

## Examining the Link Between Social Media Uses and Gratifications, and Political Tolerance and Dogmatism

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*The ability of social media to enable new uses and gratifications, and to shape political behavior, has not been discussed adequately in the social media literature. Drawing on a previous study by the authors that converts a framework by Sundar and Limperos (2013) into a social media uses and gratifications scale, this article examines the association between social media uses and gratifications, and political dogmatism and tolerance. A sample of 313 American citizens was used to develop two discriminant models. The models showed that social media uses and gratifications can be used to classify users with high or low levels of political dogmatism and tolerance with more than 70 percent accuracy. The results also indicate that while some gratifications, such as filtering, are common to individuals with high dogmatism as well as users with high tolerance, there were differences in the perception of uses and gratifications between these two groups. This shows that social media are open platforms that do not gratify only positive, open-minded users.*

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**KEY WORDS:** uses and gratifications, dogmatism, tolerance, social media, discriminant analysis

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有关社交媒体的“使用与满足”文献还未充分讨论过社交媒体实现新使用和满足的能力，以及其在政治行为中扮演的角色。Sundar和Limperos(2013)为此方面调查奠定了基础——他们为新媒体提供了一个将技术元素在塑造使用和满足过程中所扮演角色考虑在内的概念框架。一项研究曾将该框架转化到社交媒体使用和满足的层面上(Rathnayake & Winter, 2017)，基于该项研究，本文检查了社交媒体使用和满足、政治教条主义和容忍度三者之间的联系。313位美国公民组成的样本被用于开发两种判别模型。模型显示：社交媒体使用和满足能用于区分不同用户——他们的政治教条主义水平和容忍度水平或高或低——区分的准确性超过70%。结果同时显示：即使教条主义水平较高的用户和容忍度高的个体用户都有一些类似的满足（例如过滤），他们在使用和满足的本质存在不同。这说明社交媒体是公开的平台，它不仅仅只满足积极开放的用户。

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**关键词：** 使用与满足理论，教条主义，容忍度，判别分析，社交媒体

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*La capacidad de las redes sociales de facilitar nuevos usos y gratificaciones, y el papel que juega en el comportamiento político, no se ha discutido adecuadamente en la literatura de los usos y gratificaciones de las redes sociales. Sundar y Limperos (2013) proporcionaron unas bases para esta línea de investigación al sugerir un marco conceptual para los medios de comunicación nuevos que toma en consideración el papel que juegan los elementos tecnológicos en darle forma a los usos y*

gratificaciones. Al utilizar un estudio que convierte ese marco teórico en una escala de los usos y gratificaciones en las redes sociales (Rathnayake y Winter, 2017), este artículo examina la asociación entre los usos y gratificaciones de las redes sociales y el dogmatismo y tolerancia en la política. Una muestra de 313 ciudadanos estadounidenses fue utilizada para desarrollar dos modelos discriminantes. Los modelos mostraron que los usos y gratificaciones de las redes sociales pueden ser utilizados para clasificar usuarios con altos o bajos niveles de dogmatismo y tolerancia en la política con más de 70 por ciento de exactitud. Los resultados también indican que mientras que algunas gratificaciones, como el filtraje, son comunes en individuos con alto dogmatismo y también en aquellos con alta tolerancia, hubo diferencias en el tipo de usos y gratificaciones entre estos dos grupos. Esto demuestra que las redes sociales son plataformas abiertas que no solamente gratifican a los usuarios positivos y de mente abierta.

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**PALABRAS CLAVES:** Usos y gratificaciones, Dogmatismo, Tolerancia, Análisis discriminante, Redes sociales

## Introduction

Social media have permeated almost every aspect of society, including politics. The growing body of social media literature ranges from work that examines the use of social media in professional politics (e.g., Ausserhofer & Maireder, 2013) to protest action and revolution (e.g., Al-Ani, Mark, & Semaan, 2010; Marzouki, Skandrani-Marzouki, Béjaoui, Hammoudi, & Bellaj, 2012; Wojcieszak, 2009). Although political activity on social media is ubiquitous, several previous studies show that new media are not necessarily a utopia where users from diverse backgrounds exchange ideas. For instance, Wojcieszak and Mutz (2009) argue that political deliberation occurs incidentally, rather than purposefully, on social media. According to Himelboim, McCreery, and Smith (2013), cross-ideological exposure is unlikely on social media, as users tend to form homogeneous clusters.

Politically beneficial interaction on social media, especially in the context of political debates, requires openness and willingness to be exposed to diverse opinions. This does not necessarily mean that political aspects that may be viewed as less desirable, such as political polarization, should be completely eradicated. As Garcia, Abisheva, Schweighofer, Serdült, and Schweitzer (2015, p. 46) note, “[p]olitical polarization is an important ingredient in the functioning of a democratic system, but too much of it can lead to gridlock or even violent conflict.” Given the potential of social media for enabling interaction, social media studies need to pay attention to identifying factors that can help develop desirable levels of interaction among politically diverse groups on social media.

Creating a desirable level of interaction on social media between people of different political opinions relates to user attributes, such as political openness. By definition, social media are interactive platforms that demand new skills from users. As Marwick and boyd (2011) note, the multiplicity of social media audiences demands new skills, like the ability to handle context collapse—the collision of formerly distinct audiences on social network sites (SNS). Political attributes, such as tolerance and dogmatism, are crucial for

developing those skills for online interaction in general, and online political engagement in particular. For instance, a highly dogmatic user may find it difficult to handle online interactions with people from different social layers to whom they are related (e.g., professors, relatives, parents), if they have politically different opinions, and are politically active on social media. On the other hand, high tolerance may make it easier for a social media user to work with a diverse network of online “friends.” Moreover, understanding connections between user attributes and aspects of social media that users with different attributes find appealing can help in the development of policy guidelines to encourage interactions among politically diverse user communities. In support of this premise, this study examines social media uses and gratifications through the lens of political tolerance and dogmatism, two political attributes that determine online political behavior.

Political tolerance and dogmatism should be recognized as two attributes that can help form the foundation for social media policy. Social media are platforms that are open to all interested individuals, and people with diverse opinions and political attributes should have an equal right to access and use social media. However, lack of tolerance or extreme dogmatism may result in unacceptable behavior, such as hate speech and defamation, which can disrupt political engagement on social media. Accordingly, social media policy and design needs to consider how these two attributes can structure user gratifications that can eventually lead to differences in online political behavior.

Uses and Gratifications (U&G), a theoretical approach with a long history in the field of media studies, is appropriate to examine political dogmatism and tolerance in the context of social media, as it focuses on the gratifications users seek to satisfy through their media consumption. U&G studies, however, need to consider the changes in communication technology, such as the rise of new affordances brought about by social media. Despite its theoretical significance and increasing popularity in social media studies, the notion of affordances has not adequately been investigated in the social media uses and gratifications literature.

In an attempt to bridge this gap, Sundar and Limperos (2013) and Sundar (2008) suggest an affordance-based conceptual framework known as the MAIN model to measure new media uses and gratifications. This framework situates new media uses and gratifications in the context of new media affordances. Rathnayake and Winter (2017) developed a measure based on Sundar and Limperos’ (2013) work to capture social media uses and gratifications representing four classes of affordances suggested by the original framework. The present study uses that measure to examine social media uses and gratifications that can characterize political tolerance and dogmatism. The study is significant for at least two reasons. First, the MAIN model has not been subjected to adequate scholarly investigation. Second, the connection between dogmatism, tolerance, and social media uses and gratifications is as much a policy question as a topic of theoretical significance, as it can help develop policy guidelines for social media design and use.

### Related Literature

The U&G approach has its origins in media effects studies of the 1940s (Katz, Blumler, & Gurevitch, 1973). It suggests that media gratifications and content attract audiences and satisfy social and cognitive needs (Ruggiero, 2000), holding that people choose media that they think can satisfy their needs. The contemporary U&G literature covers a broad range. According to Papacharissi (2009), a typical U&G study can look at a specific medium, compare it with another medium, and study aspects such as motives, social and psychological antecedents, and effects of media consumption. Haridakis (2013) notes that typical U&G studies examine attitudinal and behavioral effects of different aspects of media use, such as the relevance of audience characteristics to the subject of interest, motives for using media, and aspects of activity (e.g., attention). The wide range covered by U&G studies makes the body of literature rich in terms of its depth, diversity, and methodological rigor.

#### *Social Media Uses and Gratifications*

U&G has been subject to substantial scholarly investigation in the context of the Internet, and social media in particular. Although U&G is a well-examined approach in the field of social media, the literature still lacks work that addresses the changes brought about by social media—affordances in particular. As Sundar and Limperos (2013) argue, U&G scholarship does not look beyond gratifications related to the media content, consumption process, and social environment related to media use. Sundar and Limperos (2013) suggest that U&G scholars need to consider the role of technology in shaping new media uses and gratifications. Supporting this claim, Rathnayake and Winter (2017) showed that the measures used in most studies tend to cover user-oriented uses and gratifications, leaving a gap of work that examines uses and gratifications by taking into account the role of technological aspects, including affordances provided by the platform. User-oriented constructs, such as information sharing, self-documentation, entertainment (Alhabash, Chiang, & Huang, 2014), socializing, information seeking (Apaolaza, He, & Hartmann, 2014), the need to connect (Chen, 2011), relationship maintenance (Chen & Kim, 2013), expression seeking (Kim, 2014), venting negative feelings (Leung, 2013), convenience (Luo & Remus, 2014), belonging, hedonism, self-esteem (Pai & Arnott, 2013), sociability, killing time (Ku, Chu, & Tseng, 2013), and self-status seeking (Park, Kee, & Valenzuela, 2009) are common in the literature, while platform-oriented measures are relatively underrepresented.

Social media, as boyd (2011) observes, introduce new affordances, such as persistence, replicability, scalability, and searchability, which can configure networked publics. These affordances can result in nuances in uses and gratifications that may not have been possible in the context of traditional media. The notion of social media affordances, however, has not been the subject of adequate investigation in the field of social media studies. Sundar and Limperos (2013) argue that new media affordances, such as modality, agency, interactivity, and navigability, lead users to expect certain gratifications that can shape

fulfillment of new media users. According to Sundar (2008), while the modality affordance relates to the ability of new media to present users with content in different modes, the agency affordance highlights the role of users as sources of information. New media also offer an interactivity affordance by allowing users to interact with the platform, in contrast to the passive consumption common to conventional media settings. Finally, the navigability affordance of new media enables navigation within cyberspace. These four affordances form the basis of the MAIN model, which identifies 16 possible gratifications of new media (Realism, Coolness, Novelty, Being There, Agency-enhancement, Community Building, Bandwagon, Filtering/Tailoring, Ownness, Interaction, Activity, Responsiveness, Dynamic Control, Browsing/Variety-seeking, Scaffolds/Navigation Aids, and Play/Fun). This model provides a solid conceptual foundation for social media U&G studies, as it is comprehensive and developed on the basis that technological elements of media can enable perception of new uses and gratifications. Rathnayake and Winter (2017) used this framework to develop a 30-item social media uses and gratifications scale that captures social media U&G based on 10 constructs suggested by Sundar and Limperos (2013). This scale is useful for further inquiry on social media uses and gratifications, as it considers user-oriented as well as platform-oriented uses and gratifications. Definitions of each construct included in the scale and sample items are provided in Table 1.

### *Social Media, Political Dogmatism, and Tolerance*

Social media have become powerful platforms for politics, alternative politics in particular. Among many characteristics of social media, interactivity requires new skills from the user. Marwick and boyd (2011) note that social media collapse different social contexts into one (e.g., one's social networks of family and the workplace), making it difficult for users to engage freely and openly. They argue that context collapse may lead to self-censorship, limiting users to a level of engagement that is safe for all audiences. While unique characteristics related to the medium itself, such as context collapse, can structure user behavior, there are user attributes that can shape the ways in which users tackle such challenges. In other words, social media behavior is an outcome of the interplay between platform characteristics and user attributes. We argue that uses and gratifications of social media should be examined in relation to their connections to political dogmatism and tolerance, as these two attributes may limit user engagement on social media.

The Internet is a discursive space where the ability and willingness to engage in politically enriching conversations matters. As Bimber (1998, p. 136) notes, "the anticipated effects of expanded communication are limited by the willingness and capacity of humans to engage in a complex political life." Political behavior on social media can be affected by many factors, including political attributes of users. For instance, a more politically tolerant actor might actively interact with politically different others, while less-tolerant actors may seek different gratifications, such as Dynamic Control (representing their ability to take charge of the SNS platform and control their interaction with the interface). These attributes or limitations should

Table 1. MAIN Dimensions, Constructs, and Sample Items

MAIN Dimensions and Definitions	Definitions of Gratifications and Sample Items
Modality: The presence of multiple modes of information	<p>Realism: The ability to access media content that can resemble real-life situations and contexts.  <i>Example: Communicating using social media is not that different from face-to-face communication (Reverse coded).</i></p> <p>Coolness: Positive perceptions that indicate appreciation of style, newness, and attractiveness of something in social contexts. "A conscious acknowledgment of the 'hipness' of the digital device suggested by its newer modalities" (Sundar, 2008, p. 82).  <i>Example: Social media platforms are more stylish than other media.</i></p> <p>Being There: The ability of social media platforms to create a sense of being present in a given environment.  <i>Example: Social media help me immerse myself in places that I cannot physically experience.</i></p>
Agency: Users being sources of information	<p>Agency-enhancement: Gratification of being a source of content, rather than a passive recipient of information.  <i>Example: Social media allow me to freely express my opinions.</i></p> <p>Community Building: The ability to connect with other social media users and sustain short/long-term social networks for various purposes.  <i>Example: Social media help me to be part of a community that I would not otherwise have been part of.</i></p> <p>Filtering/Tailoring: The ability to control information shared by others on a user's social media pages and control over information shared by the user.  <i>Example: On social media, I can avoid viewing things that I do not want to see.</i></p>
Interactivity: Ability to interact with the platform	<p>Interaction: Use of platform-specific features to customize media consumption, including options for specifying needs and preferences.  <i>Example: On social media, I can specify my needs and preferences on an ongoing basis.</i></p> <p>Activity: Active engagement of the user in the media use process, via frequent use of input mechanisms.  <i>Example: I feel active when I use social media.</i></p> <p>Responsiveness: Perceived ability of media platforms to respond to user commands/input.  <i>Example: Social media are more responsive than other media.</i></p>
Navigability: Ability to navigate through different types of content and enjoy the platform use process	<p>Browsing/Variety-seeking: Perceived diversity of media content by using design features, such as links and menus.  <i>Example: Social media can link me to sites that have different types of information.</i></p> <p>Play/Fun: Perceived enjoyment through the media use process.  <i>Example: Social media offer more entertaining features than other media.</i></p>

be taken into account in order to understand the causes and effects of online political engagement. User attributes can range from personality traits, such as extraversion, to attributes that directly connect with political actions, such as political tolerance and dogmatism. Several scholars have explained effects of user traits on online political behavior. For instance, Quintelier and Theocharis (2012) claim that extraversion and openness to experience can predict online political engagement, although traits like agreeableness, conscientiousness, and emotional

stability do not strongly affect political engagement. Similarly, Kim, Hsu, and Gil de Zúñiga (2013) consider the effects of personality traits in their study on civic participation, arguing that the same constructs (extraversion and openness to experience) moderate the effect of social media use on civic participation. Work done by Kim et al. (2013) and Quintelier and Theocharis (2012) show that the internal attributes of social media users can affect their online political behavior. While this is an important dimension of political behavior, it is also important to consider the effects of internal attributes on social media uses and gratifications as there can be gratifications that may eventually lead to certain types of political behavior. In other words, it is reasonable to hypothesize connections between political attributes and uses and gratifications, as differences in political attributes may lead to differences in uses and gratifications. Accordingly, this study examines political tolerance and dogmatism to understand affordance-based social media uses and gratifications. Despite their significance in the political science literature, these two constructs remain largely unexplored in the social media U&G literature.

Altemeyer (2002, p. 713) defines dogmatism as “relatively unchangeable, unjustified certainty.” As Shearman and Levine (2006) note, dogmatism is a personality trait that indicates closed-mindedness. Dogmatism is significant to studies of online political studies, as online political behavior can be directly affected by closed-mindedness. Starting from the work of Rokeach (1960), who conceptualized it and suggested a measure for the construct, dogmatism has been the subject of considerable academic investigation in the political science literature. Rokeach (1960) explains that every individual has a belief system (beliefs, expectancies, or a hypothesis that they accept as true) and disbelief system (beliefs, expectancies, or a hypothesis they reject). Dogmatism can be characterized by a high degree of isolation (i.e., reluctance to see interrelations between divergent belief systems), low differentiation within belief systems (i.e., lack of articulation and richness of information within a belief system), and high comprehensiveness among disbelief subsystems (i.e., high range of disbelief systems). Based on this conceptual foundation, Shearman and Levine (2006) note that those who have high dogmatism tend to compartmentalize and isolate their beliefs and disbeliefs, while individuals with low dogmatism are open and willing to link divergent beliefs.

Political dogmatism has a direct connection with political behavior. According to White-Ajmani and Bursik (2011), conservatives are more dogmatic than liberals and moderates, and those who are not ready to compromise their viewpoints tend to be intolerant toward those who have opposing viewpoints. This connection requires further investigation in the context of social media, as intolerance can hamper the potential of social media to facilitate sociopolitical progress. This can be the case in particular with regard to online social networks, as political engagement on social media requires interaction. Only a few scholars have discussed dogmatism in the context of the Internet. Reisenwitz and Cutler (1998), for example, sought to connect dogmatism with Internet adoption. They hypothesized that customers with low dogmatism might prefer innovative products as opposed to customers with high dogmatism, who might prefer traditional products. However, they failed to support this argument in the context of Internet

adoption. Reisenwitz and Cutler's (1998) attempt to connect dogmatism with Internet adoption might have resulted from their perspective, that is, considering the Internet as a single platform (a product) that less-dogmatic innovators might embrace. This view might have been valid for the pre-social media atmosphere, but social media are multifaceted phenomena, characterized by diverse platforms, functions, and usage. Therefore, a connection between dogmatism and the Internet in general is not an easy argument to support. Similarly, finding relationships between specific social media platforms and dogmatism can also be difficult, as individuals with different levels of dogmatism might use social media for different purposes. Moreover, people with different levels of dogmatism might seek different uses and gratifications on social media.

We suggest that dogmatism can be connected with social media affordances, and uses and gratifications, and that this connection can be uncovered by examining the gratifications of those who have different levels of dogmatism. From the perspective of the MAIN framework, it is possible that uses and gratifications such as Community Building, Bandwagon, and Interaction may be more appealing to politically open-minded (therefore, less dogmatic) users. On the other hand, the ability to filter or tailor information may gratify dogmatic users, as such affordances help them to avoid content that they dislike. Community Building and Interaction require social media users to be open to different types of users and accept them as part of their social circles. Moreover, Bandwagon and Filtering require users to be open to others' opinions, and to alter the opinions they have accordingly. However, this does not mean that those characterized by high dogmatism avoid social media. For instance, gratifications such as Fun, Novelty, and "Being There" may attract dogmatic users and help them to remain attached to a social media platform. This theoretical problem leads to the following questions:

*RQ<sub>1</sub>—Are there differences in perceived social media Uses and Gratifications between individuals with high and low levels of political dogmatism?*

*RQ<sub>2</sub>—What Uses and Gratifications, if any, characterize individuals with high levels of dogmatism, as opposed to those who indicate low levels of dogmatism?*

Political tolerance is another factor that can affect online political behavior. Starting from the work of Stouffer (1955), who initiated the study of political tolerance, this construct has been subject to extensive research. Political tolerance, according to Robinson (2010, p. 495), is "citizens' willingness to respect the rights and liberties of others whose opinions and practices differ from their own." Tolerance should be examined along with dogmatism, as these two constructs can help describe the extent to which a person is willing to interact with politically diverse people. According to White-Ajmani and Bursik (2011), liberals, conservatives, and moderates differ in terms of their tolerance levels. Their study shows that liberals tend to be the most tolerant, while conservatives are the least tolerant among the three categories. Marcus, Sullivan, Theiss-Morse, and Stevens (2005, p. 950) note that, "[p]olitical tolerance is one of the



most important values among those that make up the panoply of characteristics of liberal democratic regimes.” Moreover, Robinson (2010) examines political tolerance in the context of religion, and claims that the exposure to different viewpoints produces political tolerance only when those views are attributed to a leader from within a particular group (e.g., a religious group).

A few studies support tolerance as directly relevant for social media studies. Harell (2010), for instance, argues that young whites in Canada express a multicultural form of tolerance if they have more diverse networks and that diversity increases tolerance for certain types of speech. He concluded that the diversity of one’s social network can affect one’s tolerance. This argument can be equally valid for online social networks. Social media expand people’s ability to connect with diverse groups. Therefore, it is possible that those who interact with people from different ethnic, religious, and socioeconomic backgrounds might be politically more tolerant. However, willingness to interact with differently minded others remains a problem in online interaction. Recent work on political polarization (e.g., Bakshy, Messing, & Adamic, 2015; Himelboim et al., 2013) indicates that the Internet is a polarized space. Accordingly, less tolerant individuals may tend not to interact frequently with people from different backgrounds and different perspectives. However, a lack of tolerance may not mean that those who have low tolerance keep from using social media. They may seek different uses and gratifications. This argument supports hypothesizing connections between certain uses and gratifications and political tolerance. The MAIN model includes several uses and gratifications that might be more appealing to more politically tolerant users than others. For instance, they might find Interaction and Community Building on social media more appealing than other affordances. Moreover, uses and gratifications such as Dynamic Control can be more appealing to less-tolerant users. This possible connection between political tolerance and uses and gratifications leads to the following questions:

*RQ<sub>3</sub>—Are there differences in perceived social media Uses and Gratifications between individuals with high and low levels of political tolerance?*

*RQ<sub>4</sub>—What Uses and Gratifications, if any, characterize individuals with high levels of political tolerance, as opposed to those who indicate low levels of political tolerance?*

This study investigates the above four questions based on survey data obtained from a random sample of 313 U.S. citizens.

## Method

### *Measures*

A social media uses and gratifications scale (Rathnayake & Winter, 2017) was used to measure uses and gratifications of the survey respondents. This scale included 30 items developed based on the MAIN model, representing 10 social

media uses and gratifications: Realism, Coolness, Being There, Agency, Community Building, Filtering, Activity, Responsiveness, Browsing, and Play. This scale is appropriate for measuring uses and gratifications as it is comprehensive and considers technological aspects of social media platforms. A 5-point Likert-type scale was used to measure the extent of perception of each gratification. The validity of the scale was confirmed using a Confirmatory Factor Analysis (CFA) procedure. We ran several competing CFA models using different combinations of items to find the best fitting items for each latent construct. This process improved the quality of construct measurement. Several items with high standardized residuals were removed during the model-fitting process. The removal of these items from the final scale did not affect the theoretical basis of the scale, as each latent construct was measured using an appropriate number of items. Cronbach's Alpha values for all of the constructs, except Political Tolerance were considerably high (Realism: 0.70, Coolness: 0.76, Being There: 0.80, Agency: 0.832, Community Building: 0.787, Filtering: 0.64, Activity: 0.77, Responsiveness: 0.835, Browsing: 0.88, Play: 0.80, Political Dogmatism: 0.67), indicating that the measures have adequate internal consistency. Cronbach's Alpha for Political Tolerance was moderate (0.52). A CFA showed reasonable fit, indicating that the social media U&G scale items were appropriate for further inquiry (Model fit:  $\chi^2$ : 768.89, df: 389,  $p \leq 0.001$ , goodness-of-fit index (GFI): 0.850, adjusted GFI: 0.821, incremental fit index: 0.924, Tucker Lewis index: 0.914, comparative fit index: 0.923, root mean square error of approximation (RMSEA): 0.056). Table 1 provides definitions of constructs and sample items included in the final scale.

Dogmatism and tolerance have been measured using a range of different approaches. Dogmatism, as defined in the literature review, is a state of mind characterized by closed-mindedness. Altemeyer (1996) suggested a measure, called the DOG scale, which includes 20 items. Altemeyer (2002) noted that DOG measures correlate with a "rightist" authoritarian personality. Moreover, he noted that, in the United States, Republicans show higher levels of dogmatism than Democrats, and that this can be exposed by bringing up religion. Crowson (2009) examined the construct validity of this measure and supported its unidimensionality and convergent validity. Shearman and Levine (2006) also suggested a revised 23-item scale to measure dogmatism. Accordingly, eight items were chosen from the measures used by Shearman and Levine (2006) and Altemeyer (2002) for the present study. These items, altogether, provide a measure of dogmatism as a single construct, rather than a multidimensional scale that captures various aspects of the construct.

The "least-liked paradigm," where respondents are asked to identify the groups they dislike and express the extent to which they would allow those groups to engage in certain activities (e.g., protests), is a common approach to measure tolerance (e.g., Gibson, 2005; Golebiowska, 1999). While the "least-liked" group is a popular approach, a few researchers use a more general approach to operationalize tolerance. For instance, Pattie and Johnston (2008) discuss giving respondents a set of statements that measure tolerance in general. Rather than identifying specific groups, these items identify respondent tolerance toward those who they perceive to be minorities, and people they

disagree with. This approach was more appropriate, as defining a specific group or several groups as “least-liked” groups may introduce biases if some respondents do not dislike them. Therefore, three political tolerance items were selected from the items discussed by Pattie and Johnston (2008). One more item (“every citizen has the right to support his/her political views even if I don’t agree with them”) was added to measure tolerance toward the rights of others to have different political opinions.

### *Data Collection and Analysis*

A survey was conducted through a professional data collection organization. A pretest was conducted among 30 subjects prior to the launch of the full survey. Table 2 shows the composition of the sample. The final sample included 313 randomly sampled subjects in the United States.

Discriminant analysis serves the dual purpose of describing group differences based on available evidence as well as predicting the category a subject belongs in. This technique was used for analysis to categorize users into groups with

**Table 2.** Survey Sample Composition

	<i>n</i>	%
Gender		
Male	131	41.9
Female	182	58.1
Age		
Between 18–25 years	23	7.3
Between 26–32 years	53	16.9
Between 33–40 years	64	20.4
Between 41–47 years	48	15.3
Above 47 years	125	39.9
Ethnicity		
Caucasian	236	75.4
African American	33	10.5
Asian	15	4.8
Native American	1	0.3
Pacific Islander	2	0.6
Hispanic	19	6.1
Other	7	2.2
Education		
College freshman	17	5.4
Sophomore	20	6.4
Junior	12	3.8
Senior	26	8.3
Graduate student	95	30.4
Other	143	45.7
Social media use		
Several times a day	193	61.7
About once a day	50	16
3–5 days a week	33	10.5
1–2 days a week	21	6.7
Every few weeks	12	3.8
Less often	4	1.3

different levels of political tolerance and dogmatism, and predict users' tolerance and dogmatism levels based on their social media uses and gratifications. We do not hypothesize causal relationships between the two political attributes and social media uses and gratifications. The goal of the study is rather to demonstrate that social media uses and gratifications can help categorize subjects into groups that fall within different categories for each political attribute. Accordingly, each subject was assigned to a group based on their dogmatism and tolerance levels. Construct totals based on a 5-point Likert-type scale were used to categorize subjects into high, medium, and low dogmatism or tolerance groups. Group differences were examined using a *t*-test and multivariate analysis of variance (MANOVA) prior to the discriminant analysis.

## Results

Means and standard deviations given in Table 3 show that those who have high political dogmatism have high mean values for Agency ( $\bar{x}$  : 4.21), Community Building ( $\bar{x}$  : 4.09), Filtering ( $\bar{x}$  : 4.14), Browsing ( $\bar{x}$  : 4.13), and Play ( $\bar{x}$  : 4.03) gratifications of social media. However, individuals with low and moderate dogmatism gravitate toward neutral perceptions of social media uses and gratifications. The first research question (RQ<sub>1</sub>) focuses on differences in uses and gratifications between individuals with high and low political dogmatism. An independent samples *t*-test showed that these two groups differ from each other for each construct (Realism: *t* : -6.967,  $p \leq 0.05$ , Coolness: *t* : -3.346,  $p \leq 0.05$ , Being There: *t* : -5.214,  $p \leq 0.05$ , Agency: *t* : -4.772,  $p \leq 0.05$ , Community Building: *t* : -4.144,  $p \leq 0.05$ , Filtering: *t* : -3.505,  $p \leq 0.05$ , Activity: *t* : -4.970,  $p \leq 0.05$ , Responsiveness: *t* : -5.626,  $p \leq 0.05$ , Browsing: *t* : -3.876,  $p \leq 0.05$ , and Play: *t* : -6.062,  $p \leq 0.05$ ).

The MANOVA conducted to examine the main effects of the dogmatism category on uses and gratifications (Table 4) showed that dogmatism exerts a significant impact on social media uses and gratifications. Post-hoc analysis

**Table 3.** Means and Standard Deviations by Dogmatism Category

	Dogmatism Category					
	Moderate		Low		High	
	Mean	SD	Mean	SD	Mean	SD
Realism	2.59	0.863	2.16	0.816	3.14	1.078
Coolness	3.65	0.634	3.66	0.647	3.99	0.650
Being There	3.25	0.921	3.12	0.938	3.82	0.807
Agency	3.76	0.729	3.75	0.653	4.21	0.596
Community Building	3.67	0.718	3.65	0.742	4.09	0.625
Filtering	3.87	0.532	3.84	0.546	4.14	0.591
Activity	3.11	0.755	3.11	0.853	3.72	0.750
Responsiveness	3.19	0.709	3.01	0.818	3.69	0.785
Browsing	3.74	0.610	3.75	0.665	4.13	0.629
Play	3.41	0.833	3.31	0.819	4.03	0.747

**Table 4.** Results of the MANOVA Based on Dogmatism Category

Effect	Hypothesis				
	Value	F	df	Error df	Sig.
Pillai's Trace	1.137	18.480	30.000	909.000	0.000
Wilks' Lambda	0.012	103.763	30.000	884.170	0.000
Hotelling's Trace	70.600	705.212	30.000	899.000	0.000
Roy's Largest Root	70.430	2134.039	10.000	303.000	0.000

showed that those who have high dogmatism fall into a different subset than individuals with low dogmatism.

The MANOVA results suggest that social media uses and gratifications may characterize individuals with different degrees of dogmatism. Accordingly, a discriminant analysis was conducted to identify uses and gratifications that can best characterize individuals with high levels of dogmatism as opposed to others (RQ<sub>2</sub>). Table 5 provides eigenvalues and Wilks' Lambda test results for the model. The model had an eigenvalue of 0.366, a canonical correlation of 0.518, and accounted for 100 percent of variance. The chi-square test was significant for the function ( $\chi^2$ : 55.18,  $p \leq 0.05$ ). Standardized canonical discriminant function coefficients for the model indicated that Realism (0.635) and Play (0.401) have a high ability to discriminate between individuals with different degrees of dogmatism. However, the other four gratifications included in the model had low standardized coefficients (Being There: -0.038, Agency: 0.117, Filtering: 0.122, Responsiveness: 0.084). As reported above, *t*-test results showed that there are significant differences between those who have high and low levels of dogmatism in terms of their perception of Realism (*t*: -6.967,  $p \leq 0.05$ ) and Play (*t*: -6.062,  $p \leq 0.05$ ). Mean values show that those who have low dogmatism disagree with the Realism affordance of social media ( $\bar{x}$ : 2.16), while those who have high dogmatism are neutral about Realism. Moreover, individuals with high dogmatism agree with the Play gratification ( $\bar{x}$ : 4.03) while those who show low dogmatism are moderate along this dimension ( $\bar{x}$ : 3.31). According to the results of the classification (Table 6), the model correctly classified 75.8 percent of original grouped cases. This included 77.8 percent of individuals with low dogmatism and 73 percent of individuals with high dogmatism.

The third research question (RQ<sub>3</sub>) focused on differences in social media uses and gratifications between individuals with different degrees of political tolerance. Table 7 shows means and standard deviations of social media uses and gratifications for tolerance categories. Those who have high tolerance indicate

**Table 5.** Eigenvalues and Wilks' Lambda Test Results: Political Dogmatism

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	0.366	100.0	100.0	0.518
Test of function(s)	Wilks' Lambda	$\chi^2$	df	Significance
1	0.732	55.184	6	0.000

**Table 6.** Classification Results: Dogmatism Categories

Dogmatism Category	Predicted Group Membership		Total
	Low	High	
<i>n</i>			
Low	84	24	108
High	20	54	74
Ungrouped cases	76	55	131
%			
Low	77.8	22.2	100.0
High	27.0	73.0	100.0
Ungrouped cases	58.0	42.0	100.0

Note: 75.8 percent of original grouped cases correctly classified.

higher perception of Coolness ( $\bar{x}$ : 3.89), Agency ( $\bar{x}$ : 3.98), Community Building ( $\bar{x}$ : 3.89), Filtering ( $\bar{x}$ : 4.02), and Browsing ( $\bar{x}$ : 3.99). The mean values of other groups did not highly deviate from those mean values. An independent samples *t*-test showed that there are significant differences between these two groups for six constructs (Coolness: *t*: -1.556,  $p \leq 0.05$ , Community Building: *t*: -3.060,  $p \leq 0.05$ , Filtering *t*: -4.370,  $p \leq 0.05$ , Responsiveness: *t*: -3.080,  $p \leq 0.05$ , Browsing: *t*: -4.736,  $p \leq 0.05$ , Play: *t*: -2.31,  $p \leq 0.05$ ). The MANOVA results (Table 8) showed that the tolerance category exerts a significant impact on the perception of social media uses and gratifications. A Waller–Duncan test showed that while subjects with different degrees of political tolerance fell into the same subset for Realism and different subsets for Coolness and Browsing, respondents with moderate and low political tolerance were included in the same subset for most of the gratifications (e.g., Being There, Agency, Community Building, Activity, Responsiveness, and Play). Moreover, subjects with moderate and high political tolerance fell into the same subset for Filtering.

The MANOVA was followed by a discriminant analysis to discover gratifications that can characterize respondents with different degrees of political tolerance (RQ<sub>4</sub>). Despite a low eigenvalue and canonical correlation,

**Table 7.** Means and Standard Deviations by Tolerance Category

	Tolerance Category					
	Moderate		Low		High	
	Mean	SD	Mean	SD	Mean	SD
Realism	2.45	0.885	2.43	0.769	2.69	1.062
Coolness	3.63	0.642	3.42	0.637	3.89	0.627
Being There	3.21	0.909	3.19	0.787	3.46	0.985
Agency	3.72	0.676	3.77	0.667	3.98	0.705
Community Building	3.67	0.755	3.54	0.824	3.89	0.655
Filtering	3.89	0.532	3.63	0.676	4.02	0.514
Activity	3.12	0.795	3.03	0.791	3.40	0.836
Responsiveness	3.12	0.668	2.97	0.777	3.40	0.861
Browsing	3.72	0.671	3.52	0.680	3.99	0.587
Play	3.36	0.903	3.37	0.870	3.67	0.800

**Table 8.** Results of the MANOVA Based on Tolerance Category

Effect	Hypothesis				
	Value	F	df	Error df	Sig.
Pillai's Trace	1.044	16.166	30.000	909.000	0.000
Wilks' Lambda	0.013	99.904	30.000	884.170	0.000
Hotelling's Trace	71.553	714.737	30.000	899.000	0.000
Roy's Largest Root	71.494	2166.261	10.000	303.000	0.000

the chi-square test for the discriminant function was significant ( $\chi^2$ : 33.688,  $p \leq 0.05$ ; see Table 9). The standardized canonical discriminant function coefficients showed that Coolness (0.563), Filtering (0.434), and Browsing (0.456) have high capacity to differentiate between subjects with high and low political tolerance. According to  $t$ -test results, perception of these three constructs is significantly different between subjects with high and low political tolerance (Coolness:  $t$ : -4.529,  $p \leq 0.05$ , Filtering:  $t$ : -4.370,  $p \leq 0.05$ , Browsing:  $t$ : -4.736,  $p \leq 0.05$ ). The mean values showed that those who have high political tolerance perceive Coolness, Filtering, and Browsing affordances more than those with low tolerance. However, the standardized canonical discriminant function coefficient values for other gratifications included in the model were low (Community Building: -0.186, Responsiveness: 0.016). This model was able to classify 74.2 percent of the grouped cases accurately (Table 10). This included 75.2 percent of individuals with high tolerance and 70.8 percent of subjects with low tolerance. Given the high accuracy of this classification, this model can be used to characterize groups with different degrees of political tolerance using their social media uses and gratifications.

## Discussion

While online politics has been a highly active topic in the social media literature, more studies on the impact of political attributes, such as political dogmatism and tolerance, will benefit the field. Understanding uses and gratifications of individuals with different levels of political tolerance and dogmatism is useful for several reasons. From a policy perspective, it can guide policymaking to create a more tolerant and less polarized online public space. Such a policy framework can also help designers to create a more politically tolerant and discursive social media space. As noted before, previous studies (e.g., Kim et al., 2013; Quintelier & Theocharis, 2012) have shown that political attributes, such as

**Table 9.** Eigenvalues and Wilks' Lambda Test Results: Political Tolerance

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	0.175	100.0	100.0	0.386
Test of Function(s)	Wilks' Lambda	$\chi^2$	df	Significance
1	0.851	33.688	5	0.000

**Table 10.** Classification Results: Tolerance Categories

Tolerance Category	Predicted Group Membership		Total
	Low	High	
<i>n</i>			
Low	34	14	48
High	41	124	165
Ungrouped cases	45	55	100
%			
Low	70.8	29.2	100.0
High	24.8	75.2	100.0
Ungrouped cases	45.0	55.0	100.0

*Note:* 74.2 percent of original grouped cases correctly classified.

openness and extraversion, affect participation on social media. Taking a somewhat different perspective, the discriminant models developed in this study focused on characterizing users with two types of political attributes (tolerance and dogmatism) using their social media uses and gratifications. The results show that there are significant differences between social media users with varying levels of tolerance and dogmatism. The MAIN model (Sundar, 2008; Sundar & Limperos, 2013) was used to provide a comprehensive measure that captures unique motives for Internet use (e.g., interaction with the platform) while keeping uses and gratifications that are common to both new and old media (e.g., Play). This enables a discussion about how social media affordances could facilitate political behavior that may not necessarily be encouraged by conventional media.

The first discriminant model showed that a combination of uses and gratifications can classify social media users with high or low levels of political dogmatism with more than 75 percent accuracy. The model included six uses and gratifications (Realism, Play, Being There, Agency-enhancement, Filtering, and Responsiveness), and Realism and Play gratifications were prominent among them. The results show that those who have high dogmatism perceive social media as real and enjoy the Play gratification of social media more than those with low dogmatism. Similarly, this group perceived significantly higher gratifications of Coolness, Being There, Agency-enhancement, Community Building, Filtering, Activity, Responsiveness, and Browsing. Previous work (Reisenwitz & Cutler, 1998) did not support the hypotheses that those who adopt the Internet are less dogmatic than nonadopters, and those who adopt the Internet later display higher dogmatism than early adopters. This study extends this view, arguing that political openness or not being dogmatic does not necessarily result in social media being perceived as more enjoyable and real. In general, it may seem counter-intuitive to argue that dogmatic individuals enjoy media content and perceive the Realism aspect of social media more than their less-dogmatic counterparts. However, that is the case, at least according to the results discussed above.

Effects of dogmatism on aspects of interaction, such as Community Building, can provide useful insight to design platforms that discourage online conflict and foster healthy interaction. Political dogmatism, as discussed earlier,



is a trait characterized by political closed-mindedness and unchangeable certainty (Altemeyer, 2002; Shearman & Levine, 2006). However, this does not necessarily imply a lack of intention to interact, build communities, and use social media for political or other purposes. The results of this study show that political dogmatism does not keep social media users from experiencing social media uses and gratifications. As mentioned in the literature review, some uses and gratifications that demand social interaction, such as Community Building, may seem particularly appealing to less dogmatic social media users. However, the results discussed above indicated above-average favorable mean values for the Community Building gratification among highly dogmatic respondents. This shows that social media gratifications can help increase the sense of community among users with different political attributes.

This does not necessarily mean that those who have different political attributes interact with each other on social media. This observation can be supported based on previous work that points to the highly polarized nature of online exchange (e.g., Bakshy et al., 2015; Himelboim et al., 2013). Himelboim et al. (2013) claim that it is unlikely that Twitter users are exposed to different political ideologies from their Twitter networks. Similarly, Bakshy et al. (2015) found substantial polarization among Facebook users. Arguably, if users exist in polarized social media spaces, it is likely that they perceive the gratification of Community Building among like-minded users. Moreover, even among the politically dogmatic, some may use social media primarily for other purposes, such as entertainment, and may engage in building communities online.

The results support our suggestion stated in the literature review that the Filtering gratification may appeal more to dogmatic social media users. Arguably, Filtering can allow dogmatic users to filter out content that they disagree with. This may also be connected to the above observation that highly dogmatic users perceive the Play and Community Building gratifications more than others. Those who filter out content as well as connections with those who have opposing viewpoints may find social media more enticing. However, this demands more academic investigation, as contextual clues, such as the composition of online friendship networks, the nature of the content shared, and level of political engagement, can affect their perception of uses and gratifications. Ultimately, understanding social media uses and gratifications of the highly dogmatic group may help design platforms that foster broader political discussions while providing scaffolds for new forms of democratic governance.

According to the second discriminant model, uses and gratifications can help predict social media users with high or low political tolerance with more than 74 percent accuracy. The model showed that Coolness, Filtering, and Browsing can highly account for the group differences. The results also showed that those who have high political tolerance perceive the Coolness, Filtering, and Browsing affordances more than those with low tolerance. There can be many factors that enable politically tolerant users to perceive gratifications like

Coolness. For instance, diversity in social networks positively influences tolerance (Ikeda & Richey, 2009), and therefore, tolerance can be an indicator of a more diverse social network. Social media content may seem cool for more tolerant people, as they tend to accept diverse opinions. However, the results showed that highly tolerant users filter their social media content more than others, indicating that tolerance does not mean that users accept everything on social media. As Sullivan, Marcus, Feldman, and Piereson (1981) claim, the commitment to general norms and perceived threat from dissident groups can be considered as sources of political tolerance. Arguably, both these variables may force highly tolerant social media users to filter their content. Moreover, the fact that those who have high political tolerance perceive the Browsing gratification more than others indicates that they are more open to exploring social media content.

Social media are often associated with values like collectivism, sense of community, interaction, and tolerance. The above results provide insight into understanding uses and gratifications of social media users with different degrees of dogmatism and tolerance. While some gratifications, such as Filtering, are common to individuals with high dogmatism as well as users with high tolerance, there were differences in the perception of uses and gratifications between these two groups. This shows that social media are equally open platforms that are not particularly designed for positive, open-minded users. These results also support the above assertion that social media platforms can provide uses and gratifications for any user, regardless of their political attributes.

In general, dogmatism and tolerance are expected to be negatively correlated. Therefore, causes of uses and gratifications might logically be different between these two groups. However, the fact that individuals with high dogmatism, as well as those who have high political tolerance, report high mean values for social media uses and gratifications indicate that social media platforms can cater to the needs of individuals with diverse political attributes. Arguably, differences in uses and gratifications between these two groups can relate to social media content rather than the platform. Moreover, it is possible that both these groups enjoy social media platforms, if they do not exist in the same social media space. This argument is consistent with the above claim that polarized social media spaces may result in high gratification among dogmatic users. However, the interplay between the two constructs in the context of social media uses and gratifications is open for future research, as it is beyond the scope of this study.

The predictability of political dogmatism and tolerance based on social media uses and gratifications can help designers and policymakers to practice reflexive approaches for developing politically desirable social media spaces. High perception of some gratifications, such as Realism, Play, and Community Building, by politically closed-minded individuals shows that social media can be inclusive as they gratify politically closed-minded individuals. This may keep them from being socially isolated or clustered into small groups, and help expose dogmatic users to the opinions of more tolerant users.

## Conclusion

This article has addressed the ability of social media affordances to enable new uses and gratifications, and the role these play in online political behavior. Building on Sundar and Limperos' (2013) conceptual framework for new media that takes into account the role played by technological elements in shaping uses and gratifications, and Rathnayake and Winter's (2017) conversion of this framework into a social media uses and gratifications scale, this article examined associations between social media uses and gratifications and political dogmatism and tolerance. Drawing on a random sample of 313 U.S. citizens, two discriminant models were created. The results indicate that social media uses and gratifications can be used to classify users with high or low levels of political dogmatism and tolerance with more than 70 percent accuracy. Further, while some gratifications are common to individuals with high dogmatism as well as users with high tolerance, there were differences in social media uses and gratifications between these two groups.

From an overall perspective, this study shows that social media are equally open platforms that do not gratify only tolerant, less-dogmatic users. These results can inform system designers seeking to create platforms supporting democratic discourse. Play and Realism, two gratifications perceived highly by dogmatic users, can be helpful in addressing the polarization issue on social media. Proper use of the ability of social media platforms to elicit these gratifications can increase cross-cutting exposure between dogmatic individuals and others. For instance, a platform that both these groups find enjoyable regardless of political opinions may increase interaction with individuals with different opinions. Such spaces can be created via artifact-centered tie formation (e.g., members of a page) as opposed to friendship-based network formation. Proper use of technical features can facilitate healthy exchange of information between the two parties on these venues. For example, automated agents, such as bots, can be used to detect and avoid offensive language that may stir up inappropriate behavior. Moreover, in addition to features that enable users to report violent or harmful forms of online expression, machine-learning algorithms can be employed by SNS platforms to identify hate speech or materials that violate laws or collective norms. From an overall perspective, SNS platforms can modify informational policies to better support democratic discourse, weighing inclusion of affordances that stimulate discussion. Policy-makers can also build a legal and regulatory foundation that provides a framework for designers to constrain inappropriate behavior while still supporting community building, open expression, debate among people with different political opinions, and the information gathering needed to sustain a democracy. However, it should be noted that dogmatism and tolerance are psychological attributes that may or may not transform into specific behavioral patterns. Accordingly, further work is needed to examine behavioral manifestations of these constructs. We discuss several areas for further research in the following section.

### Future Research

In general, the fact that both dogmatic and tolerant user groups reported above-average mean values for U&G constructs show that active social media engagement can be expected from both these parties. However, further research is necessary to examine the ways in which (and platforms where) such gratifications are perceived. For instance, analysis of social media content that can gratify dogmatic and tolerant groups can reveal differences in social media consumption. Moreover, analysis of the composition of dogmatic and tolerant actors, interactions between them, and their information preferences on social media platforms can provide a more nuanced perspective to understand differences in social media uses and gratifications between these two groups. Future work should also explore differences between social media users within the same construct (e.g., differences in uses and gratifications between users with high and low political tolerance), and development of nomological networks that include political tolerance and dogmatism, as well as other factors, such as openness to experience, extent of social media use, and information preferences (e.g., entertaining, informative, political, educational).

The findings of this study are limited by the scope of the sample. Although the data used in the study were randomly collected by a professional agency from a general population representing Americans, more than 50 percent of our sample included university students (including graduate students). This may affect the findings of the study. Further work is necessary to examine the effects of education on dogmatism and tolerance levels on the perception of social media gratifications. Such studies can be conducted in light of the work done by previous studies, such as Bobo and Licari's (1989) work that examined effects of education on tolerance, by incorporating some measures (e.g., cognitive sophistication) that were found to mediate the relationship between education level and political tolerance. Moreover, further work should focus on modeling the moderating and mediating effects of political orientation and party affiliation on the relationship between political tolerance, dogmatism, and uses and gratifications. Our focus on social media platforms in general did not allow us to analyze differences in uses and gratifications between various social media platforms. This opens another line of future inquiry. The current social media landscape is highly dynamic, with popular platforms ranging from SNS (e.g., Facebook), video-sharing platforms (e.g., YouTube), microblogging platforms (e.g., Twitter), to platforms that enable exchange of messages that are removed after a certain time (e.g., Snapchat). Differences between these platforms demand platform-specific applications of the theoretical constructs and the analytical approach used in this study. Such work can reveal differences in social media uses and gratifications between platforms.

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