenship in the digital age. While some scholars have noted that youth lack either meaningful opportunities or motivations for engaging in institutional political activities, others have argued that digital media have expanded the range of possible media and participation repertoires. These changes reflect a shift toward civic and network-enabled protest, and more connective forms of political action (Bennett, 2008; Bennett et al., 2011; Zukin et al., 2006). Our study largely supports this counternarrative, showing how multi-platform news is directly related to both institutional and network-based political activities. These effects remain despite full controls for other explanatory variables, such as political discussion and strength of ideology. According to Figure 2, there are also clear patterns in how age is related to various modes of participation. For example, MPI has less impact for older adults, while younger people tend to take advantage of these socio-technical opportunities the most.

One caution in interpreting the scope of the study is to note that sociologists concerned with theories of generational replacement distinguish between life cycle effects (changes in behavior due to age), cohort effects (traits embedded in a cohort, regardless of age), and generational effects (varied effects over time based on cohort) (see Hellevik, 2002; Ryder, 1965). It may be, for example, that young people are more likely to protest, regardless of the time period. More economically established citizens also typically dominate institutionalized politics, because this group tends to have the time and resources to contribute to politics (e.g., Verba et al., 1995). The current study shows clear differentiation in news and participation patterns, yet it is an open question whether this trend will continue decades from now. Affordances of new media are likely to evolve, and older citizens are likely to continue to lag behind their younger peers in the adoption of emerging communication behaviors. On the contrary, perhaps multi-platform news consumption will contribute to a leveling of the imbalance in political activities between age groups over time. According to regression results for the offline participation models (Table 2, Model 2; Figure 2), the MPI is positively related to offline organizational involvement, and older citizens appear to be leveraging these patterns in news use for political purposes as well.

The results should be considered in light of a few limitations. As this study relies on cross-sectional survey data, we can only infer group differences, and make no

claims related to future processes. There are also intrinsic limitations with self-reported news consumption measures (Prior, 2009). Ideally, this kind of measurement could be combined with live observational data. Future studies should also compare how the MPI performs relative to similar measures of diversity (Simpson's  $D$ , Hunter & Gaston, 1988). We also slightly over-sample middle-aged and college-educated adults compared with the general population, and the raw number of Millennials is only  $n = 277$ . Although this is an online survey, and not strictly a probability sample, the demographic profile closely matches other surveys. In addition, online sampling procedures are sometimes less generalizable than offline sampling methods, though online samples are increasingly becoming industry standard (see Callegaro et al., 2014). Future studies might draw larger numbers of Millennials, as well as those young adults in the post-Millennial cohort.

This study advances a conceptualization of media behavior that accounts for the hybrid nature of modern news consumption. Despite limitations with the current study, we show fairly strong evidence that multi-platform news use is a measureable feature of the modern digital information environment. This phenomenon, in turn, seems to be shaping the way young adults are socialized into various forms of political participation. This is important, as the larger political culture struggles with tensions between institutional processes and the more fluid, spontaneous nature of connective political movements. How younger citizens adapt their media habits to more traditional political activities (and vice-versa) will determine the nature of democratic society in the coming decades.

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### **Notes**

1. Some critics of traditional self-report measures point out that social desirability and memory problems lead to overestimation of news attention as well, though there is conflicting evidence for these concerns (Prior, 2009, cf. Jerit et al., 2016).
2. Items for latent models were chosen based on exploratory factor analysis (EFA; oblique rotation) from a random sample of the data ( $n = 565$ ), and the confirmatory factor analysis (CFA) was then confirmed on a separate subsample ( $n = 1,248$ ).

3. A previous version of this article employed a two-item measure for radio news. The item read: "How often do you encounter or come across news when using radio?" Although multi-item constructs reduce measurement error relative to single-item measures, the language used for this item differs from the other news measures used in the current study. In particular, the omitted question might not be tapping frequency of exposure to news per se, but simply the proportion of radio listening that includes news. Dropping the item also improved model fit in the exploratory CFA.
4. Example syntax in R, where TV = television news, NP = newspaper, RD = radio, WB = web news, SM = social media news, and abs = absolute value function, returns total distance, which can then be recoded as needed (reverse coded in the current study, higher number = less distance):  $MPI = \text{abs}(TV - NP) + \text{abs}(TV - RD) + \text{abs}(TV - WB) + \text{abs}(TV - SM) + \text{abs}(NP - RD) + \text{abs}(NP - WB) + \text{abs}(NP - SM) + \text{abs}(RD - WB) + \text{abs}(RD - SM) + \text{abs}(WB - SM)$ .
5. Levene's test provides evidence for a violation of the homogeneity of variances assumption for television news and the multi-platform news index (MPI; due to sample size, see Jan & Shieh, 2014). Post hoc Welch's test confirms group differences in both cases.
6. The authors also tested a model comparing age and overall total news consumption (average of all five platforms). In contrast to MPI, attention to overall news is nearly even across age groups, and the effect size is close to zero ( $b = .01$ ,  $SE = .01$ ,  $p < .01$ ).

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