Congress, Constituents, and Social Media:
Understanding Member Communications in the Age of Instantaneous Communication

The Bush School
OF GOVERNMENT & PUBLIC SERVICE
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Congressional Research Service

About the Capstone Project:

This project is a collaboration between the Bush School of Government and Public Service at Texas A&M University and the Congressional Research Service. At the Bush School, teams of graduate students conduct collaborative applied research projects for client agencies. The research project is intended to enhance team members analytical and research capacity, while also equipping them with relevant professional and interpersonal skills.

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Executive Summary

Introduction: The rise of social media has generated major changes in political communication and how politicians communicate with their constituents. Social media has reduced costs, removed barriers, and obscured the lines between personal and political communication (Tasente, 2013; Skogerbø & Enli, 2017). The Congressional Research Service (CRS) has observed and evaluated the growing use of social media by Members of Congress and Congressional committees. The motivation for this research stems from the rise of client inquiries into how Members of Congress communicate with constituents through various social media platforms (TAMU CRS Contract #18-06). This report uses pervious empirical studies and analyses the data on the 115th Congress Members' use of traditional and modern communication tools to examine the strategies of congressional communication.

Methods: Using the three theoretical frameworks of Mediatization, Network Media Logic, and Media Richness Theory (Tasente, 2013; Daft & Lengel, 1986; Klinger & Svensson, 2015), the team seeks to answers three research questions. To further study Members' of Congress social media use, the team collected up to 40 qualitative and quantitative data points on each Representative; many of these points have come from Members' official websites. The team used this information to build a dataset and analyze trends found within the literature to hypothesize the trends of using traditional and modern forms of communication.

Results: Data analysis does not suggest that the use of traditional tools of communication influences the use of modern communications. Demographic information, such as age, tenure, political party, leadership position in chamber and Member's ideology matters to a greater extent in determining a Member's use of social media. Also, the number of communication staff does affect Members' use of modern and traditional communication tools and the size of their network.

Discussion: Analyses conducted on traditional and modern forms of communication do not fully align with previous research conducted. Despite ideological preference, Republican Members spend more on franking than Democratic Members. Designated staff who focus on communication may lead to an increase in traditional and modern communication use, as well as additional connections on social media. The personal brand of representatives matters in their communication reach via social media networks. Future research will need to be conducted in order to further explain the causality of relationships found through this research.

Key Terms and Acronyms

C-SPAN
A cable television network created by the American Cable Television Industry, whose goal is to provide access to live proceedings of the U.S. Congress (CSPAN.Org).

E-Communication
Electronic forms of communication such as email, Facebook, Twitter, Instagram, Skype, etc.

E-Government
The application of e-communication tools, practices, and techniques by government entities to provide goods and services to constituents, citizens, and individuals (Howard 2001).

External Communication
Communication sent to people outside of Congress, such as to constituents (Golbeck, Grimes, & Rogers, 2010).

Franking
The practice of allowing Members of Congress and official designees of deceased Members to sign mail instead of requiring postage to send official mail through the U.S. Postal Service (U.S. Congress).

General Population
Individuals who are currently living and inhabit the globe (Population, n.d.).

Geographical Constituents
Individuals within defined jurisdictions who benefit from political representation by elected or appointed officials of those same jurisdictions (Johnson, 2005).

Internal Communication
Communication from one Congressperson to another or between a Congressperson and a staff member (Golbeck, Grimes, & Rogers, 2010).

Mass Media
Mediums that allow information to be communicated to large audiences in a short period in time. (McCombs, M. E., & Shaw, D. L., 1972).

Political Communication

Political communication is any conversation or correspondence either in person, online, or in writing to any individual to influence political discourse (Golbeck, Grimes, & Rogers, 2010).

Traditional Communication

Communication before the creation and usage of the internet. This includes television networks, newspapers, magazines, and radio (McNair, 2017).

Social Media

Social media encompasses six distinct categories in which platforms are categorized including collaborative projects, blogs, content communities, social networking sites, virtual game worlds, and virtual social worlds (Kaplan & Haenlein, 2010).

Social Ties

The combined number of likes, followers, following, and other connections in each Member's official social media accounts (Myers et al., 2014).

Problem Definition

Historically, significant innovations including the establishment of the United States Postal Service, the invention of the telegram, introduction of C-SPAN, and the explosion of the Internet, have a ected the functioning of Congress. Not surprisingly, the emergence and quick adoption of social networks have spurred Congress to alter the way it operates as an institution and rethink how it engages the public (Shogan, 2010). In modern times, the near-universal adoption of internet-based communication methods have equipped both Congressional representatives and constituents with new opportunities to reach their goals. However, Congress still uses traditional forms of communication, such as franking, dear colleague letters, and floor speech opportunities to communicate internally and externally. In the run-up to the mainstream use of social media, identifying trends in the use of traditional tools of communication is one of the focuses of the research.

Social media has changed the methods of Congressional communication, and what Members emphasize when communicating. Currently, when Members of Congress have the option to use social networking sites and post links to their social media accounts on their o cial websites they often do so (Straus et al., 2013). Given the popularity of these platforms, communication from Congress can now reach a wider audience (Straus et al., 2016; Glassman et al., 2013). Members now use social media for both internal and external communication purposes. Externally, they use social media to interact with constituents, interest groups, think-tanks, and other interested followers. Internally, Members can use social media to send signals regarding current legislation to party leadership or for interacting with fellow Members. Overall, social media is utilized for branding, dialogue or mobilization purposes (Golbeck et al., 2010; Stieglitz et al., 2013).

Social media has removed barriers of communication and created a political culture increasingly focused on the personalities and personal traits of politicians (Skogerbø et al., 2017). More than ever before, the personal brand of representatives matters in their communication via social media (Cormack, 2016). Placing social media in a broader context regarding the changing nature of political communication and analyzing how the use of traditional tools of communication affects the adoption and use of social media networks are both critical objectives of the research.

The addition of social media to communication strategies creates advantages and opportunities to Members, as well as substantial operational and organizational challenges. The variety of communication tools available to Members' offices raises the question of how offices can use these resources effectively. Therefore, another objective is to equip CRS with findings to assist Congress in utilizing the opportunities created by current technology on social media.

The results of this research will assist the Congressional Research Service (CRS) in presenting accurate information to Members who will then be able to have a more precise knowledge base when forming their communication strategies.

Three research questions frame our analysis to achieve our objectives.

Research question 1: *Does the use of traditional forms of communication affect a Member's use of modern communication forms?*

Research question 2: *Does the number of communication-related staff in a Member's office affect their use of modern and traditional communication?*

Research question 3: *Does holding a leadership position in Congress influence social media ties?*

History of Political Communication

Political communication in the United States was occurring before the country was formally founded. Communication between delegates started in an organized manner with the First Continental Congress in 1774 (McGill, 2017). American founding father Thomas Jefferson stated that representatives had a right and duty to communicate with their constituents (Lipinski, 2004; Jefferson, 1797). The notion of representatives interacting with constituents is a hallmark of democratic theory. Congressional communications highlight that citizens are the ultimate source of authority for the government because frequent elections serve as safeguards against abuse (Dahl, 1956). Congressional communications uphold the authority of citizens because citizens require information from their government to fulfill their civic responsibilities. In Federalist No. 52, James Madison promoted the idea that the House of Representatives should be designed to have a reliance on, and compassion towards, the needs of the people (Hamilton, Madison, & Jay, 2009; Lipinski, 2004). Various perspectives exist on how this can be achieved.

Thomas Jefferson believed representatives should communicate with their constituents, but there are different perspectives on the extent of this role (Jefferson, 1797). These different ideas can be explored by examining the models of roles representatives can play in a representative democracy. There are two models of representation which influence how constituents and representatives view the role of elected officials; the trustee model and the delegate model (Aten, 2009). The trustee model of representation gives representatives discretion over their policy choices, even when those policy decisions do not align with the interests of their constituents (Aten, 2009; Fox & Shotts, 2009).

The delegate model of representation states that representatives should act strictly in accordance with the stances and wishes of their constituents (Aten, 2009; Fox & Shotts, 2009). In this model, representatives exist to represent the views of their voters directly and not for their leadership or decision-making capabilities (Aten, 2009; Fox & Shotts, 2009). Whether Members need to discern the views of their voters or convince them that their own actions are in the constituents' best interests, communication is required. Members' communication tools have changed consistently since World War II, as traditional methods evolved into modern forms. Changes can be grouped through three consecutive ages of communication with major developments in technology signaling the onset of another age.

Three Ages of Political Communication

There have been key changes in the culture and emerging democratic institutions which have shaped political communication in the U.S. and other parts of the democratic world over the postwar period. Scholars have identified three consecutive phases in the post-World-War II period which have influenced political communication. Each phase has its own organizing principles, characteristics, and influencers (Blumler and Kavanagh, 1999). Understanding the phases of political communication is crucial to contextualize when and how different media has emerged, and what forces have determined their popularity.

The First Age

The first age of political communication was characterized by strong political parties that had significant influence over political communication. This era took place during the two decades following World War II and was described as "the 'golden age' of parties" (Blumler & Kavanagh, 1999). Within the party-dominated communication system, scholars saw three unique features that most political leaders followed and used to advance their ideas and message; the first feature being that political leaders' messages were substantive and reflected the issues of perceived importance from the perspective of party leaders. Representatives were communicating what changes they wished to make in government and the principles and policies that distinguished them from their opponents (Blumler & Kavanagh, 1999). The second feature of this age was that Member's messages had easy access to the mass media of the time. Finally, voters responded accordingly with these messages. (Blumler & Kavanagh, 1999). This first age of political communication allowed political parties to flourish due to the conditions previously described. But following this period, conditions deteriorated, leading to the hypotheses of party 'decline' or even party "failure" (Janda & Colman, 1998).

The Second Age

The historical use of mass communication tools existed through the first political age, but changed significantly due to new technology that started the second age of political communication. The mass communication tools that already existed in the first political age of the postwar world included radio broadcasting, newspapers, the telegraph, and franked mail. Franked mail, which is still used and allows Members of

Congress to send official pieces of mail to individuals with their signature in place of a stamp through the United States Postal Service (Glassman, 2015), stems from the eighteenth century. The United States Congress first instituted the concept of franking in 1775, with official legislation regarding franked mail in 1789 (Glassman, 2015). Updates to the practice have occurred over the years and continue today with franking allowances still playing a significant part of budget allowances and traditional Member communication strategies (Brudnick, 2009).

As technology progressed with the introduction of mass media technologies political institutions were adopting and using it. More specifically, mass media technologies started with the introduction of the telegraph in 1837 (History, Art & Archives, 2018). The telegraph began under no specific regulation. In 1861, the House Judiciary Committee held its first hearing on telegram censorship during the Civil War to determine what could be communicated to the public (History, Art & Archives, 2018). In 1880, the telegraph was replaced at the Capitol building with the first telephone, which again revolutionized how Congress sent and received information (History, Art, & Archives, 2018). In 1921, radio was first broadcasted from Capitol Hill (History, Art & Archives 2018). Soon after, Congress passed the Radio Act of 1927 and established the Federal Communications Commission (FCC) with the Communications Act of 1934 to ensure the existence of fair competition and access to radio waves (History, Art & Archives, 2018). Each of these communication tools were used by Members to communicate with each other and their constituents, within the constraints of the time. The introduction of the television changed the relative importance of these communication tools and signaled the second age of political communication.

The introduction of the television defines the second age of political communication, as it changed the balance of power between politicians and the media. Television became the dominant medium for the spread of political messages, making the media no longer a subordinate to political institutions (Blumler & Kavanagh, 1999). Television significantly transformed the way political parties marketed themselves and forced the development of new tricks to reach their electorate. This developed the foundational features for the professional model of modern campaigning.

In this model, themes had to be presented, and politicians were discouraged from discussing their ideas. Instead, politicians spoke over issues that were predicted to have been acceptable in advance by experts (Blumler & Kavanagh, 1999). The importance of television led to a diversification of journalistic formats including flashes and inserts, formed bulletins, a range of public affairs formats, and 24-hour news services (Blumler & Kavanagh, 1999). One of the most significant changes from the adoption of the television was an enlarged audience (Blumler & Kavanagh, 1999). The introduction of television allowed the public the ability to see and hear committee meetings at the House and Senate with the passing of the Legislative Reorganization Act of 1970 (Legislative Reorganization, 1970). Twenty-six years later, the Telecommunications Act of 1996 was tasked with guaranteeing competition in the telecommunications market, as

well as being the first time that the Internet was included with broadcasting (Bertot, Jaeger & Hansen, 2012). The emergence of the internet and the adoption and usage of internet-based communication, marks the third age of political communication.

The Third Age

The third political age extends to the present, continuing to grow, and includes a variety of communication methods and platforms which have emerged with the creation of the internet. While mass communication tools before the internet are now considered traditional media, platforms that emerged after the creation of the internet, are considered new media.

In the third age, political communication involves multiple television channels, radio stations, cable and satellite technology, where signals become digitized. The amount of equipment utilized for the spread of political communication to the public has increased and includes two important tools, computers and smartphones. The forms in which political news, information, and ideas can be circulated through the internet on the computer and smartphone has diversified, with examples including; first-hand reports of events, personal narratives, conversations, commentary, opinions, archives, spatial and temporal information, and lifestyle and consumption behavior (Blumler & Kavanagh, 1999). All of which may be expressed in textual and audiovisual forms (Chadwick, 2009). Offering a new and broader array of choices for constituents to undertake an act of communication with the government, the internet gave citizens easier access to governmental affairs (Bimber, 1999).

Social media platforms have become synonymous with the third age, and are a resource for business executives, decision makers, and the general public alike (Kaplan & Haenlein, 2010). Social media encompasses six distinct categories in which platforms can be categorized including collaborative projects, blogs, content communities, social networking sites, virtual game worlds, and virtual social worlds (Kaplan & Haenlein, 2010). The social media platforms most used by political leaders are Facebook, Twitter, and Instagram. These platforms are categorized as social networking sites because they allow users to create a profile with personal information. Users can invite friends and acquaintances to gain access, developing another channel of instant communication between each other to solidify (Kaplan & Haenlein, 2010).

Due to these factors, social networking sites have become increasingly popular among political leaders throughout recent years. In January of 2013, all 100 Members of the United States Senate had a registered official Twitter account, while nearly all Members of Congress had a least one official social media account (Straus & Glassman, 2016). This rise of social media use among citizens has encouraged political leaders to adapt the ways they communicate with constituents to changes in the political and technological spheres.

The evolution of political communication over time indicates that the role of media, in relation to other institutions, has risen and politicians as well as political institutions, are increasingly dependent upon it. As Members of Congress continue to utilize traditional forms of political communication, they have adapted to new media and integrated it into their communication strategies to communicate internally and externally.

Legislative Framework of Congressional Communication

As the institution of Congress is wont to create reactive policy, the laws and guidelines surrounding how Members and their staff use various methods of communication reflects this inclination. This, in turn, has a profound impact on how Members choose to formulate their individual communication strategies. There are currently several different laws and guidelines surrounding the fair, ethical, and appropriate use of Congressional communication channels. They are, however, currently outmoded and were created as a solution to the problems of the day and not as a framework to handle the future.

The main legal frameworks which govern Congressional communications today are the Honest Leadership and Disclosure Act, the E-Government Act of 2002, the *House Ethics Manual* and, the *Congressional Members Handbook*. The first major legal change to Congressional communication in the modern era was the E-Government Act of 2002. Before the E-Government Act of 2002, there were no frameworks that codified how government agencies were intended to communicate agency-wide information using the internet, or how to make government information easily accessible for citizens. There were also security and privacy concerns that developed as government employees began using the internet. Some Members of Congress did not have separate email addresses for their private and professional business, which created concern over the potential intermingling of private and professional emails. There are two major regulatory frameworks designed to address some of these issues.

The E-Government Act of 2002 was the first of these two frameworks, and it focused on giving the American public greater access to governmental affairs through the use of digital resources. It mandated the creation of the Federal Information Officer in the Office of Management and Budget. The Honest Leadership and Open Government Act (HLOGA) was the second framework put in place to deal with the conflict of interest created by the adoption of the internet. The HLOGA overhauled federal reporting policies regarding lobbying and associated lobbying activities. The new law made important changes regarding what constitutes a reportable contact between lobbyists and Congressional staff members, and who qualifies as a lobbying professional. The Honest Leadership and Open Government Act also made sweeping changes to the House and Senate ethics rules. The revised rules made it more difficult for lobbyists to gain access to Members of Congress, while also making it more difficult for Members and staffers to become lobbyists (Honest Leadership and Open Government Act, 2007). These changes deeply impacted how Members and staff could communicate with identified lobbyists. These conflicts of interest are also brought up in

the *House Ethics Manual* and the Members Congressional Handbook, and provide guidelines and remedies to certain situations.

 The *House Ethics Manual* and the *Members Congressional Handbook* provide the main guidelines regarding the regulation of Member communication. The manual outlines the expectations of communication content, mainly as it relates to the campaigning and elections process. Official Member websites, including their social media pages, must be separate from the official campaign websites to avoid violating House ethics. The main way that the House of Representatives seems to control Member communication is through the control of reimbursements. If Members do not follow the guidelines for different circumstances, such as how to properly advertise official town halls, they will not be eligible for fund reimbursements. There are guidelines found within the Member's Congressional Handbook concerning the appropriate usage of radio, printing, television, town hall venues, and other mediums for different situations that could arise during the governing period as well.

 The current laws relating to Congressional communication focus on ensuring that Members ethically use current platforms and separate their personal, campaign, and official accounts. The *House Ethics Manual* defines staff time as an official resource of the House, indicating that any social media account that staff works on is considered an official resource (Straus & Glassman, 2016). This can be difficult to execute due to the nature of social media. Determining if a Member's social media presence is being used as an official statement, an attempt to interact with constituents, or an information gathering expedition can be difficult. Research has found that Members use social media more to issue statements and provide information rather than as an information source (Straus and Glassman 2015). Members' use of social media still reflects one-way communication rather than the two-way communication tool as originally promised at its advent (Keller & Königslöw, 2018).

Literature Review

Members communicate with their constituents to further their political agendas, while constituents use communication tools to take part in the government process. As participants of political communication, Members of Congress and constituents utilize both traditional and new forms of communication. Traditional forms include face-to-face communication, letters, television, and newspapers, while new forms include e-communications such as email and social media. This change of communication tools has required Members and constituents to have a better understanding of how political communication occurs. Political communication is a planned and clear message with a political purpose, initiated by those who are acting under a power of authority (Tasente, 2013).

Examining how Members of Congress and constituents use different forms of media is imperative to understand how Members manage communications both internally and externally. Internal communication occurs from one Congressperson to another or between a Congressperson and a staff member (Golbeck, Grimes, & Rogers, 2010). The purpose of internal communications is to share information and gain support among other Members.

External communications are those that are sent to individuals outside of Congress, such as their constituents (Golbeck, Grimes, & Rogers, 2010). External communications for Representatives increase the support from their constituents for policy stances and for themselves. External communications also allow constituents to have their voices heard by their elected officials, making them an active participant in government. This literature review will explore how Members communicate internally and externally.

The literature review is divided into three thematic sections. The concept of political communication will be defined and discussed in depth. Examination of this core concept is followed by the study of the relevant theoretical frameworks. This analysis helps to explore the changing nature of political communication, observe multiple models of communication, and understand how technological advancements have affected political communication. Finally, major benefits and challenges of social media and its use by both politicians and constituents within the scholarly literature are presented for consideration. Expanding the existing knowledge base regarding political communication through the exploration of how Members of Congress use technology to further their communication strategies is the motivation for this research. Understanding how Members communicate starts with conceptualizing political communication.

Defining Political Communication

As Members of Congress work to enhance the ways they communicate, the available platforms have changed and continue to evolve. This evolution has incentivized Members to transform and improve their strategies to fit with the present. As the political communication environment continues to change, so does the population's access to information, their opportunities to engage in public speech, and their ability to undertake collective action (Shirky, 2011). Therefore, political communication has been conceptualized in a variety of ways.

Multiple definitions surround political communication, each with the intention to describe the ways politicians share information in hopes of influencing policy. While it could be said to be a real discussion about the allocation of public resources, official authority, and official sanctions, there is a need to address communication forms beyond just discussions (McNair, 2017). Political communication should include aspects such as the construction, sending, receiving, and processing of messages that potentially have a significant direct or indirect impact on politics (Graber, 2005). Additionally, senders and receivers of these political messages are not limited to politicians and media, but also include interest groups, unorganized citizens, and journalists (Graber, 2005). It is crucial to understand that political communication, in terms of the work of this project, does not only focus on the rhetorical aspects. It also encompasses understanding how political communication shapes the relations between major political actors and how those involved in political actions communicate amongst themselves, with constituents, and between constituents. To frame these aspects of political communication, we created our definitions based on the literature.

The following definition is the working definition that will be used throughout the rest of this work: Political communication is any conversation or correspondence either in person, online, or in writing to any individual to influence political discourse. This definition has guided our work and has allowed us to better analyze and expound on scholarly discussions. This definition of political communication has greatly assisted in the framing our research and understanding the three theoretical frameworks which provide a lens to interpret changes in political communication at three different levels.

Guiding Major Theoretical Frameworks

Our research has been guided by three major theoretical frameworks regarding political communication; mediatization, network media logic, and Media Richness Theory (Tasente, 2013; Daft & Lengel, 1986; Klinger & Svensson, 2015). These theories explain overarching trends in political communication, the inherent differences between communication platforms, and the capacities of different tools to carry a message

between communicators. More specifically, the process of mediatization illustrates general trends regarding which group has the most influence in the process of communication: media organizations, politicians, or the populace. Network media logic describes both a path of influence from one group to another and how communication occurs on different platforms. Media Richness Theory helps outline the tradeoffs between the different types of communication that can be utilized on communication platforms. In the context of Congressional communication, this tiered system will be used to understand and interpret how Members communicate, and their effectiveness at the theoretical level. The theory of mediatization will serve as the general framework to connect to both the framework of logics and to Media Richness Theory.

Mediatization & Decentralization

The mediatization of politics is a process of changing control and influence between politicians and the media. The process of decentralization transfers some control away from politicians and the media to the general public. A general definition of mediatization is the process of social change brought on by an increase in the influence of media in different spheres of society (Strömbäck & Esser, 2014). Media, in the context of mediatization, refers to mass media outlets including, radio, TV, and newsprint organizations. Mediatization of politics and political communication, specifically, can be defined as the process of political institutions and actors becoming increasingly dependent on the media, requiring them to conform to the media's production and distribution norms (Splendore & Rega, 2017). This process, however, does not only go in one direction and the influence of the media may regress as politicians attempt to regain power. They do this by utilizing news management and political marketing, usually taking the form of 'spin', to get their message across and control the narrative (Brants & Voltmer, 2011). Understanding the framework of mediatization as a four-phase process provides insight into the evolving relationship between political actors and the media (Strömbäck, 2008).

Over the four phases, control and influence shift from politicians to media organizations. In the initial phase, the media becomes the most important source of information and the primary channel of communication between constituents and political actors. By the final phase, actual reality matters less than the reality created by the media, so the media gains influence over politicians and encompass the political sphere. This last stage means politicians visualize the world through the lens of the media and internalize media norms and rules in the form of the media's logics. A media's logic is the underlying structure and norms that can be used as a lens to understand events and ideas (Strömbäck, 2008). The importance of media logic builds through each phase of mediatization as mass media organizations gain additional influence over society.

The degree to which mediatization of political institutions and actors have occurred can also be characterized along four dimensions. These dimensions include how dominant the media is at providing political information, the independence of the media from politicians, and to what degree the media is governed by political or media logics (Figure 1) (Strömbäck, 2008). The more independent mass media organizations are from political institutions, the greater the need for outside funding, which grows the influence of commercialization and need for subscribers. This can correspond to oversimplification of political issues, focusing on trivial matters in politics, and emphasizing conflict to change news into entertainment (Maurer & Pfetsch, 2014). Politicians will try to regain control of the narrative and policy agenda, which is a characteristic of the third phase of mediatization. Politicians will try and use news management and political marketing to achieve these ends. Important for both a political actor's ability to influence the policy agenda and for mediatization is a political actor's image.

A political actor's image can aid in controlling a story or message, including outside of electoral campaigning. A politician's 'image' can be defined as how they present themselves to their constituents and to a wider audience in face-to-face interactions or through the media (Archetti, 2017). Their image is shaped by relationships that grow both from their use of social media and by advancing within their organization where they can internalize part of their organization's image. Image is important primarily to popular politicians in higher offices, including Members of Congress (Archetti, 2017). Popularity is both a principal of network media logic, in the spread of information, and media richness theory, as popularity or celebrity can be enhanced or maintained by sending messages that have multiple communicative cues (Dijck & Poell, 2013; Tanupabrungsun & Hemsley, 2018). Popularity, in this context, can be described as the number of views an individual receives or the number of times a message is shared throughout a network. Both principles will be elaborated on in subsequent sections. Popularity is especially important in social media, which mediatization does not fully consider.

Mediatization is primarily applied to traditional mass media because they are organized more as institutional actors with specific goals. Social media with its significant variation in formats and audiences among platforms does not have this cohesion (Strömbäck & Esser, 2014). Scholars have discounted social media because most of the material that reached a wider audience was repackaged content from journalistic sources while only a limited audience saw original material developed on the platforms, not using journalistic standards (Strömbäck, 2008; Klinger & Svensson, 2015). This means that social media's influence was based on traditional media. This assumption is no longer utterly valid as elite bloggers, platform algorithms, and user interest also can spread non-journalistic information to a wider audience (Dijck & Poell, 2013). The dispersion of power from the political and media elites, inherent in this point, is captured by the concept of decentralization (Brants & Voltmer, 2011).

Decentralization provides an additional dimension for political communication that complements mediatization as an overarching framework. Political communication can be characterized by both horizontal and vertical dimensions. Direct communication between citizens and either the political or mass media elites can be thought of as the vertical dimension of political communication with changes being conceptualized as decentralization (Brants & Voltmer, 2011). The horizontal dimension describes the relationship between mass media and political actors through the framework of mediatization. With the growth of the internet, citizen's ability to question the credibility of the elite's communications and influence the discourse on certain policy or issue debates has grown, shifting influence away from the elites (Tasente, 2013).

This change in the role of citizens in political communication was not fully considered during the early efforts to define mediatization and was dismissed in the early 2000s as the influence of social media was continuing to grow (Stromback, 2008; Strömbäck & Esser, 2014). As social media transfers influence from political and media elites to the public, they develop their own smaller groups of like-minded individuals where some viewpoints can be heightened. This creation of echo chambers during the connection of like-minded individuals is part of network media logic (Brants & Voltmer, 2011). While mediatization signals the importance of mass media and mass media logic in political communication, it is decentralization that provides the basis for the importance of social media and network media logic.

Media Logics

The concept of 'media logic' refers to the media's role in society as a lens for understanding and acting upon events and ideas (Altheide & Snow, 1979; Klinger & Svensson, 2015). Logics are the "rules of the game of particular media" (Klinger & Svensson, 2018: 4). The two primary logics for Congressional communication are mass media logic and network media logic. In terms of Congressional communication, understanding the concept of logics can assist Members with their communication strategies. Logics provide a lens to see possible outcomes from the hybrid media systems that have emerged with the interaction between social media and traditional media. Dividing both logics along three major steps in communication will illustrate the difference between the two while providing useful information on Congressional Communication (Klinger & Svenson, 2015).

The structure of communication processes by mass media and social media platforms influence what information is distributed and to whom. For this project, platforms are spaces where information can be created and distributed. A short synopsis of the differences between mass media and social media within the production, distribution, and consumption of information can be found in Figure 2 in Appendix 1. Many of the significant differences occur due to the networked nature of social media

platforms. Users can be characterized as nodes linked to other nodes or users to form a complex and dynamic system (Klinger & Svenson, 2015).

In social media, information simply needs to be interesting rather than meet the higher quality standards of the professional producers of information in mass media. Since amateurs can produce information on social media, the cost is low, and the commercial imperative focuses on being interesting to users rather than meet the 'newsworthy' criteria, required by mass media who must maintain their audience (Dijck & Poell, 2013; Klinger & Svensson, 2018). For Congressional communication, this means that communication through mass media will need to coincide with mass media's view of what is important for their audience given their need to maintain subscriptions or advertisement views. Communication on social media by Members needs to interest users enough for them to spread the information beyond the network.

How information is produced and distributed changes who can see the information. The centralized distribution of traditional mass media allows targeting of the general public in a geographic area, while this is impossible in social media. Members need to use mass media to reach their constituents and the general public. Social media messages do not reach the general public as they are distributed within a user's network of followers who are self-selected. Messages do not usually reach beyond their network because the success of spreading a message is based on each follower's reaction (Keller et al. 2018). Information can only be spread virally by the continual interest of followers and their action of 'liking' or 'sharing' information. Viral distribution can enter a positive feedback loop as the impact of each 'like' or 'share' can have a greater impact.

This viral spread can be assisted by elite or popular individuals, who act as catalysts, increasing the visibility of content due to the personal interest aspect of the distribution (Enli & Simonsen, 2018). A Member's messages via social media will only be seen by those that follow them, unless the message goes viral. In this case the message will be seen by a variety of people that may or may not be their constituents. This characteristic of social media can be used to expand interest across the nation for issues that a Member finds important. While all Members have access to social media, the impact depends on their popularity (Keller et al. 2018). How fast information is able to spread, if at all, is due to the algorithms of social media that help connect users and spread information along their networks.

Algorithms permit social media and the associated communication networks to exist. Algorithms are problem-solving technologies consisting of inputs, outputs, and codes that describe both the calculations used and what goes into them. They influence what information reaches users based on criteria chosen by their programmers (Klinger & Svensson, 2018). Because they are shaped by their programmers, they are not a replacement to network media logic. Algorithms can be seen as both the process and rules of a platform, in the context of network media logic. Algorithms steer information and user traffic, automate user to user connections, and create differentiated attention

possibilities for users, which highlights the importance of popularity, connectivity, and programmability of social media (Dijck & Poell, 2013). Each of these effects are part of network media logic in either the production, distribution, or consumption of information. Algorithms influence what users see on their social media accounts, and whether their posts appear on other users' news feed. Elements that influence what algorithms show users include (Agrawal, 2016): How often a user interacts with a specific type of post; How often a user and other users hide posts; The amount of engagement that pages and posts receive; The level of performance that post have received from viewers. These elements are important because when a constituent likes or follows a Representative, they will be shown more content that each algorithm finds to be relevant to their interests. Algorithms in this context, are seen as the rules of social media platforms.

Understanding the rules, constraints, and strategies behind different modes of communication are important when trying to comprehend how Congressional communication is being influenced by the platforms they choose to use. Recognizing the variation between platforms is important, but so too is understanding the trade-offs of the different mediums used for communication. The ideas contained in media richness theory provide this understanding between different mediums such as hashtags, posts, or emails while connecting back to network media logic and mass media logic.

Media Richness Theory

Media richness theory applies to the micro level of communication, while also connecting to the theory of logics. The theory originally focused on reducing uncertainty and ambiguity in corporate communication to increase efficiency within the system while also explaining the variation in impacts of different types of media (Daft & Lengel, 1986). A message can be categorized as either rich or lean media, based on its ability to change a person's understanding over a given period. Rich media provides more communicative signals and faster feedback to the communicator, helping to reduce ambiguity, while lean media has fewer cues and can limit uncertainty (Ferber et al., 2005; Brinker et al., 2018).

Communicative cues include facial expression, tone of voice, and body language (Tanupabrungsun & Hemsley, 2018). Rich media includes conversations face-to-face or over the phone. Emails, letters, and other print media are primarily considered lean media. Richness can be measured by four criteria including the natural language used to convey broad concepts, the number of communicative cues, the speed of feedback, and having a personal focus (Brinker et al., 2018). Using this categorization, it is found that richer media may aid in providing context to issues, which can help people grasp specific facts. Providing context aids in the delivery of easily misunderstood messages which can help maintain an individual's popularity or enhance it (Tanupabrungsun & Hemsley, 2018).

Managing popularity for different groups of users and across social media platforms requires understanding the platform's affordances. Affordances are the set of options available to an agent based on the characteristics of a technology and their own capabilities (Comunello et al., 2016). As affordances are connected to the properties of social media platforms, they are part of the underlying structure and its logic (Dijck & Poell, 2013). Popularity can be described as the number of views and reactions an individual receives or the number of times a message is shared throughout a network (Dijck & Poell, 2013; Tanupabrungsun & Hemsley, 2018). Rich media has the ability to help maintain Members' popularity.

The concept of richness can be divided into separate dimensions that correspond to groups of affordances and can be used by elites to gain or maintain an audience (Tanupabrungsun & Hemsley, 2018). On Twitter, hashtags can be an affordance in the *contextual* group allowing users to categorize their message, putting it in the context of a larger dialogue. The *interactional* grouping includes tagging or mentioning on Twitter, helping users to become part of a dialogue, indicate interest in a topic to an audience, or amplifying a message. *Informational* grouping includes the embedding of photos, videos, or website links in a post to increase knowledge or develop a certain viewpoint (Tanupabrungsun & Hemsley, 2018). These three groups combined indicate the richness of a message.

Different types of celebrities emphasize the three dimensions differently to maintain an audience depending on who is included. Understanding the affordances of each platform can benefit politicians as they seek to expand their networks by increasing their popularity. For this project specifically, media richness theory also provides a model to classify communications based on a set of characteristics that can provide insight into the goals of Congressional communication.

A tiered structure of theories, frameworks, and models provides insight at each level of political communication. Mediatization and decentralization assist in understanding which groups have power and the ability to influence others, including the imposition of certain logics. Network media logic provides insight into the reason for political communication and further emphasizes the importance of understanding the structure and incentives of different platforms. Media richness theory provides insight into the tradeoffs of different types of communication mediums. The structured framework will be beneficial for both the Congressional Research Service and Congress in understanding and framing general and specific trends in the mass media and social media over time.

Models of Political E-Communication

The government has developed a variety of ways to communicate with the public using the internet, which can be characterized using different models. Five different models of communication that show importance to how Members communicate

include: the open government maturity model, the managerial model of interaction, the consultative model, the participatory model, and the push/pull/networking model. The nature of social media opens the government up to potential risks and uncertainty (Picazo-Vela et al., 2016).

The Open Government Maturity Model (OGMM) helps mitigate this risk. Within the model, there are five levels: initial conditions, data transparency, and open participation, open collaboration, ubiquitous engagement (Lee & Kwak, 2012). As agencies move from one level to the next, they can engage more with the public increasing greater value and positive opinions of government (Lee & Kwak, 2012). For there to be an open and transparent government, citizens and agencies may have to change some behaviors. In a Member's case, to move up the scale to higher engagement and trust, Representatives have to change certain online behaviors. The first level of the OGMM is the bottom of the scale.

Through the five stages, the role of citizens increases, and trust is built. In the first stage of initial conditions, social media is not used, and only limited data is provided to the public; opaque. At this point, government websites are not as often visited by the public as there is no buy-in and some cynicism of government. In the second stage of data transparency, the government is starting to become transparent through the publishing of some, but not all, available data. In the third stage of open participation, the government allows and welcomes input from citizens. This stage comes in the form of public feedback, voting, and interactive communications. In the fourth stage of open collaboration, the public can help make rules and form policy. At the fifth stage of ubiquitous engagement, government expands the scope to which citizens can participate. (Lee & Kwak, 2012).

As agencies move from one level to the next, they open themselves to the public, but also greater challenges and risks. When the government's use of the internet started in the 1990s, the main issue was whether government was accessible online. The issue today lies in what forms and to what consequences e-communications are being used (Alperin & Schultz, 2003). It is argued by Chadwick and May that there are three models of interaction between representatives and citizens when governing with the help of the internet: the managerial model, the consultative model, and the participatory model (Chadwick & May, 2003).

The three models of interaction mimic the OGMM as each stage, or the model increases the influence of citizens. In the managerial model of interaction, e-communications are seen as an improvement on previous technologies rather than anything revolutionary (Chadwick & May, 2003). Any public services affected by e-communication will continue much as they did before but with more efficiency in speed and cost. This is done without necessarily improving the quality of the information provided (Chadwick & May, 2003). This is done by removing communication wait times and other time inefficiencies that have been a major concern for citizens. E-communications have challenges and opportunities for communication to be held

within and outside the government, but how government operations function is unaltered based on the managerial model (Chadwick & May, 2003).

The second model is the consultative model which explains the facilitation of communicating citizens' opinions to government (Chadwick & May, 2003). This model says that the information shared can provide better policies and better government administration (Chadwick & May, 2003). This model also shows that e-communications have the potential for greater democratic participation and could be a step to toward developing e-democracy or a more direct democracy (Alperin & Schultz, 2003) (Chadwick & May, 2003).

The participatory model attempts to demonstrate how e-communications have opened up new complex communications networks (Chadwick & May, 2003). The participatory model stresses that technical limitations are now nonexistent because e-communications have finally made it possible for large amounts of citizens to participate in policy making (2003). This theory furthers the argument that embracing new communication technologies could move the citizens of the United States and other representative democracies towards becoming more participatory in their government.

Both e-communications and the internet can enhance the democratic processes that are already initiated, and increase the political power of those who normally have the smallest roles and the least power in the political process (Chadwick & May, 2003). This assumption that new technologies bring "new people into power, rather than granting additional power to those who are already empowered" has been proven largely to be ineffective in moving the United States towards a more direct democracy using the internet (2003). Having a larger number of individuals involved in the political process with more information can also lead to misrepresentation of information by government officials (2003).

In the Push/Pull model, government uses the ideals of representation, engagement, and networking to push the desired messages to citizens and gather, or "pull," ideas from the people. In some instances, e-government is merely intended to push information to citizens with very little to no emphasis on pulling information back from the public (Picazo-Vela et al., 2016). For example, when a government agency sends an informational tweet or email out to the public. The goal of the tweet or email is normally to disseminate information, not to garner a response. Engagement is where a citizen pulls in a two-way conversation and is much more difficult to achieve (Picazo-Vela et al., 2016). To create a space where engagement between government and citizens can occur, there must be an opportunity for dialogue between government and citizens. Current research indicates that, at least on social media, "pull" still does not occur (Jackson & Lilleker, 2009; Keller & Königslöw, 2018).

E-communication may not have fulfilled its potential, but e-governance can still have an impact. Howard (2001) tells us that e-government is the formal utilization of electronic commerce tools and techniques by government agencies in order to provide services to citizens. Based on this definition, applied e-government provides an

opportunity for dialogue. Networking allows for a conversation to be held between multiple stakeholders and government (Picazo-Vela et al., 2016). Government agencies and officials can look at what citizens, business, non-profit organizations, and others post to their social media websites and gather data for future policy. For instance, if there seems to be more posts or tweets regarding social issues, agencies can choose to prioritize these concerns. Agencies and Representatives can use these models to communicate with stakeholders to gauge what needs to be discussed at their level of government. Citizens who hold some interest in the issue at hand and want to voice their opinions can use social media platforms to voice such opinions. Representatives can then respond and address their concerns and gain more understanding of their stance on the issue.

Congress and the Emergence of E-Communications

As technologies evolve and more people use the internet as a tool, government officials have adapted to connect and stay relevant through representation, engagement, and networking (Mergel, 2013). The number of internet users increased to 44 million in 1995 and 413 million in the year 2000 (Shirky, 2011). President Obama's Open Government Initiative investigates three key influences on government social media adoption, usage, and what effective adoption looks like with two models of adoption strategy.

This initiative provided Congress with a guide to become more transparent and collaborative, and allowed for greater participation and communication between Members (Mossberger, Wu & Crawford, 2013). The Open Government Initiative provided agencies the independence to develop strategy on how they would increase openness and public engagement (Lee & Kwak, 2012). These strategies and the push to communicate more publicly with constituents are assumed to create a greater sense of trust.

The use of the internet was a priority for Congress when Newt Gingrich became Speaker of the House in 1995, pledging to make every amendment and conference report publicly accessible online. Gingrich and many other people thought that the addition of computers and the internet would lead to a transformation in politics (Alperin & Schultz, 2003). Congress started to utilize e-communications by providing information to constituents through websites and by giving every Member an email address to communicate internally and with their constituents. This was meant to make it easier for citizens to share their views with representatives and lead to the creation of an open and responsive government. For the government to be open and responsive, it would need to provide full information.

A significant benefit of having complete access and full information is that it would allow representatives and constituents to know that their voices, concerns, and opinions are heard since they are able to access and engage in the same space. The fact

that Congress has been using e-communication since the 1990s has allowed researchers to explore whether the adoption of e-communications has fostered an environment with full information (Alperin & Schultz, 2003).

Scholars argue that e-communication provides a platform for information to travel, but this capability does not guarantee the flow of information. Representatives are using e-communication platforms to control what information is being sent to constituents, not for the provision of full information (Cormack, 2016). Furthermore, during the adoption of social media, representatives picked the information shared with constituents on platforms, in stark contrast with the original intent of facilitating transparency. Therefore, representatives are picking out information to further their goals (Alperin & Schultz, 2003; Gulati, 2004).

The information picked out and highlighted includes current stances on issues, votes that they would like to underscore, and actions being taken to garner support from their constituents and other representatives, most of whom are from their own party (Cormack, 2016; Gulati, 2004). The information that representatives are highlighting is largely based on the groups of voters that representatives are trying to persuade. The information being sent appears to be ideologically aligned with particular constituent groups critical to reelection (Cormack, 2016). If a smaller group of constituents is their base, the probability that representatives will be providing more extreme ideology also increases (Cormack, 2016). By adjusting information provided based on groups of voters, this strategy is withholding the full voting histories of representatives and their actions, denying voters full information, leading to less than anticipated benefits.

Anticipated Benefits of the Use of Social Media

Members have spread their presence online to a variety of social media platforms. To best represent themselves, politicians and institutions require a presence online. Examining the links from Member webpages to social media accounts provides a glimpse into the type of social media Members are using. The most common platforms are Facebook and Twitter, followed by YouTube, RSS feeds, Flickr, and Instagram. One-third of Members had links to these platforms (Straus, 2018). By 2010, 92% of both major party candidates for the U.S. House had created a campaign website and over three-fourths of the candidates had adopted the larger social media sites such as Facebook, Twitter, and YouTube (Gulati & Williams, 2013). Twitter, Facebook, and other social media platforms have become a central piece of political communications strategies for both, campaigns and during governing periods. Twitter and Facebook are now ubiquitous in Congress (Gulati & Williams, 2013; Straus et al., 2016).

Mainstream adoption of social media has caused some changes, mainly perceived to be beneficial for political communication. Namely, social media removed the barriers of communication and transformed it into horizontal communication when the line between producer and consumer of information is blurred. Also, private life has become

political - the line between where personal space ends and public starts becomes more and more blurred. This trend is notable not only in individual-centered political cultures but in party-centered political environments as well. Most importantly, social media adoption has significantly reduced costs (both, time and money) of political communication.

Reduction of Time and Money

Social media does allow Members' to save time, which is a major benefit. Social media does not accomplish this by replacing traditional media; it does this by repacking it to make the information more accessible, acceptable, and appropriate (Mergel, 2015). While journalistic sources from mass media still hold significant influence, newspapers such as the New York Times and the Washington Post now have a social media presence (Strömbäck, 2008). Readers now have access to information as long as they have an internet connection, and writers now have a global audience bounded only by interest and connection. Content can happen as quickly as events arise, and as quickly as writers can synthesize. Government representatives can use these changes in communication to save time and operate transparently, which saves on operating costs.

Linder (2012) suggests the government's adoption of social media can be found through a need to promote innovative ideas on a budget. Social media costs significantly less than paying for ad space in a print publication or air time on television or radio. There is also greater access to the public as most platform sites are free to their users. Social media can reach a larger audience, as well, but not a mass audience (Klinger & Svensson, 2015). For these reasons, government agencies use social media to replicate the information that is already available and point citizens into the direction of more information, something which presents challenges when done through traditional media (Mergel, 2015). This change from traditional to modern media created a space and potential for greater political discussion between constituents and the government.

Fostered Political Discussion

Research examining the internet as a source of political information and as a place to display public expression reveals that online media complements traditional media to help further political discussion and civic messaging (Shah, Cho, Eveland, & Kwak, 2005). The research shows that media consumption and interpersonal political discussion on and offline play a critical role in civic engagement (2005). What is currently not being adequately discussed in the literature is the possibility that e-communication technologies may not be making political communication easier (Papacharissi, 2002).
The argument that the internet has not created more avenues of communication could be contributing to the impression that e-communications are broadening our abilities to

communicate overall, without sustaining the characteristics of traditional communications. (Shah et al., 2005). Research has not been narrowly focused on how traditional communication strategies merge with and utilize new technologies to gain new information and gather the opinions of representatives and constituents (2005). Most of the current research has focused on how individuals and organizations are using e-communications and the extent to which it has improved communications strategy. Current research does not seem to be as focused on the ability of e-communications to improve the delivered content compared to the content that would be delivered using only traditional communication (Johnson & Kaye, 2000).

However, research by Shah et al. has found that searching for information online and utilizing e-civic messaging strongly influences civic engagement compared to traditional communication (2005). This research cannot downplay the role of traditional communication because they did find that online and offline communication channels do end with civic participation (2005). Getting political information in a newspaper about a candidate or online from their website both display information seeking that results in encouraging civic engagement (Johnson & Kaye, 2000). It is worth noting, that although both display behavior that results in civic engagement, digital engagement does have more of an influence it would seem.

This influence has been manifested in several different ways. The openness of social media platforms facilitated the emergence of online forums (Loader & Mercea, 2011, p. 757), which equipped citizens and institutions with new tools and opportunities for political participation. In a new, virtual public space, "citizens are no longer passive consumers of party propaganda, government spin or mass media news, but are instead actually enabled to challenge discourse, share alternative perspectives and publish their own opinion" (Loader & Mercea, 2011, p. 759).

Notable example of how social media enabled massive engagement of citizens in political process are so called "Twitter revolutions". Social media gave users effective tools, which were successfully used for mobilization and self-organization. In 2009, after general elections in Iran, protesters in the country and around the world, used twitter hashtag "IranElection" to unite their efforts against the reelected political establishment (Stieglitz & Dang-Xuan, 2013, p. 6). Similarly, the cases of Egypt, Tunisia, Libya and Yemen, the so called "Arab Spring" added to the discussion and emergence of the powerful role of social media networks in effectively facilitating political dissent and mobilizing/engaging the wider public to address political conflict and suppression (Christensen, 2011).

Reduced Barriers of Communication

The advent of social media and the internet has shifted the balance of power towards citizens, through more open communication among themselves and representatives. Political communication is now characterized as an interactive process on two levels: vertically (from representatives and the media to citizens) and horizontally (among same tier - representatives and institutions). The horizontal dimension refers to the relationship between media outlets, institutions, and politicians. The vertical dimension constitutes sending the political message from main actors of the political communication - journalists and representatives - to ordinary citizens (Tasente, 2013).

By transforming to include a horizontal and vertical dimension, political communication has decentralized, removing barriers for constituents and representatives. This era is referred to as the "third phase of development of political communication systems" or "postmodernism". It has two major implications, first is that political messages are discussed in social groups without going through the mass media channels, becoming "online political citizens". They redistribute political message and broaden the messages reach to wider social groups. Second, social media's design has led to the creation of "citizen-users" (Brants & Voltmer, 2011). This group can be defined as the growing number of constituents, who actively and freely engage in political discussions on social media networks. As a result, they become opinion makers and influencers in the social media space. Political elites have transformed their communication strategies to accommodate social media, with a further reliance on their personal image (Tasente, 2013).

Social Media Personalizes Communication and Builds Image

Social media spurred the ongoing process when political communication has become increasingly focused on personalities and personal traits of politicians (Skogerbø & Enli, 2017). From this we see an increasing need from representatives to share not only their public image but also personal and private lives. Social media has directed the public's focus to individual representatives, rather than the political organization. A Member's personal image and having a personalized message can help them achieve three main goals.

From the perspective of politicians, there are three major goals achieved through the personalization of their communication and politicizing their private sphere: marketing, mobilization, and dialogue. Social media marketing helps candidates to increase their visibility in the public sphere, and provides relevant services for achieving that goal. Mobilization is one of the key motives for being present in social media. The challenge of translating online mobilization into action remains, but politicians are convinced that mobilization efforts can be effectively used in different circumstances.

Dialogue with voters is another key incentive for politicians to remain present, share and get feedback from citizens in social media (Skogerbø & Enli, 2017). These three goals are all influenced by the politician's personal image and their popularity.

The idea of 'image' can be defined as how politicians present themselves to their constituents and a wider audience in face-to-face interactions or through the media (Archetti, 2017). Their image is shaped by their relationships which can grow both from their use of social media and by advancing within their organization where they can internalize part of their organization's image. A political actor's image is especially important in controlling the story or message, including outside of electoral campaigning. This concept is only of significance to popular politicians in higher offices, including Members of Congress (Archetti, 2017).

Popularity is important both as a principal of network media logic in the spread of information and in media richness theory as popularity or celebrity can be enhanced or maintained by rich media (Dijck & Poell, 2013; Tanupabrungsun & Hemsley, 2018). Popularity, in this context, can be described as the number of views an individual receives or the number of times a message is shared throughout a network. The importance of popularity is seen especially in social media, which mediatization does not fully consider. Maintaining popularity with a Member's image can benefit from the use of visual symbols, with a different style of communicative ques.

Communication through images and visual symbols offers significant advantages for Congressional Member's political communication strategies. When multiple stimuli occur, people are more likely to believe what they see over what they read or hear. This creates variation in the impact of different modes of communication at certain times (Schill, 2012). When messages using visual and verbal pathways conflict, the users have greater difficulty remembering verbal information. If a Member's goal is to distribute information providing visual aids can help in the retention information.

Utilizing multiple avenues of communication can create problems when multiple messages are processed simultaneously. Visual messages override the others, reducing the efficiency of Members' communication goals. On a general basis of political communication, however, visual symbols can play nine different functions while also reducing or enhancing other functions. They include acting as arguments, increasing ambiguity, assisting in agenda setting, dramatizing policy, aiding in emotional appeals, providing connections, and helping to build political image. Visual symbols can assist on either side of an argument by reducing or increasing ambiguity and reducing confusion as visual information can override other types of information.

Schill (2012) provides these functions in terms of political marketing in the context of television, but visual symbols can be added to a variety of communication pathways to increase their efficiency or efficacy, especially on social media. The benefits of utilizing visual symbols may be of less concern to Members than the variety of issues that have accrued through the use of social media, and its unfulfilled benefits.

Challenges to the Use of Social Media

The emergence of social media and its adoption by constituents and political leaders opened new opportunities for more effective political communication. Social media networks, especially Twitter and Facebook, are widely cited as enabling democratic societies (Macnamara & Zerfass, 2012). They are platforms for the expansion and invigoration of the public sphere, where citizens come together and freely engage in discussion (Tasente, 2013). This change is widely discussed as the cornerstone for modern liberal democracy.

Social media networks are increasingly used to engage youth and marginalized groups. Citizens get access to news, share their views and mobilize others (Macnamara & Zerfass, 2012). However, the optimistic views regarding the benefits of social media usage obscures the challenges created for democracy. Illusions of increased political participation, personalization of political rhetoric, the emergence of fake news and bots are among disruptive traits of social media that representatives (and their offices) can understand and plan for. With relevant knowledge and skills, to deal with these challenges, more effective political communication strategies can be achieved.

Illusion of Increased Political Participation

As there are no barriers to entry and no associated costs, social networking sites are used by many citizens for personal rather than political communication. Scholars argue that citizens using social media are no longer passive consumers of party propaganda, government spin, or mass media news, but "are instead actually enabled to challenge discourse, share alternative perspectives and publish their own opinion" (Loader & Mercea 2011, p. 759). However, as there is no evidence that new opportunities have spurred greater participation in politics, this optimistic view is challenged by scholars who raise the question of how public engagement is equivalent to public participation and how meaningful this participation is for the democratic process (Persily, 2017; Loader & Mercea 2011).

Participation seems to be the fundamental concept that differentiates traditional and modern media, although basic tools for interaction such as chat and forum were available in the early days of the World Wide Web (Vargo et al., 2018). Loader and Mercea argue that the evidence about social media platforms suggests that "the most active political users are social movement activists, politicians, party workers and those who are already fully committed to political cause" (2011, p. 761). Comunello et al. (2016) indicates that committed political activists are active enough to perceive the differences between platforms and act according to their affordances. This is to increase visibility and engagement on issues and influence the public agenda.

The discussion on political participation communicates a notable distinction between two notions: Political expression and political participation, which are the same

as the dichotomy between political talk and political action (Bennett & Pfetsch, 2018). Political expression is an antecedent for citizens to further engage in participatory political practices, including various forms of participation offline (i.e., attending public meetings, calling public officials, or sending a letter to an elected public official) and participation online (i.e., making a campaign contribution or signing up to volunteer for a political campaign). As the talk precedes action, expression may work to ignite political action.

Skeptics challenge this optimistic view by highlighting the declining trust in existing political institutions and practices. The public feels alienated by traditional institutions designed to channel citizens' interests in political actions and governance. Political parties, elected politicians, parliaments, and governments in almost all parts of the world are all facing an erosion of trust (Bowler & Karp, 2004; Marien & Hooghe, 2011). Thus, the distinction of political expression and political participation is relevant and should be considered. It challenges the existing optimistic view about the relationship between social media and political engagement. Observing more nuanced and complex models would develop a deeper understanding of the relationship between social media and political engagement (Gil de Zúñiga, Molyneux & Zheng, 2014). More complex models would require data to verify their theories, which can prove challenging.

Ambiguity related to political participation in social media should be discussed from another perspective as well. Social media has not led to a simplified way for representatives to understand public sentiments. Traditionally, they have relied on human contact and media outreach to collect information about public sentiment regarding salient public issues (Chung & Zeng, 2016). Today online social media and information technologies have made it easier and more convenient for representatives to collect data. The large volume and variety of tools for expression available in social media have challenged traditional policy analysis and public sentiment assessment. Chung and Zeng (2016) argue that although the cost of collecting large amounts of data is decreasing, the difficulty of properly analyzing the data to produce relevant information and meaningful insights has increased. Policy informatics is a new field which aims to find effective ways to use information and computation to inform policymakers on how to understand and tackle complex problems of society. One reason for the complexity of problems is the mixing of the public and private spheres.

Blurring the Line Between Private and Public

One of the reasons for tensions and confusion surrounding communication practices in social media is the line between public and private spaces has been obscured. Now, the division and the separation of a private sphere (individuality, personal relations, and home life) and the public sphere of society (communities, politics, and work) has become obsolete and unhelpful, due to both public and private

being located in social media networks. Trends in representatives' presentation of their image have occurred as more extreme views have grown in popularity.

The tendency of representatives to personalize their social media presence has been marked by the recent trend of declining voter loyalty for the establishment, usually tending to disadvantage moderate representatives. It resulted in the emergence of populist and demagogic parties and leaders, even in established democracies which are more likely to use social media for political communication, rather than moderate representatives (Peterson, 2012).

Scholars point to social media's capacity to engage negative campaigning and encouraging populist rhetoric and even extremism, "which will foster celebrity politics and further social fragmentation, which is seen as corroding collective action and social responsibility" (Loader & Mercea, 2011, p. 762). Moreover, communication processes in social media networks which bypass the routine filter of conventional journalism contribute to the creation of confusion and disinformation which often characterize dubious information, rumor and conspiracy (also known as "fake news" or "post-truth") (Bennett & Pfetsch, 2018).

The void left by the eroding traditional institutions has been filled by populist, nationalist, and extremist rhetoric. The rise of the Five Star Movement in Italy, the Pirate Party in Iceland, the "keyboard army" of President Rodrigo Duterte in the Philippines and others are but a few examples. We witnessed successful use of social media in the Brexit referendum, in which supporters were seven times more numerous than opponents on Twitter, and five times more active on Instagram. Most importantly, we witnessed President Trump's campaign, which was not only the case study for abuse of social media but was notably accompanied by deep dissatisfaction from legacy institutions both inside and outside politics (Persily, 2017). The social fragmentation that has contributed to the rise of populist rhetoric is partially due to disinformation.

Bots, Fake News and Post-Truth Politics

With every new technology comes abuse, and social media is no exception. Bots, fake news and disinformation have found fertile ground to flourish. Social media, a tool to connect and share information, is being frequently abused as an effective weapon to distort political realities and cloud the rational judgment of voters. This is now being characterized as the "post-truth era" - an informational environment where the lines between the reasonable debate about politics and targeted propaganda to mislead citizens and influence their choices are being intentionally blurred (Lewandowsky et al., 2017). The emergence of the post-truth era cannot be discussed without bots and fake news, flooding social media networks environment and disrupting political communication.

Studies are showing that Members are using their ties on social media to gauge the preferences of their constituents (Straus, 2018). If a large percentage of followers are

of low quality, then a Member's ability to gauge public opinion based on the strength of their social ties may be incorrect (Straus, 2018). Since Members are using social media to gather constituent opinions, there are serious concerns about the ability of low-quality accounts to determine what posts Member's offices are paying attention to on social media (Straus, 2018). For the most part, low-quality followers take the form of Bots (Ferrara, et al., 2016, 96).

Bots mislead, exploit, and manipulate social media discourse with rumors, spam, malware, misinformation, slander, or even just noise. This may result in several levels of damage to society. Views on the internet can be faked by malware-infected computers that mimic human behaviors and result in a deceptive amount of internet traffic (Read, 2018). The boundary between humanlike and bot-like behavior is blurry. Sophisticated bots can generate personas that appear as credible followers, and thus are more difficult for both people and algorithms to detect (Woolley & Howard, 2016). For example, "social bots can search the Web for information and media to fill their profiles, and post collected material at predetermined times, emulating the human temporal signature of content production and consumption - including circadian patterns of daily activity and temporal spikes of information generation" (Ferrara et al. 2016, p. 99). They can even engage in more advanced interactions, such as conversations with other people, even commenting on their posts, and answering their questions. Bots that exhibit human behavior may be able to use the algorithms of social media to expand their presence.

Studies show that less than 60 percent of traffic on the internet is actually done by humans (Read, 2018). This means that the majority of web traffic may be fake and done by bots. A study done in 2018 found that, "approximately half the Senate has more than 31 percent low quality followers, with 24 Senators having between 31 and 40 percent low quality followers, 23 having between 41 and 50 low quality followers, and two having between 50 and 60 percent low-quality followers" (Straus, 2018). This is important because people use the size of others' followings, retweets, likes, and shares as a representation for the reliability and popularity of the person that they are following (Steinmetz, 2018).

With millions of followers being been bought and an estimated 10 percent of Twitter users being bots, Representatives and their constituents may be deceived by the artificially inflated numbers (Steinmetz, 2018). If a Member's office hires dedicated social media staff there is the potential to monitor followers and potentially reduce the amount of these low quality followers (Straus, 2018). In addition, Members that are more ideological have a higher likelihood to attract low-quality followers than less ideological Members. In other words, the more famous the Member, the more low quality followers they will have following their accounts (Thomsen, 2017). A Member's low-quality followers can be products from a variety of sources.

Fake news that bots produce and transmit are difficult to pinpoint because they can come from everywhere: official campaign organs, unofficially allied interest groups, media organizations and websites, foreign actors, or even the candidate himself/herself

(Persily, 2017). This kind of abuse has already been observed: during the 2016 U.S. presidential elections, social bots were employed to support some candidates and undermine their opponents, injecting thousands of tweets pointing to websites with fake news (Persily, 2017). Bots are active both during the campaign period and during the governing phase to influence citizens' attitudes (Vargo et al., 2018). The spread of fake news does not only come from bots but also a variety of users.

Users are also inclined to believe fake news at least 20 percent of the time (Steinmetz, 2018). Some users might not even know that they are retweeting fake news, because 6 in 10 links get retweeted without users' ever reading anything that is in the link (Steinmetz, 2018). These users simply take the word of another user who has summarized the information in the link. With two-thirds of Americans getting news from their social media accounts, it is appalling that a quarter of Americans reveal that they have knowingly shared a fake news story (Steinmetz, 2018). Users are not the only ones who are not always honest.

In October of 2018, a lawsuit was filed against Facebook stating that the company overstated time users spent watching videos by between 150 to 900 percent (Read, 2018). Facebook acknowledged the misreporting of the reach of posts in multiple ways; how often viewers complete ad videos, the average time spent reading Instant Articles, the amount of referral traffic from Facebook to external websites, the amount of views that videos received, and the number of video views in Instant Articles (Read, 2018). These problems are highlighted by Facebook losing more than $120 billion in stock value in a single day in July of 2018 (Steinmetz, 2018). Around this time the company dealt with issues including the criticism that conspiracy theories are being spread on the platform (Steinmetz, 2018). Facebook is not the only social media site that is manipulating user statistics, YouTube is buying and selling video views (Read, 2018). Interested parties can buy 5,000 YouTube views for $15 (Read, 2018). It is reported that during 2013, half of YouTube's traffic were bots (Read, 2018).

As political news is becoming more widely distributed and pursued through social media, it is important to analyze how citizens decipher what sources are credible and what sources influence news online. Ill-intentioned actors have sought to influence viewers by hiding the identity of sources of information and who those sources are affiliated with to mask conflicts of interest and gain influence with users (Vendemia, Bond, & DeAndrea, 2018). Warranting theory, which is a framework that assists in explaining how people assess information found online, states that the more information is perceived to be controlled or manipulated by someone who has the possibility to benefit from the manipulation, the less likely it is that consumers of the message will have faith in its contents (Vendemia, Bond, & DeAndrea, 2018). A study done at Ohio State University found that if there is evidence that information about an issue was deleted and there is clear traces of affiliation to that cause, then there is both lower trust in the information and a support for the issue advocated (Vendemia, Bond, & DeAndrea, 2018).

To sum up, social media is routinely abused through the use of bots and fake news which aims and results in the deterioration of constituents' rational judgment. An informational environment such as this is detrimental to democracy and democratic participation. This poses challenges for Member's management of their social media usage.

Organizational Challenges in Managing Social Media

In light of the discussion regarding significant disruptive traits of social media, it is important for government institutions to manage their social media presence effectively. There are two major organizational challenges related to managing social media communication: "loss of control" over a message, along with image building and the amount of effort required to actively use social media at work (Macnamara & Zerfass, 2012). The fear of losing control might be enhanced by the targeted disinformation and propaganda, which takes extra effort to identify and tackle. Conversely, the amount of time and effort politicians might invest in social media is not free. It requires skilled and dedicated staff Members to communicate both internally and externally effectively.

Lack of time and resources might be the reason why Congress Members use the internet more for the dissemination of information, rather than interactivity (Straus, 2018). The need for more resources is a current challenge for representative political institutions. This is because they are expected to interact with the constituents, citizens, and also closely monitor public sentiments about public problems in order to prevent the potential negative effect of social media's disruptive characteristics. At the same time, the technology itself has evolved in ways that can change calculations around the decision to adopt. In this light, it is essential to see that as access to technology widens, Congressional sta responsibilities may shift to handle an even higher volume of constituent communications (Gulati & Williams, 2013). Consequently, it may become challenging for sta in a personal o ce to focus on anything but the responses to those who live in the Member's district or state. Those who were hired to work on policy might find most of their days are spent answering constituent communications.

To sum up, the adoption of e-communication tools by Congress has expanded the boundaries of communications that are available to both Representatives and constituents. Both groups are now able to share information at a lower cost and on a potentially grander scale. However, these benefits do not come without challenges and disruptions that Members have to manage. Given the research and scholarly discussion provided on the benefits and challenges of social media, the following analysis will be on both traditional and modern forms of communication.

Methodology

The primary focus of this report was to examine how Members of Congress communicate through various communication platforms and what strategies they use. This research studied communication platforms Representatives use, what the major trends of communication within these platforms are, and which resources representatives employ to communicate internally or externally. The study is being undertaken in two stages: the collection and building of a data set and subsequent analysis of the dataset. The methodology used to collect and analyze the information is discussed in the following paragraphs.

Our research relied on both quantitative and qualitative data, using document-based methods of data collection. A variety of sources were used to gather data points for each Member of Congress. Representatives' official web pages were the major sources from which the information about social media use and contact information were gathered. Congressional Members use their websites to provide information on what projects they are working on, ways to contact their offices, and personal information. The URL of both Senators' and Representatives' official website were gathered from their respective Directories. Each Members' official websites were visited to collect data on the social media platforms linked to each of their websites. This information was gathered between mid-October and early November of 2018.

For each of the Members' social media platforms that had links on their websites, we collected the number of followers, followings, likes, or subscriptions for five major social media platforms: Facebook, Twitter, YouTube, Instagram and Flickr. For this report, followers, followings, likes, and subscriptions are considered social ties, indicating their popularity and as a proxy for the initial reach of their messages. The number of Facebook posts each Member, or their office made during the 115th Congress' first year in office, provided by the Pew Research Center, was collected to determine Members' usage of modern forms of communication. Each Members' website was used to gather the data about the existence of e-newsletters sign-ups or subscriptions and contact emails to provide a variety of information on additional modern forms of communication.

Traditional forms of internal communications were assessed by collecting the number of floor speeches, one-minute speeches, and special orders. This information was gathered from CSPAN's list of Congressional Resources. Using these variables, the team identified trends in internal communication methods of Members of Congress. Besides specific forms of internal communication, the Capstone team also gathered information on resource allocation towards communication.

Both the amount spent on franked mail and the number of communication staff indicate the amount of resources spent for communication by Members of Congress.

Franking disbursements are the amount of money spent by a Member on sending official mail through the postal service and represents their focus on sending mail to their constituents. The amount spent on franked mail by each House Member was collected from the Statement of Disbursements on the House Archive for the calendar year of 2017 and the first quarter of 2018. Franking information for the Senate was obtained from the semiannual reports on receipts and expenditures of the Senate over the same period.

The team gathered information on the staff resource allocation dedicated to communication by each Representative's office. The House Telephone Directory was used to gather the number of official staff and their job titles, while the Congressional Directory was used to collect staff information for the Senate. Communication staff numbers were categorized from keywords drawn from the average job descriptions found in CRS Report RL34545 (Peterson, 2010). The keywords included media, correspondent, press, digital, and speechwriter. Total official communication staff for the House of Representative was filtered in excel using an advanced filter for job titles containing at least one keyword. During the collection process, it was noted whether or not each Member had a communications director or press secretary to coordinate communication within each office. Having a communications coordinator could indicate a stronger emphasis on communication and may be correlated with having more social ties. The relationship between a communications coordinator and social ties may also be influenced by demographic information as well.

A majority of the demographic information was initially taken from a database created by KOS, with each variable verified from official sources. Variables collected include birth year, gender, race or ethnicity, chamber, party, and voting status was verified from the U.S. House's History, Art, and Archives website. For analytical purposes, the Members who identified as Independents were changed to Democrats as they caucus with Democrats and analysis of the two Members would cause an undue issue in our analysis. Representative's districts and the seniority of Senators in their states are verified from their respective Congressional directories. Multiple measures of tenure are included within the database to capture different nuances. Measures include the number of years spent in Congress, in their respective chamber, and the opposite chamber. All measures of tenure were collected from another CRS dataset. Besides party, Members' ideology is represented using the DW-NOMINATE scores. These scores provided by Voteview through the Department of Political Science and Social Science Computing at UCLA and the University of Georgia indicate how liberal or conservative Members are. This score provides more nuance than relying on the differences between political parties, and can be transformed into a measure of ideological strength. Besides demographic characteristics, leadership status was also collected.

Based on our literature review, having a leadership position influences a Member's use of communication tools and the number of social ties on social media. For our dataset, we have included the following leadership positions as potentially

influential: the Speaker of the House, President Pro-Tempore of the Senate, Majority and Minority Leaders of the House and Senate, Republican and Democratic Whips of the House and Senate, Republican Conference Chairs of the House and Senate, Republican Policy Committee Chairs of the House and Senate, Democratic Policy Committee Chair of the Senate, Assistant Democratic Leader of the House, and the Democratic Caucus Chair of the House. This information was gathered from the Government Publishing Office's Congressional Directory.

Limitations

Our research examined questions concerning congressional communication within the 115th Congress. The limitations that constrain our work are important to acknowledge as they shaped the scope of our work. The limiting frameworks of our report can be summarized into two major categories: how the team was able to collect the data and what we were able to collect with the resources we had available. Due to the knowledge constraints of the team, information about the use of communication tools is limited and leaves ample room for research into the future.

One limitation which frames our work is the timeline of data collection. We collected our data over 29 days between October 24, 2018 and November 19, 2018. This collection period was during and after midterm elections. This had a slight impact on the number of social media accounts, official websites, and other data points that were available to us for outgoing Congressional Members. The websites and social media platforms of 10 Member's websites had been deactivated at the time of our third review of the data set. The data from those Member's platforms have been excluded from the analysis. Besides the timeframe of data collection, the type of information that was accessible, given our constraints, was limited.

The first research question attempts to examine the effect of the use of traditional communication tools on the use of modern political communication tools, but only limited information was available. The dataset contains two data points reflecting the traditional communication tools used in Congress by both chambers, which are franking and days spent on the floor of their chamber. One-minute speeches and special orders are specific only to the House, only "days spent on the floor" is representative of both chambers. Usage patterns of traditional communication tools are identified by analyzing two proxies: franking disbursements and the number of days spent on the floor. For the modern communication tools, the dataset is limited to one proxy of social media usage: number of Facebook posts on Members' official page. Facebook posts serve as a proxy because the number indicates the frequency a Member sends a message via one of the major and universally adopted social media platforms. In addition, the research uses a variable named "social ties", which captures a Member's connectivity in the social media networks. Social ties represent the size of a Member's network on social media platforms but does not reflect a Member's utilization of social media networks to communicate with his/her constituents.

When we collected the total number of official communication staff employed in the House of Representatives, we counted all positions within Member offices that had keywords associated with communication functions. One limitation that this strategy presented was that we do not know the exact duties that all staff members are performing. Job descriptions and tasks for each position are not available for our study.

Positions that failed to include one of the filter words may still be performing communication functions without being included in our dataset and study. Members with lower numbers of communication staff might have the same amount of staff members working on communication, but they perform the function in or as part of a different position.

The team was limited in some important ways regarding how we conducted our research during the duration of this project. However, even with these challenges, we were able to identify important trends in the data we did collect.

Trends

In response to our three research questions, we have pinpointed several key trends. Exploring these trends is helpful to answer our research questions in three ways: first, they help explore the relationships between variables, second, trends allows us to anticipate some potential new relationships not studied previously, and third, we can retest relationships investigated in previous research to see if they still hold true in the 115th Congress.

Research Question 1: Does Members' use of traditional forms of communication affect their use of modern communication tools?

Trend 1: Members' tenure has an effect on their franking disbursements

Historically, first-term Members spend more money on franking to raise their chances of reelection (Edwards, Stephenson, & Yeoh, 2012). Prior research shows that reelection is one reason why Members utilize franking; the other reasons include achieving influence within the chamber, developing policy with the public, and strengthening outreach (Goodman & Parker, 2010). The general trend seen in Figure 3 indicates that as Members spend more time in Congress, they spend less on franked mail. Therefore, in the 115th Congress, we expect a positive relationship between tenure and franking disbursements (Hypothesis 1), because Members in their first term frank more than Members who get re-elected.

Figure 3. Hypothesis 1. Franking Disbursements & Tenure
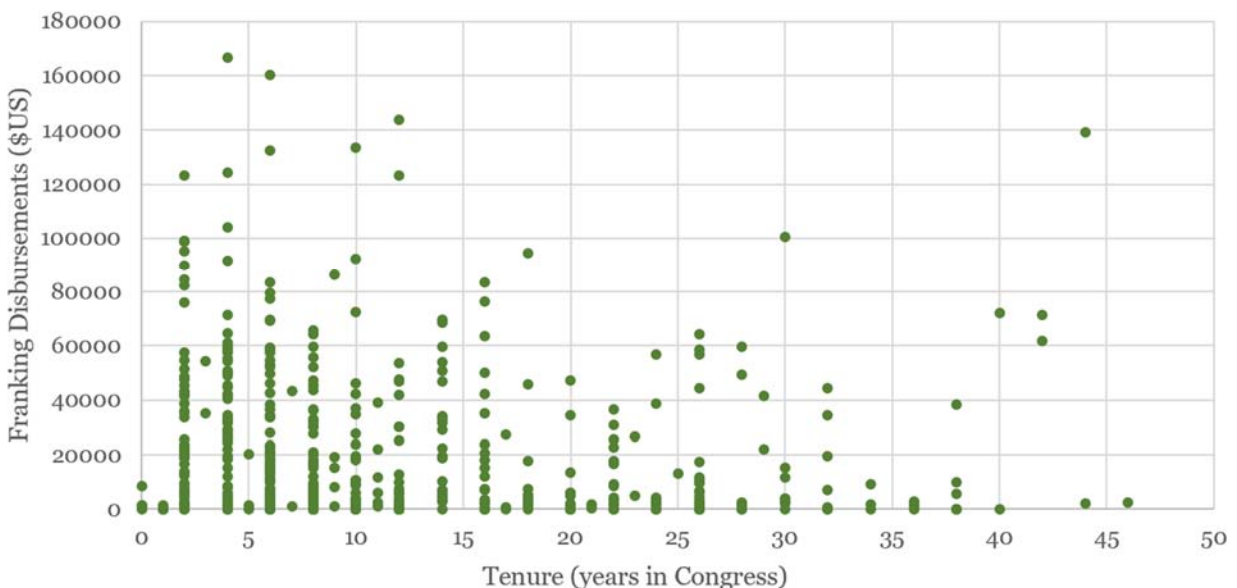
Members of the U.S. Congress have the opportunity to utilize congressional floor days to address issues which they feel strongly about. A floor day is any time a member speaks from the floor of their chamber on any given day. Floor days can include one-minute speeches, special orders, or other times when Members are recognized by the chair to deliver remarks (Schneider, 2008). Time spent debating legislation is almost equally divided among the two parties and is controlled by two managers (Rybicki, 2018). The two managers of this time are normally Members of party leadership who are responsible for determining which Members he or she will yield the floor. Members wishing to speak on the floor must advise party leadership of their intentions, including which legislation they wish to debate and for how long (Rybicki, 2018). Initial descriptive statistics indicate that more moderate Members have more floor days than their more ideologically extreme counterparts (Figure 4; Figure 5). We expect that a Member's ideology in each chamber will affect the number of floor days they engage in during the legislative session (Hypothesis 2).

Figure 4. Hypothesis 2. Ideology and Days on Floor (Senate)
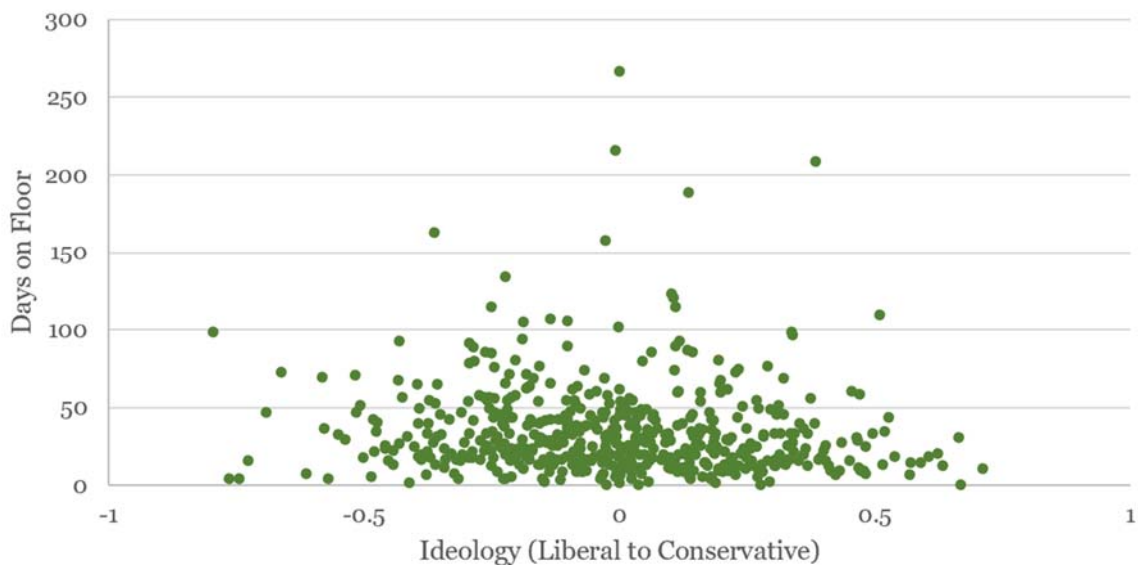
Figure 5. Hypothesis 2. Ideological and Days on Floor (House)
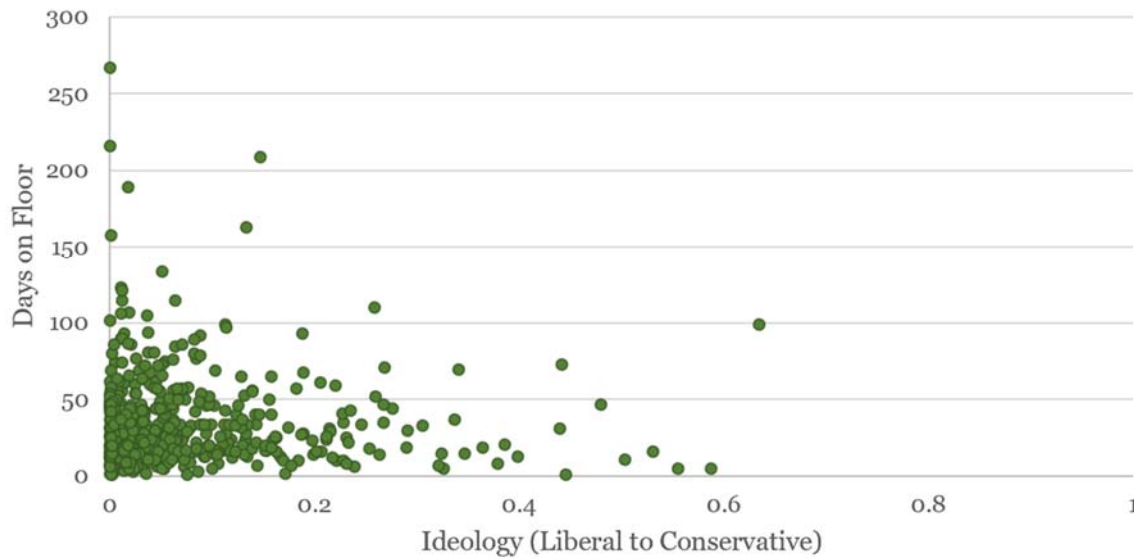
Trend 3: Members' age affects their adoption of semi-popular platforms

Previous theoretical and empirical research finds that the age of a Member of Congress will be negatively related to their adoption and use of social media platforms. A study in 2010, found that age was inversely related to the frequency of social media usage (Cha, 2010 & Straus et al., 2013). Studies of the 111st and 113th Congresses evaluated the Members' usage of Twitter. They found that younger Members of Congress were more prone to have a Twitter account, tweeted more frequently, and adopted Twitter before other Members (Peterson, 2012; Straus et al., 2014). Their empirical analysis found that older Senators are statistically less likely to use replies on Twitter. A study done on Facebook adoption for House candidates shows the same trend: age is negatively related to innovativeness (Gulanti & Williams, 2013). This signals that the early adopters of Facebook are more likely to be younger candidates (Gulanti & Williams, 2013).

Notably, research on previous Congresses and a descriptive analysis of 115th Congress indicate that adoption of major social media platforms (Twitter, Facebook) is becoming universal despite age, gender, party or chamber, although there are other social media platforms adopted: YouTube, Instagram, and Flickr. We expect that a Member of Congress's age will be negatively related to their adoption of these semi-popular platforms (Hypothesis 3).

Trend 4: Members' adoption of social media platforms affects their connectivity in social media

Our database includes a unique data point that has been seldom studied up to this analysis: social ties, which encompasses the total number of social ties for each Member (i.e.: the total number of likes and followers on Facebook, the total number of followers and following on Twitter). Social ties are a proxy for a Member's connectivity in all major social media networks. As mentioned, Twitter and Facebook are universally adopted by the Congress Members, while YouTube, Instagram, and Flickr remain as semi-popular networks adopted by approximately 60 percent, 60 percent, and 30 percent of Members, respectively. We are interested in seeing whether the adoption of more social media networks (beyond Facebook and Twitter) translates into expanded connectivity on social media network. Therefore, we expect that a Member of Congress' adoption of social media networks will be positively related to the number of connections on social media (Hypothesis 4).

Trend 5: Political party affects Member's adoption and use of social media

Previous studies show that partisanship is a determinant of the adoption of new technology and a predictor of commitment to social media networks. Empirical studies show that minority parties use more technological and innovative tools of communication to reach their constituents and expand their social ties when compared to majority parties (Williams & Gulati, 2013). Based on the literature the use of social media, we expect that minority party Members of 115th Congress are putting more effort to expand their network in social media. Therefore, we expect that Democrats have more social ties on social media platforms, rather than Republicans (Hypothesis 5).

Previous research examines the trends on adoption of social media networks and suggests that Twitter was more quickly adopted and used by Republicans (Shogan, 2010). However, Members' adoption of Facebook communicates the opposite result. In previous research, both in 2010 and 2012, there was no difference between Democrats and Republicans in the rate of Facebook adoption. While Democrats were the quickest to embrace social media in congressional campaigns, research of two consecutive majority cycles show that the decision to adopt Facebook is not the result of partisan differences (Williams & Gulati, 2013). Today, the adoption of major social media platforms (Twitter, Facebook) is essentially universal despite age, gender, party or chamber. However, examining the effect of partisanship on the adoption of YouTube, Instagram, and Flickr still holds its relevance. Therefore, we expect that in the 115th Congress, that more Democrats have adopted YouTube, Instagram and Flickr, rather than Republicans (Hypothesis 6).

As mentioned, previous studies show that partisanship is a determinant of the adoption of new technology and a predictor of commitment to social media networks. Empirical studies show that minority parties use more technological and innovative tools of communication to reach their constituents and expand their social ties when

compared to majority parties. (Williams & Gulati, 2013). Therefore, we expect that the trend is continued and reflected in the 155th Congress as well. We expect that Democrats post more on Facebook than Republicans (Hypothesis 7).

Trend 6: Having pop-up windows effects a Members' popularity on social media

During the initial data collection phase from the official websites of Members of Congress, team Members observed pop-up windows appearing with various methods of communication. On further review of the literature, multiple studies were found on the impact of pop-up windows on users' experience. A majority found, when visitors of the websites were interrupted from their search of the website, their attitude became negative (McCoy et al., 2004; Chan, Dodd & Stevens, 2004; Edwards et al., 2002). If, however, the content of the pop-up was congruent with the visitor's goals, the mechanism had a positive effect (Bittner & Zondervan, 2015). In general, pop-ups that can be considered "polite" will likely be received in a positive light (Bahr & Ford, 2011). As most of the literature indicates a negative relationship between the existence of pop-ups and users' attitudes, we expect that having a pop-up window on a Member's official website will have a negative impact on Member's popularity (Hypothesis 8).

Trend 7: The number of days spent by a Member on the floor affects the number of posts made on Facebook.

We expect that the more time spent by Members on the floor of the chamber will result in an increase in social media usage (Hypothesis 9). Initial descriptive statistics indicate that this is correct (Figure 6.). Members with more observed floor days are more likely to be active and may be more focused on certain topics. This increases the chance that they will post more on Facebook.

Figure 6. Hypothesis 9. Floor Days and Facebook Posts
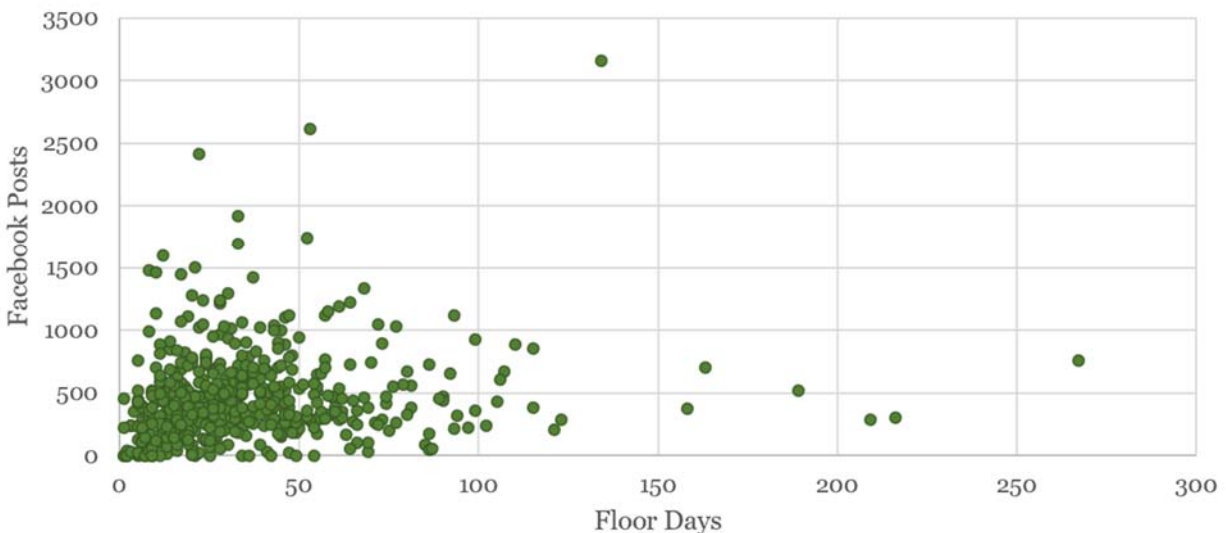
Additionally, there are specific rules governing the use of electronic devices on both the House and Senate floors. While these rules do not forbid the taking of a cellular phone on to the floor of the chamber, they do require phones to be disabled and prevented from distracting the decorum (Haas, Karen, 2015). Expressed in Clause 5 of Rule XVII wireless telephones and personal computers were determined by the Speaker to be impairing to House decorum, but tablet devices were allowed if used unobtrusively. Ultimately, this clause allows Members to use their phone for messaging or internet services, but not phone calls that could deter decorum. Most recently, this rule became a point of contention during the 2016 House Sit-In by Democratic Members of the chamber. The Speaker, within his power, turned off the house cameras and Members on the floor turned to live-streaming services to broadcast their protest (Eckman, Sarah. 2016). This action was taken against Clause 5 of Rule XVII explicitly stating that these devices were not to be used to affect the decorum.

Special orders and one-minute speeches have several purposes depending on a Member's tenure, rank, or intent. These speeches are often found in Members' communication strategy to increase access to Members' platforms (Schneider, 2015). All Members regardless of this will want to use special orders to disseminate their broad platforms or general interest (Schneider, 2009). Still, Members who seek to have their messages reach a national audience lean favorably on these speeches. Facebook can also be used to post links or direct video from Members' speeches to a larger audience. We anticipate the more special-order speeches a Member chooses to do, the more it will increase the likelihood of a Member's posting on Facebook (Hypothesis 10). We also expect that greater participation in one-minute speeches will lead to more posts on Facebook (Hypothesis 11). While academic literature used to inform this project indicates this to be the case, preliminary descriptive statistics relating both one-minute speeches and special orders to Facebook posts indicate that this may not be the case (Figure 7.; Figure 8.). Scatter plots of both relationships indicate a negative relationship between utilizing the congressional floor for either use.

Figure 7. Hypothesis 10. Special Orders and Facebook Posts
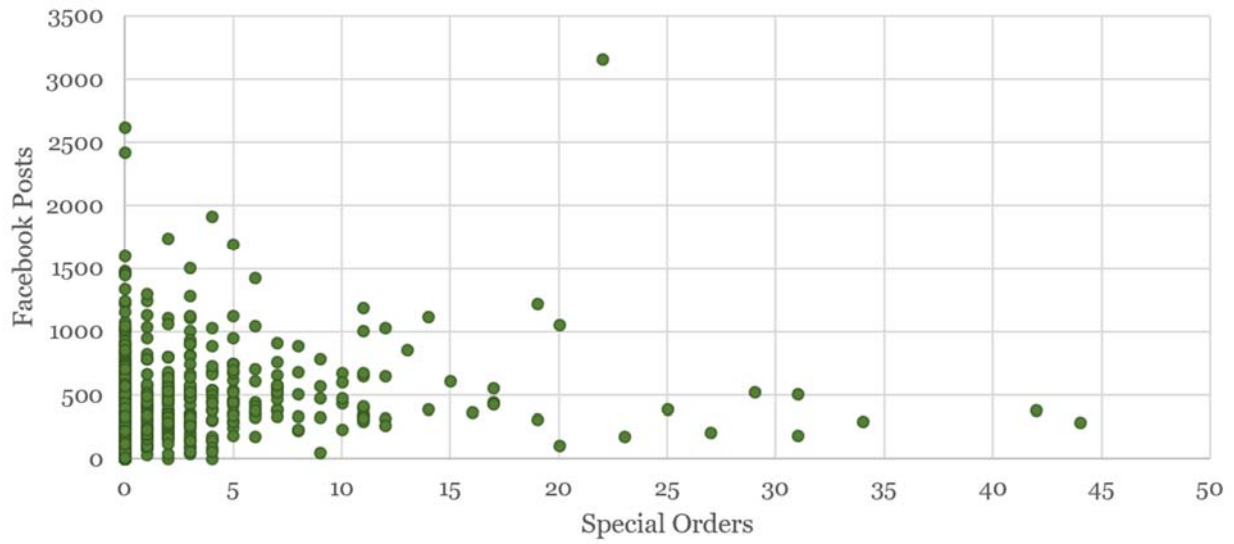
Figure 8. Hypothesis 11. One Minute Speeches and Facebook Posts
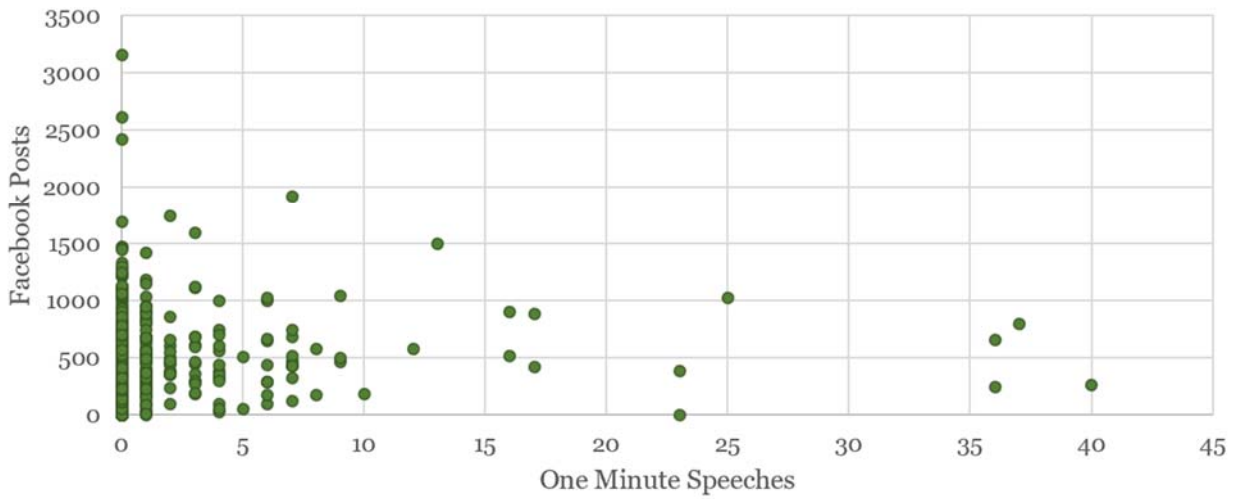
<u>Trend 8: Floor Days and Social Ties</u>

While there is limited scholarly discussion over the relationship between floor days and social ties, the team aims to analyze the effect a Member's appearance on the floor has on their social ties. We expect more time spent by Members on the floor will result in having more social ties (Hypothesis 12). As shown in Figure 9, initial descriptive statistics comparing floor days and connectivity indicates that there is a positive relationship between using more floor days, but past a certain point, taking more floor days does not expand their network.

Additional scatter plots (Figures 10 and 11) indicate that there is a negative relationship between both special orders and one-minute speeches with the size of a social network. Our Hypothesis 13, that the greater the number of special orders a Member has, the more social ties of the Member has, does not seem to be true based on initial findings. Additionally, the more one-minute speeches a Member has conducted, the more social ties (Hypothesis 14). This hypothesis is also not supported by initial findings.

Figure 9. Hypothesis 12. Floor Days & Connectivity
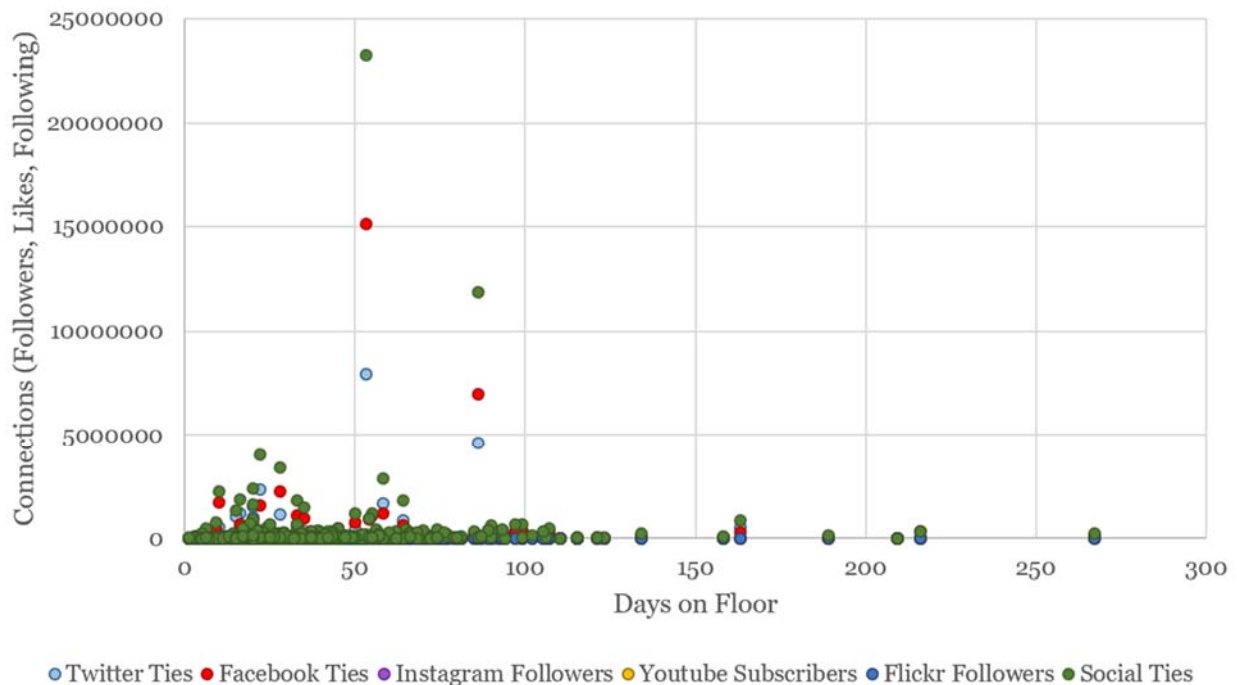
Figure 10. Hypothesis 13. Special Orders& Connectivity

○ Twitter Ties ● Facebook Ties ● Instagram Followers ○ Youtube Subscribers ● Flickr Followers ● Social Ties
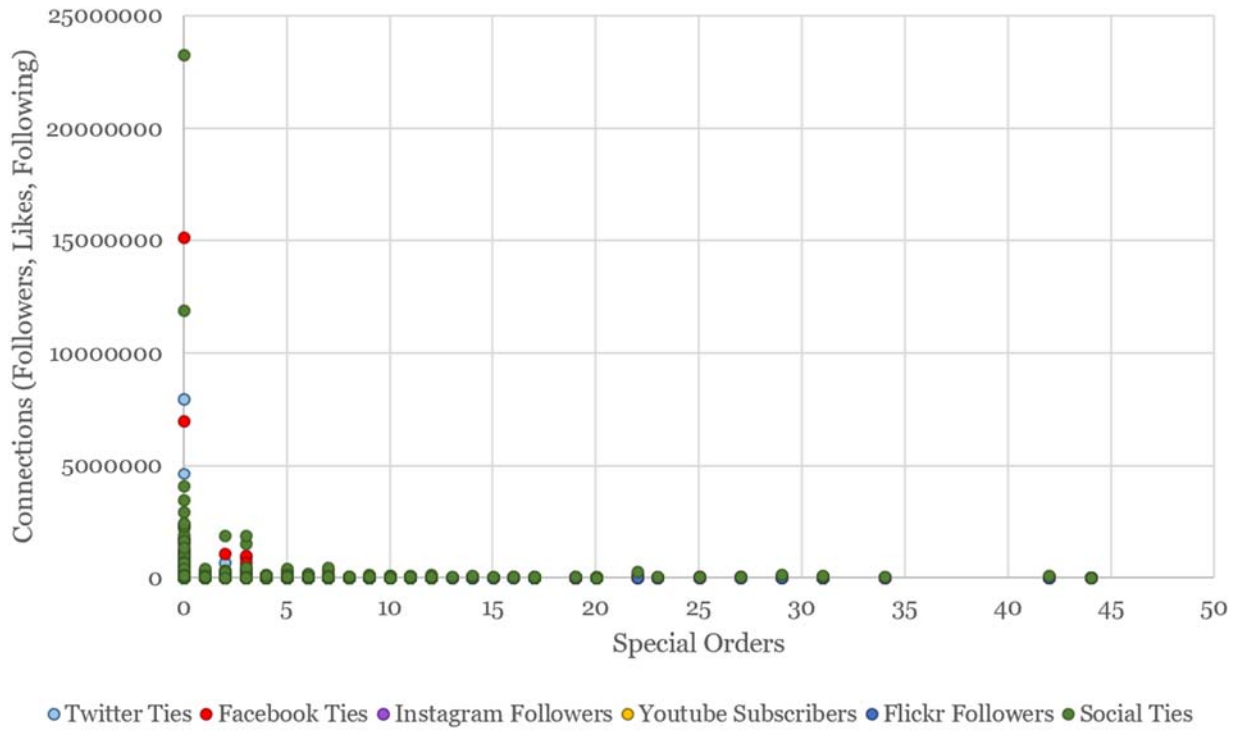
Figure 11. Hypothesis 14. One Minute Speeches & Connectivity
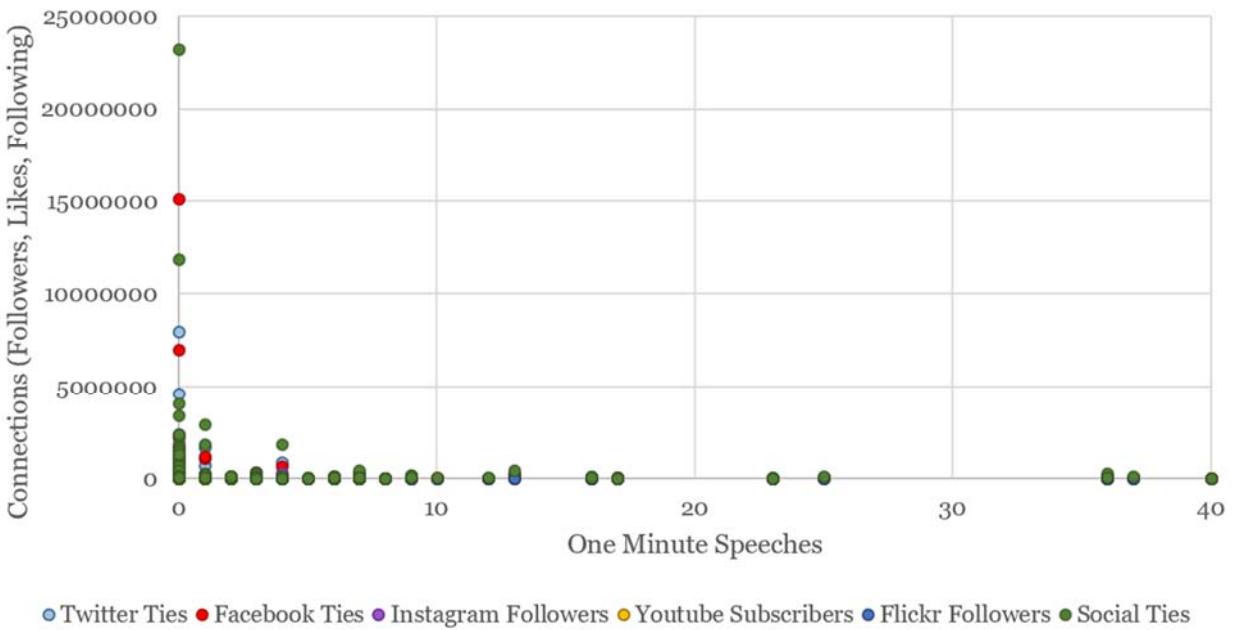
○ Twitter Ties ● Facebook Ties ● Instagram Followers ○ Youtube Subscribers ● Flickr Followers ● Social Ties

Research Question 2: Does the number of communication-related staff in a Member's office affect their use of modern and traditional communication?

<u>Trend 9: Members' ideology affects the number of their communication staff</u>

  With each new wave of innovation, concerns over resource usage of new technologies quickly become a topic of consideration, and the development of the Internet was no exception. The significantly lower transaction cost of sending an email compared to a letter concerned researchers and policymakers early in its adoption by Members of Parliament in the United Kingdom (Williamson, 2009). As modern forms of communication expand, additional resources are needed to deal with the influx of additional communications. While this point has not directly been stated within the literature, many articles have implied this finding (Straus et al., 2016; Golbeck et al., 2018; Straus, 2018). More staff member hours are needed to deal with the increase in communication pathways.

  Conservative Members are expected to spend fewer resources, as the advocate for smaller government, and under this assumption, they will also have a smaller number of staff. While no research has been found specifically on the link between communication staff levels and ideology, the team expects that more liberal Members will have more communication staff (Hypothesis 15). Initial analysis using scatter plots partially supports this hypothesis for Congress as a whole, but to different degrees for each chamber. As Members of the Senate have more staff, they have more communication staff requiring separation to a better understanding (Figure 12).

Figure 12. Hypothesis 15. Ideology and Staff
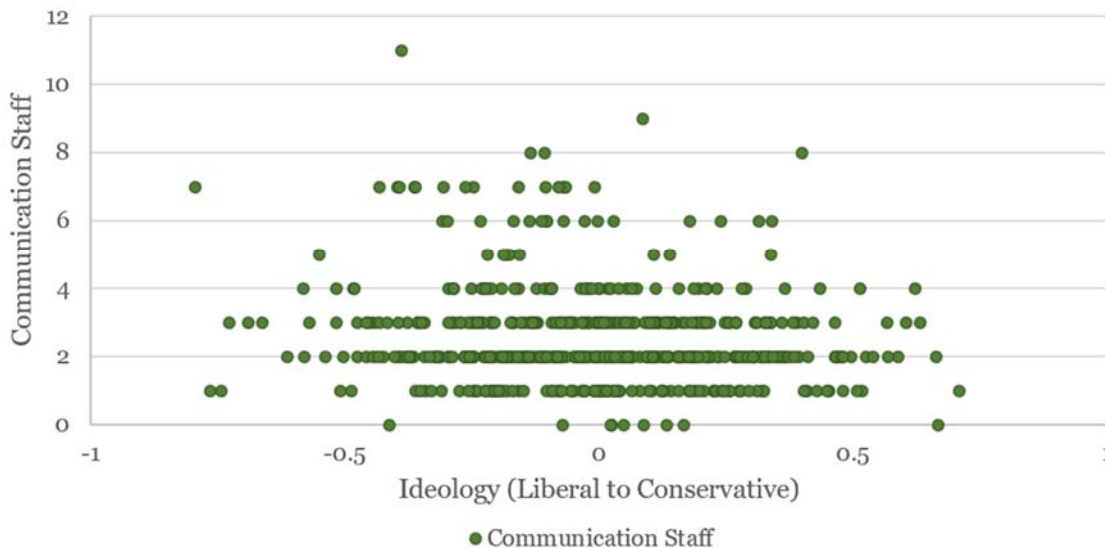
  There is more support for liberal Members in the Senate having more communications staff than their conservative colleagues, compared to Members of the

House (Figure 13; Figure 14). Initial findings comparing communication staff to other factors also supported this hypothesis.

Figure 13. Hypothesis 15. Ideology and House Staff
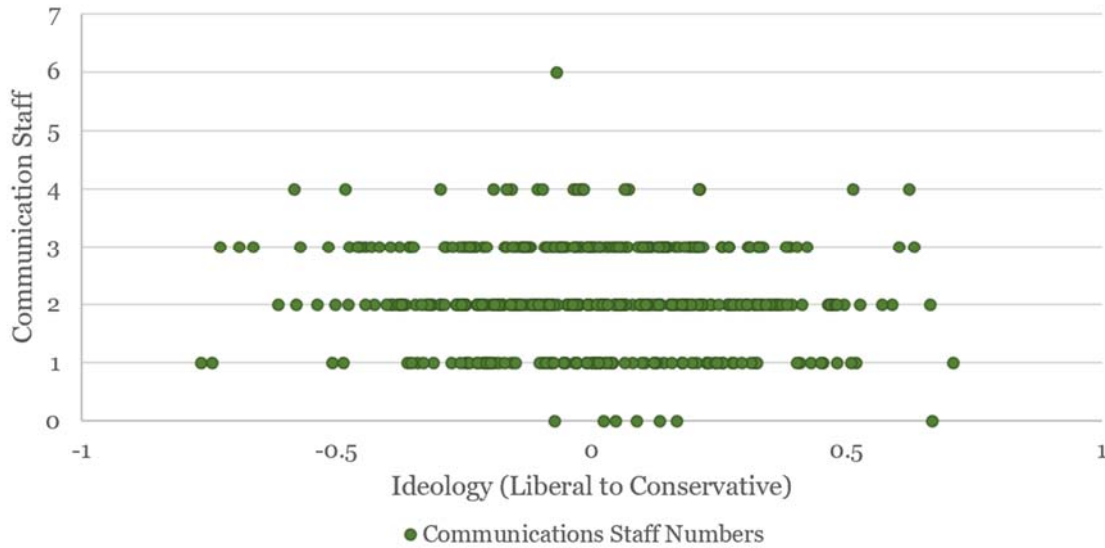
Figure 14. Hypothesis 15. Ideology and Senate Staff
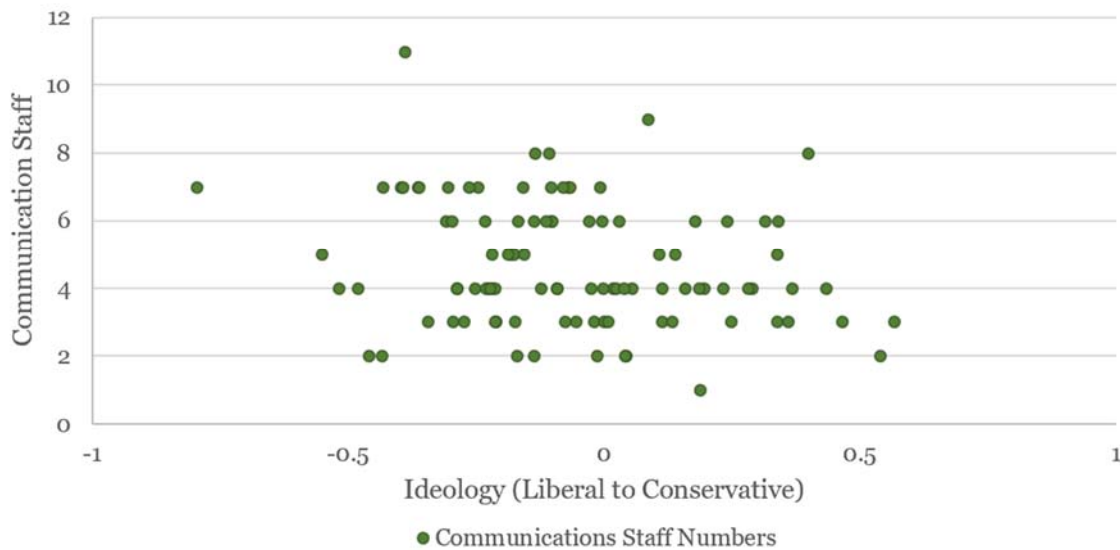
Having more communication staff does correspond to having more social ties, which supports the team's prediction that Members with more staff will have a larger number of social ties on social media (Hypothesis 16). As some communication staff members have access to the official accounts, they are able to post, increasing the number of connections on those platforms. The team predicts that having more official

communication staff will increase the number of posts on Facebook (Hypothesis 17). The scatter plot comparing these two variables does support this hypothesis (Figure 15).

Figure 15. Hypothesis 16. Staff & Connectivity

○ Twitter Ties ● Facebook Ties ● Instagram Followers ○ Youtube Subscribers ● Flickr Followers ● Social Ties
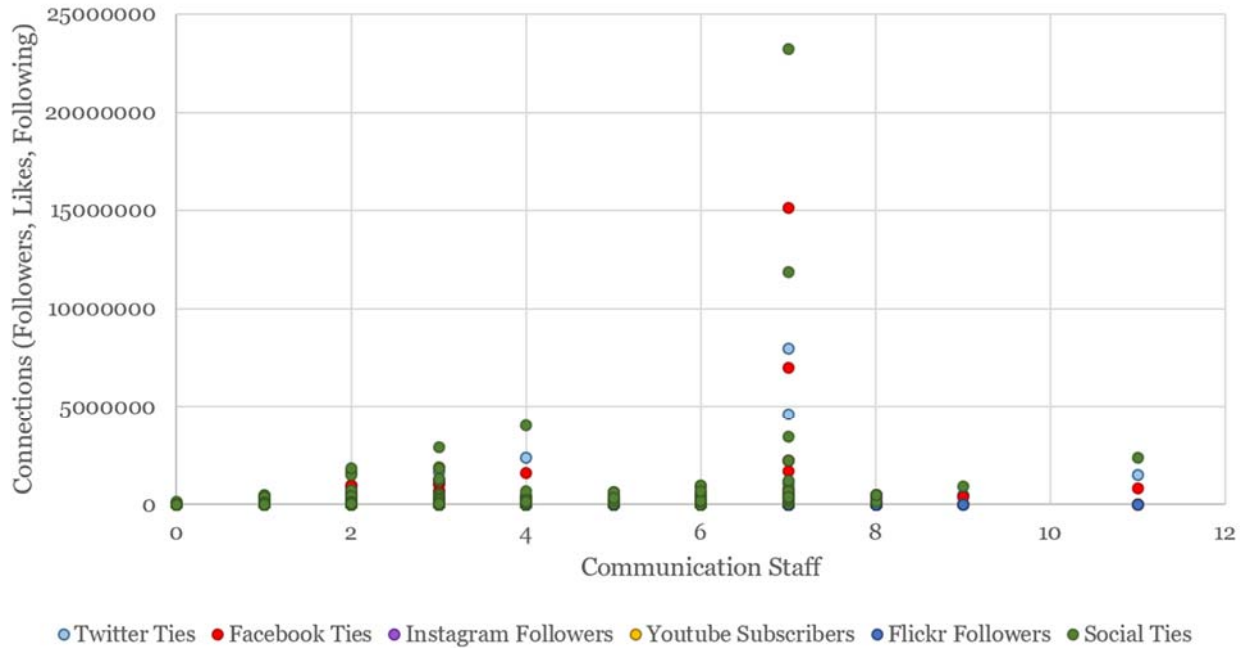
Figure 16. Hypothesis 17. Staff & Facebook Posts
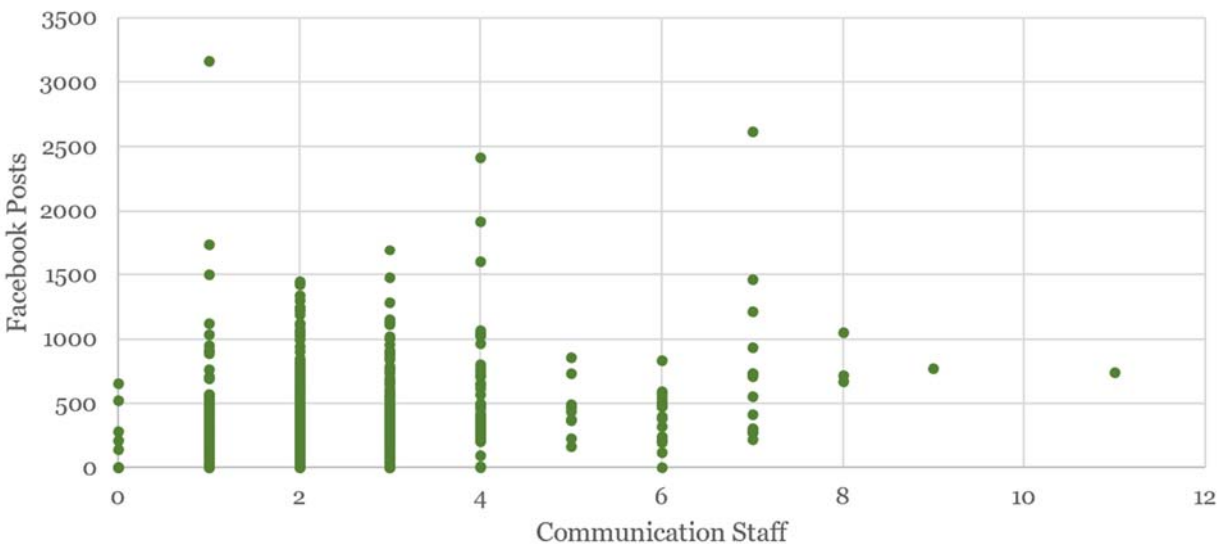
While this relates resource allocation towards communication to a modern communication method, there is also partial support for the connection between communication staff and the use of floor days (Figure 17). Although no previous research has been found, the team predicts a positive correlation between the number of

official communication staff and the number of days spent on their respective floors, holding all else constant (Hypothesis 18).

Figure 17. Hypothesis 18. Staff & Days on Floor
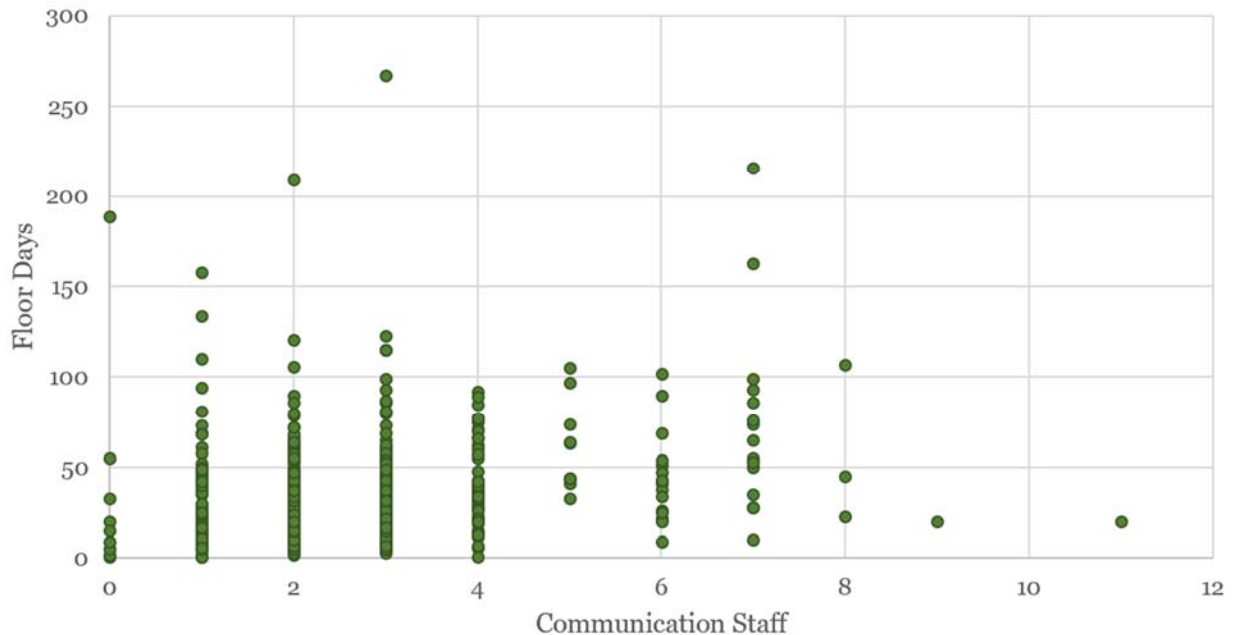
Research Question 3: Does holding a leadership position within Congress influence social media ties?

<u>Trend 10: Congressional leadership positions affects the size of Members' social ties</u>

Leadership positions within the House and Senate are normally voted on by the Party Membership. The Speaker of the House, for example, is elected by the House of Representatives generally on a party line vote by the majority party. A Member's election to a leadership position can be considered a commentary on their devotion to party, the ability to influence a vote, and the potential to foster party cohesion (United States Senate). Some evidence suggests that in highly partisan legislatures, ideologically extreme Members are elected to leadership positions. In less partisan legislatures, more moderate individuals are chosen to take up the mantle in many cases (Harris and Nelson, 2008). There is also evidence that supports this trend within committee leadership (Becker and Moscardelli, 2008). In times of higher partisanship, leaders are needed to build coalitions within their own party, rather than reach across the aisle and build alliances outside of their own party. The current political era of Congressional leadership has been identified as one of high partisanship by Harris and Nelson (2008).

Based on this information, we are interested in the potential relationship between those who have been selected as party leaders and the reality of how they are influencing social media. Therefore, we expect a Member holding a leadership position to display more social ties (Hypothesis 19).

Discussion and Findings

We employ OLS regressions in the following analysis to answer our three research questions, through proving or disproving our hypotheses. As many of the raw dependent variables are highly skewed, transformation was required to run most of our OLS regressions. Dependent variables that were logged included; *franking, floor days, Facebook posts, social ties, and connections on each platform.* To be able to produce statistically meaningful results the basic assumption that each dependent variable must be normally distributed is required to hold true. Besides being normally distributed results are only valid if there is no omitted variable bias.

Control variables were included to reduce the chance of omitted variable bias. The common set of control variables used were; *age, gender, minority, tenure, and leadership.* Chamber was included in all regressions except those with one-minute speeches, special orders, and communication staff. Additionally, to control for ideological extremity, *ideology* was squared (*ideology²*). *Ideology* is an index from -1 to 1, going from more liberal to more conservative, respectively, squaring the variable removes the negative values, making an index of 0 to 1. As Members who are liberal are also Democrats, *political party* was not included because it is highly correlated with *ideology.* We verified this assumption in Table 9 dealing with *Facebook posts* and *floor days.*

The Effect of Modern Communication Tools on Traditional Forms of Communication

Tenure does not affect Franking

As shown in Table 1, Models 2 and 2a provides no support to Hypothesis 1, that a positive relationship between *tenure* and *franking disbursements* exists (in Model 2, = -0.018, $p < 0.05$; in Model 2a, = -0.008, no significance). The coefficients for *tenure,* both by itself and when controlled for demographic variables, indicate a negative relationship which contradicts Hypothesis 1. The effect is only significant when not controlled for demographic variables as shown in Table 1 Model 2.

Table 1 H 1: Franking Disbursements of First Term Members

Dependent Variable: Logged Franking Disbursements				
Variables	Model 1	Model 2	Model 1a	Model 2a
First Term Member	0.305 (0.218)		0.168 (0.207)	
chamber			-0.733 (0.403)	-0.789 (0.403)
age			-0.013* (0.006)	-0.011 (0.007)
gender			-0.412* (0.184)	-0.428* (0.182)
race			0.071 (0.183)	0.081 (0.184)
ideology			0.883*** (0.192)	0.866*** (0.193)
ideology^2			-1.716** (0.562)	-1.707** (0.565)
tenure		-0.018* (0.008)		-0.008 (0.009)
leadership				
Constant	9.224*** (0.071)	9.478*** (0.114)	11.131*** (0.610)	11.150*** (0.599)
Observations	453	453	447	447
r2_a	0.0032	0.012	0.11	0.11
r2	0.0054	0.014	0.12	0.12

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Ideology Affects Floor Days

To test Hypothesis 2 that ideology in each chamber will affect the amount of floor days, Model 1 and 1a in Table 2 regress *logged floor days* against *ideology* while controlling for demographic variables. Both models support Hypothesis 2 by demonstrating a statistically significant negative relationship between *logged floor days* and *ideology* (in Model 1, = -0.223, p < 0.01; in Model 1a, = -0.341, p < 0.001). A moderately conservative Member spends 34 percent less time on the floor than a moderately liberal Member.

Table 2 H2: Ideology and Days on Floor

Dependent Variable: Logged Days on Floor		
Variables	Model 1	Model 1a
ideology	-0.223**	-0.341***
	(0.076)	(0.093)
chamber		-0.407***
		(0.085)
age		0.004
		(0.004)
gender		-0.006
		(0.082)
minority		-0.099
		(0.086)
ideology2		0.741**
		(0.265)
tenure		-0.003
		(0.005)
leadership		0.341***
		(0.091)
Constant	3.271***	3.229***
	(0.036)	(0.217)
Observations	528	528
r2_a	0.013	0.094
r2	0.015	0.11

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Age does not Affect Adoption

As shown in Table 3, all models, we cannot see support for Hypothesis 3, a Member's age will be negatively related to their adoption of Instagram, YouTube, and Flicker. All coefficients are not significant, although Instagram and YouTube show a negative relationship with age before being controlled for demographic variables (in Model 1,   = -0.002, not significant; in Model 2,   = -0.002, not significant). Notably, age is not a predictor of adoption of semi-popular social media platforms.

Table 3 H 3: Adoption of Semi Popular Platforms

Dependent Variable: Existence of working link on Member's website						
Variables	Instagram	Instagram	YouTube	YouTube	Flickr	Flickr
	Model 1	Model 1a	Model 2	Model 2a	Model 3	Model 3a
age	-0.002	0.001	-0.002	0.001	0.002	0.001
	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)
chamber		-0.034		-0.034		-0.160**
		(0.057)		(0.057)		(0.056)
gender		0.121*		0.121*		-0.045
		(0.054)		(0.054)		(0.050)
minority		0.015		0.015		0.101
		(0.062)		(0.062)		(0.059)
ideology		0.050		0.050		-0.073
		(0.062)		(0.062)		(0.057)
ideology2		-0.074		-0.074		-0.097
		(0.174)		(0.174)		(0.140)
tenure		-0.007*		-0.007*		0.002
		(0.003)		(0.003)		(0.003)
leadership		0.119		0.119		-0.021
		(0.064)		(0.064)		(0.060)
Constant	0.706***	0.617***	0.706***	0.617***	0.096	0.337*
	(0.126)	(0.156)	(0.126)	(0.156)	(0.104)	(0.131)
Observations	534	528	534	528	534	528
r2_a	-0.000012	0.011	-0.000012	0.011	0.0019	0.030
r2	0.0019	0.026	0.0019	0.026	0.0038	0.045

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Adoption can affect Connectivity

Our results in Table 4 provide substantial support for Hypothesis 4. Member's adoption of social media networks is positively related to their connectivity across the five platforms (in Model 1a, = 0.210, p < 0.05; in Model 2a, = 0.210, p < 0.05; Model 3a, = 0.131, not significant). Adoption of a platform is a statistically significant predictor on Member's connectivity in regard to Instagram and YouTube. If a Member has adopted Instagram, they will also have 21% more social ties. If a Member has adopted YouTube, they will also have 21% more social ties when controlling for other variables.

Table 4 H 4: Adoption of Semi Popular Platforms & Connectivity

Variables	Instagram	Instagram	YouTube	YouTube	Flickr	Flickr
Dependent Variable: Logged Social Ties						
	Model 1	Model 1a	Model 2	Model 2a	Model 3	Model 3a
official account	0.255*	0.210*	0.255*	0.210*	0.388***	0.131
	(0.121)	(0.105)	(0.121)	(0.105)	(0.116)	(0.096)
age		-0.012*		-0.012*		-0.012*
		(0.005)		(0.005)		(0.005)
chamber		-1.387***		-1.387***		-1.374***
		(0.131)		(0.131)		(0.134)
gender		0.197		0.197		0.227*
		(0.109)		(0.109)		(0.110)
minority		0.099		0.099		0.088
		(0.140)		(0.140)		(0.139)
ideology		-0.543**		-0.543**		-0.522**
		(0.175)		(0.175)		(0.180)
ideology^2		1.823***		1.823***		1.819***
		(0.478)		(0.478)		(0.484)
tenure		0.022***		0.022***		0.021***
		(0.006)		(0.006)		(0.006)
leadership		0.340*		0.340*		0.367**
		(0.134)		(0.134)		(0.134)
Constant	11.036***	12.205***	11.036***	12.205***	11.091***	12.295***
	(0.105)	(0.355)	(0.105)	(0.355)	(0.066)	(0.343)
Observations	527	521	527	521	527	521
r2_a	0.0078	0.30	0.0078	0.30	0.016	0.30
r2	0.0097	0.31	0.0097	0.31	0.017	0.31

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Variance Exists Between Political Parties in Social Ties

Table 5 indicates that there is a statistically significant difference between Republicans and Democrats, supporting Hypothesis 5, Democrats have more social ties on social media platforms than Republicans (in Model 3,   = 0.421, p < 0.001; in Model 3a,   = 0.398, p < 0.01). Democrats have 39.8 percent more social ties than Republicans, when controlling for other variables. The relationship also holds on Facebook and Twitter with Democrats having significantly larger number of social ties than Republicans (in Model 1a,   = 0.534, p < 0.001; in Model 2a,   = 0.405, p < 0.001). As *political party* was the main independent variable, *ideology* was not included due to the issue of multicollinearity.

Table 5: Political Party and Social Media

Dependent Variable: Logged Connections on the Platform					
	Followers & Following		Followers & Likes		Followers, Following, & Likes	
Variables	Twitter	Twitter	Facebook	Facebook	Social	Social
	Model 1	Model 1a	Model 2	Model 2a	Model 3	Model 3a
political party	0.534***	0.517***	0.299**	0.405***	0.421***	0.398**
	(0.109)	(0.105)	(0.094)	(0.099)	(0.111)	(0.125)
chamber		-1.529***		-1.250***		-1.378***
		(0.138)		(0.126)		(0.132)
age		-0.012*		-0.017***		-0.011*
		(0.005)		(0.005)		(0.005)
gender		0.223*		0.206*		0.245*
		(0.107)		(0.104)		(0.110)
minority		0.060		0.048		0.166
		(0.114)		(0.115)		(0.128)
ideology²		1.455**		1.821***		1.559***
		(0.456)		(0.377)		(0.446)
tenure		0.037***		0.023***		0.023***
		(0.006)		(0.005)		(0.006)
leadership		0.355*		0.169		0.360**
		(0.146)		(0.126)		(0.135)
Constant	10.060***	11.222***	10.569***	11.848***	10.993***	12.087***
	(0.069)	(0.306)	(0.059)	(0.283)	(0.071)	(0.323)
Observations	506	501	496	491	527	521
r2_a	0.044	0.43	0.019	0.33	0.025	0.29
r2	0.046	0.44	0.020	0.35	0.027	0.30

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Adoption Rates do not Differ Between Parties

While there is support for Hypothesis 5, there is nearly no support for Hypothesis 6, Democrats have adopted YouTube, Instagram, and Flickr more than Republicans, when controlling for other variables. As shown in Table 6, there is no statistically significant difference between the adoption rate of Instagram or YouTube for Republicans and Democrats (in Model 1a, = -0.080, no significance; in Model 2a, = -0.080, no significance). There is a statistically significant difference within *political party* for Flickr adoption rate, but the significance ends when controlling for other variables (in Model 3a, = 0.126, p < 0.001; in Model 3a, = 0.087, no significance). As *political party* was the main independent variable, *ideology* was not included due to the issue of multicollinearity.

Table 6: Political Party & Adoption of Semi Popular Platforms

Dependent Variable: Existence of working link on Member's website						
Variables	Instagram	Instagram	YouTube	YouTube	Flickr	Flickr
	Model 1	Model 1a	Model 2	Model 2a	Model 3	Model 3a
political party	-0.039	-0.080	-0.039	-0.080	0.126***	0.087
	(0.043)	(0.051)	(0.043)	(0.051)	(0.038)	(0.046)
chamber		0.001		0.001		0.000
		(0.003)		(0.003)		(0.002)
age		-0.038		-0.038		-0.157**
		(0.057)		(0.057)		(0.056)
gender		0.127*		0.127*		-0.048
		(0.054)		(0.054)		(0.050)
minority		0.028		0.028		0.095
		(0.060)		(0.060)		(0.056)
ideology^2		-0.101		-0.101		-0.092
		(0.165)		(0.165)		(0.127)
tenure		-0.007*		-0.007*		0.002
		(0.003)		(0.003)		(0.002)
leadership		0.120		0.120		-0.022
		(0.064)		(0.064)		(0.060)
Constant	0.604***	0.652***	0.604***	0.652***	0.188***	0.294*
	(0.029)	(0.154)	(0.029)	(0.154)	(0.023)	(0.129)
Observations	534	528	534	528	534	528
r2_a	-0.00031	0.014	0.0016	0.029	0.019	0.034
r2	0.0016	0.029	-0.00031	0.014	0.021	0.048

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Democrats Post More on Facebook

Results from Table 7 indicate that there is a statistically significant difference between Republicans and Democrats and the amount they each post on Facebook, supporting Hypothesis 7, Democrats post more on Facebook than Republicans. The regression predicts that Democrats post 35.9 percent more on Facebook than Republicans when holding other variables constant (in Model 1a, = 0.239, p < 0.001; in Model 1a, = 0.359, p < 0.001). As *political party* was the main independent variable, *ideology* was not included due to the issue of multicollinearity.

Table 7: Political Party & Facebook Posts

Variables	Model 1	Model 1a
Dependent Variable: Logged Facebook Posts		
political party	0.239***	0.359***
	(0.070)	(0.093)
chamber		-0.010**
		(0.004)
age		-0.267**
		(0.082)
gender		0.151
		(0.087)
minority		-0.117
		(0.096)
ideology^2		0.480
		(0.278)
tenure end		-0.015**
		(0.005)
leadership		-0.028
		(0.123)
Constant	5.794***	6.660***
	(0.050)	(0.236)
Observations	516	515
R-squared	0.022	0.116
r2_a	0.020	0.10
r2	0.022	0.12

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Communication Pop-ups are not Proven to Negatively Impact Popularity

To test Hypothesis 8, the existence of pop-up windows on a Members' official website will have a negative impact on Members' popularity. Table 18, only demonstrates partial support for our hypothesis because although Model 3 is statistically significant, when we control for demographic variables the significance is lost in Model 3a (in Model 3, = -0.585, p < 0.001; in Model 3a, = -0.133, no significance). The impact of communication pop-up windows is more pronounced for Twitter and less impactful for Facebook with a 21.8 and 9.2 percent drop in followers respectively, but this influence on Facebook ceases when controlling for other variables (in Model 1a, = -0.218, p < 0.01; in Model 2a, = -0.092, no significance). As the existence of a pop-up window only affects a visitors' probability of following or subscribing to a Member's account, the number of accounts a Member follows was not included.

Table 8: Communication Pop-up and Followers

Variables	Twitter Followers	Twitter Followers	Facebook Followers	Facebook Followers	Audience	Audience
	Model 1	Model 1a	Model 2	Model 2a	Model 3	Model 3a
comm pop-up	-0.704***	-0.218**	-0.474***	-0.092	-0.585***	-0.133
	(0.101)	(0.083)	(0.085)	(0.074)	(0.091)	(0.079)
chamber		-1.536***		-1.398***		-1.467***
		(0.144)		(0.123)		(0.130)
age		-0.014**		-0.016***		-0.014**
		(0.005)		(0.004)		(0.004)
gender		0.160		0.153		0.175
		(0.106)		(0.095)		(0.105)
minority		-0.017		-0.004		0.044
		(0.119)		(0.113)		(0.125)
ideology		-0.716***		-0.476***		-0.557***
		(0.140)		(0.135)		(0.161)
ideology^2		1.774***		1.862***		1.801***
		(0.473)		(0.381)		(0.441)
tenure		0.035***		0.020***		0.023***
		(0.006)		(0.005)		(0.006)
leadership		0.367*		0.159		0.368**
		(0.144)		(0.120)		(0.131)
Constant	10.452***	11.588***	10.325***	11.668***	11.095***	12.335***
	(0.073)	(0.318)	(0.059)	(0.268)	(0.066)	(0.279)
Observations	506	501	495	490	525	519
r2_a	0.062	0.45	0.043	0.40	0.051	0.41
r2	0.064	0.46	0.045	0.41	0.053	0.42

Dependent Variables: Logged social media followers

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Members who use the floor more, post more on Facebook

As shown in Table 9, there is a statistically significant positive relationship between *days on floor* and the number of *Facebook posts* (in Model 2, = 0.227, p < 0.001), indicating support for Hypothesis 9, the more time spent by Members on the floor of the chamber, the greater their usage of social media. When both *days on floor* and *Facebook posts* are logged, results indicate that for each percentage point increase in the number of days spent on the floor, the number of posts on Facebook by a Member increases by 23 percent. To understand the impact of changing the main independent variable *floor days* from being highly skewed to normally distributed, the group logged *floor days* to analyze the difference.

Table 9. Facebook Posts & Floor Days

Dependent Variable: Logged Facebook Posts				
Variables	Model 1	Model 1a	Model 1b	Model 2
floor days	0.004***	0.004***	0.005***	
	(0.001)	(0.001)	(0.001)	
chamber		-0.196*	-0.176*	-0.151
		(0.080)	(0.081)	(0.081)
age		-0.011**	-0.011**	-0.011**
		(0.004)	(0.004)	(0.004)
gender		0.139	0.146	0.128
		(0.084)	(0.084)	(0.083)
minority		-0.149	-0.084	-0.132
		(0.096)	(0.092)	(0.097)
ideology		-0.426***		-0.390***
		(0.105)		(0.104)
ideology²		0.612*		0.530
		(0.287)		(0.286)
tenure		-0.018***	-0.018***	-0.017***
		(0.005)	(0.005)	(0.005)
political party			0.297***	
			(0.082)	
floor days logged				0.227***
				(0.051)
Constant	5.764***	6.719***	6.602***	6.105***
	(0.058)	(0.241)	(0.227)	(0.285)
Observations	516	515	516	515
r2_a	0.019	0.13	0.12	0.15
r2	0.021	0.14	0.14	0.16
F	11.6	10.7	11.0	11.3

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

No Significant Relationship Exists Between Facebook Posts and Special Orders

The results shown in Table 10, demonstrate only limited support for Hypothesis 10, the more special orders a Member has, the more that they will post on Facebook. In both models the coefficients are positive, but the effect is only significant for Model 1, before being controlled for demographic variables. No significant relationship exists between *facebook posts* and *special orders* when demographic variables are controlled (in Model 1a, = 0.01, no significance). The model does not include *chamber* as only Members of the House use *special orders*.

Table 10: Facebook Posts & Special Orders

Variables	Model 1	Model 1a
Dependent: Logged Facebook Posts		
Special Orders	0.02*	0.01
	(0.01)	(0.01)
age		-0.01*
		(0.00)
gender		0.18
		(0.10)
minority		-0.19
		(0.11)
ideology		-0.43***
		(0.13)
ideology^2		0.58
		(0.34)
tenure end		-0.02***
		(0.01)
Constant	5.84***	6.65***
	(0.04)	(0.24)
Observations	422	421
r2_a	0.0089	0.11
r2	0.011	0.12
F	6.45	7.73

Robust standard errors in parentheses
*** $p<0.001$, ** $p<0.01$, * $p<0.05$

One Minute Speeches Affect the Number of Facebook Posts

As expected, in Table 11, *one-minute speeches* demonstrate a statistically significant positive relationship with *Facebook posts*, supporting Hypothesis 11, indicating that a higher number of one minute speeches, leads to more posts on Facebook (Model 1,   = 0.02, p < 0.01; in Model 2,   = 0.02, p < 0.05). An additional *one-minute speech* leads to a 2 percent increase in *Facebook posts*. The model does not include *chamber* as only Members of the House use *one-minute speeches*.

Table 11: Facebook Posts & One Minute Speeches

Dependent: Logged Facebook Posts		
Variables	Model 1	Model 2
1 minute speeches	0.02**	0.02*
	(0.01)	(0.01)
age		-0.01**
		(0.00)
gender		0.19
		(0.10)
minority		-0.19
		(0.11)
ideology		-0.45***
		(0.12)
ideology^2		0.65*
		(0.33)
tenure end		-0.02***
		(0.01)
Constant	5.81***	6.63***
	(0.05)	(0.24)
Observations	422	421
r2_a	0.014	0.11
r2	0.017	0.13
F	7.13	8.68

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Members who have more Floor Days have more Social Ties

To test Hypothesis 12, more time spent on the floor of the chamber will result in having more social ties, Model 3 and 3a in Table 12, regress *social ties* against the number of *days on the floor*, controlling for demographic variables. The results provide support for Hypothesis 4, both models show a significant positive relationship between the time a Member spends on the floor and the size of their social ties (in Model 3, = 0.010, p < 0.001; in Model 3a, = .003, p < 0.05). For each additional floor day, a Member's social ties increase by .3 percent. However, when specifically analyzing social ties on Facebook and Twitter, the number of *days on the floor* is only significant when we do not control for demographic variables (in Model 1a, = 0.001, no significance; in Model 2a, = .002, no significance).

Table 12: Floor Days & Connectivity

Variables	Followers & Twitter	Following Twitter	Likes & Followers Facebook	Facebook	Ties Social	Ties Social
	Model 1	Model 1a	Model 2	Model 2a	Model 3	Model 3a
Days on floor	0.010***	0.001	0.007***	0.002	0.010***	0.003*
	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
chamber		-1.541***		-1.238***		-1.347***
		(0.139)		(0.129)		(0.132)
age		-0.013**		-0.018***		-0.012*
		(0.005)		(0.005)		(0.005)
gender		0.181		0.187		0.227*
		(0.104)		(0.102)		(0.110)
minority		-0.047		-0.007		0.109
		(0.119)		(0.122)		(0.140)
ideology		-0.741***		-0.516***		-0.509**
		(0.136)		(0.142)		(0.177)
ideology²		1.830***		2.025***		1.753***
		(0.466)		(0.415)		(0.491)
tenure		0.034***		0.021***		0.021***
		(0.006)		(0.005)		(0.006)
leadership		0.354*		0.153		0.334*
		(0.145)		(0.126)		(0.133)
Constant	9.967***	11.551***	10.449***	12.037***	10.838***	12.234***
	(0.087)	(0.318)	(0.071)	(0.290)	(0.090)	(0.343)
Observations	506	501	496	491	527	521
r2_a	0.050	0.44	0.042	0.34	0.052	0.30
r2	0.052	0.45	0.044	0.35	0.054	0.31

Robust standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05

Special Orders do not Predict Social Ties

As shown in Table 13, Models 3 and 3a predict the number of *social ties* using special orders and demographic variables. Although Model 3 supports Hypothesis 13, the larger the number of special orders a Member has, the greater the number of a Member's social ties, *special orders* does not remain significant when we control for demographic variables in Model 3a (in Model 3, = 0.022, p < 0.05; Model 3a, = 0.018, not significant). The model does not include *chamber* as only Members of the House use *special orders*.

Table 13: Special Orders & Connectivity

Variables	Followers & Twitter	Following Twitter	Likes & Followers Facebook	Followers Facebook	Ties Social	Social
Dependent Variable: Logged social ties on social media						
	Model 1	Model 1a	Model 2	Model 2a	Model 3	Model 3a
special orders	0.020*	0.016	0.014	0.010	0.022*	0.018
	(0.009)	(0.010)	(0.008)	(0.009)	(0.009)	(0.010)
age		-0.016**		-0.018***		-0.012*
		(0.005)		(0.005)		(0.006)
gender		0.241*		0.207		0.314**
		(0.102)		(0.108)		(0.110)
minority		-0.050		-0.019		0.076
		(0.112)		(0.111)		(0.143)
ideology		-0.555***		-0.347**		-0.352
		(0.134)		(0.127)		(0.195)
ideology^2		1.193**		1.293***		0.904
		(0.377)		(0.348)		(0.507)
tenure		0.041***		0.025***		0.021**
		(0.007)		(0.006)		(0.007)
leadership		0.339		0.167		0.429*
		(0.174)		(0.152)		(0.171)
Constant	9.954***	10.201***	10.448***	10.955***	10.869***	11.119***
	(0.050)	(0.320)	(0.044)	(0.291)	(0.057)	(0.370)
Observations	413	409	407	403	429	424
r2_a	0.0071	0.22	0.0042	0.11	0.0063	0.086
r2	0.0095	0.23	0.0067	0.13	0.0086	0.10

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

One Minute Speeches does not Affect Social Ties

Models 3 and 3a in Table 14 provide no support for Hypothesis 14, the more one-minute speeches a Member conducts, the more social ties they will garner. Although the coefficients in these models demonstrate a positive relationship between *Social Ties* and *one-minute speeches* as expected, these relationships are not significant (in Model 3, = 0.003, no significance; in Model 3a,   = .004, no significance). The model does not include *chamber* as only Members of the House use *one-minute speeches*.

Table 14: One Minute Speeches & Connectivity

Dependent Variable: Logged social ties on social media					
	Followers & Twitter	Following Twitter	Likes & Followers Facebook		Ties Social	Social
Variables	Followers & Twitter	Following Twitter	Facebook	Facebook	Social	Social
	Model 1	Model 1a	Model 2	Model 2a	Model 3	Model 3a
1 minute speeches	-0.000	0.002	0.002	0.004	0.003	0.004
	(0.006)	(0.005)	(0.006)	(0.006)	(0.007)	(0.006)
age		-0.016**		-0.018***		-0.013*
		(0.005)		(0.005)		(0.006)
gender		0.246*		0.209		0.318**
		(0.102)		(0.108)		(0.110)
minority		-0.053		-0.021		0.075
		(0.112)		(0.110)		(0.143)
ideology		-0.587***		-0.366**		-0.385*
		(0.130)		(0.124)		(0.189)
ideology²		1.292***		1.358***		1.016*
		(0.373)		(0.341)		(0.492)
tenure		0.040***		0.025***		0.021**
		(0.007)		(0.006)		(0.007)
leadership		0.333		0.164		0.423*
		(0.173)		(0.153)		(0.171)
Constant	9.987***	10.217***	10.464***	10.961***	10.894***	11.126***
	(0.057)	(0.321)	(0.050)	(0.290)	(0.062)	(0.367)
Observations	413	409	407	403	429	424
r2_a	-0.00243	0.213	-0.00220	0.109	-0.00205	0.0811
r2	1.39e-06	0.228	0.000269	0.127	0.000293	0.0985

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

The Effect of Communication Staff on Modern and Traditional Communication

Communication Staffing Increases Communication and Social Ties

To test Hypothesis 15, more liberal Members will have more communications staff, we regress *total staff and comm staff* on *ideology* both controlling and not controlling for demographic variables as shown in Table 15. Models 2 and 2a support our hypothesis, the relationship is significant when controlling for demographic variables (in Model 2,   = -0.327, p < 0.05; in Model 3a,   = -0.491, p < 0.01). A moderately conservative Member will have .49 less staff members than someone who is moderately liberal. The model does not include *chamber* as the variable is to correlated with other variables when staff members are included.

Table 15: Ideology and Staffing

Dependent Variable: Official Staff						
	Total Staff	Total Staff	Comm Staff	Comm Staff	Comm Director	Comm Director
Variables	Model 1	Model 1a	Model 2	Model 2a	Model 3	Model 3a
ideology	-1.790	-1.808**	-0.327*	-0.491**	-0.008	0.002
	(1.422)	(0.686)	(0.152)	(0.154)	(0.028)	(0.030)
ideology^2		2.503		0.673		-0.192*
		(2.079)		(0.405)		(0.093)
chamber		-34.899***		-2.617***		-0.090***
		(0.957)		(0.188)		(0.017)
age		-0.020		-0.006		0.000
		(0.023)		(0.006)		(0.001)
gender		0.505		0.265*		0.002
		(0.596)		(0.124)		(0.029)
minority		-0.019		-0.253		-0.049
		(0.616)		(0.136)		(0.037)
tenure		-0.010		-0.008		0.001
		(0.033)		(0.009)		(0.001)
leadership		1.305		0.029		-0.036
		(0.707)		(0.154)		(0.034)
Constant	21.969***	50.797***	2.640***	5.101***	0.925***	1.047***
	(0.657)	(1.624)	(0.070)	(0.374)	(0.012)	(0.083)
Observations	526	526	526	526	527	527
r2_a	0.0012	0.90	0.0078	0.47	-0.0017	0.021
r2	0.0031	0.90	0.0097	0.48	0.00021	0.036

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

More Staff leads to More Social Ties

In Table 16, we regress the *comm staff number* on *communication ties*, to test Hypothesis 16, Member's with more staff will have a larger the number of social ties. Models 3 and 3a indicate that there is a significant positive relationship between a Member's social ties and the number of communication staff in their office (in Model 3, = 0.385, p < 0.001; in Model 3a, = 0.209, p < 0.001). These results tell us that for each additional communication staff member, social ties increase by 20.9 percent.

Table 16: Communication Staff and Connectivity

Variables	Followers & Following		Followers & Likes		Ties	
	Twitter	Twitter	Facebook	Facebook	Social	Social
	Model 1	Model 1a	Model 2	Model 2a	Model 3	Model 3a
comm staff #	0.423***	0.182***	0.343***	0.202***	0.385***	0.209***
	(0.036)	(0.040)	(0.037)	(0.040)	(0.036)	(0.041)
chamber		-1.091***		-0.735***		-0.848***
		(0.163)		(0.139)		(0.151)
age		-0.012*		-0.017***		-0.011*
		(0.005)		(0.004)		(0.005)
gender		0.128		0.118		0.162
		(0.102)		(0.102)		(0.107)
minority		-0.010		0.035		0.146
		(0.116)		(0.116)		(0.137)
ideology		-0.659***		-0.450***		-0.437*
		(0.126)		(0.132)		(0.171)
ideology^2		1.690***		1.919***		1.643***
		(0.442)		(0.383)		(0.460)
tenure		0.035***		0.023***		0.023***
		(0.006)		(0.005)		(0.006)
leadership		0.354*		0.164		0.358**
		(0.141)		(0.121)		(0.132)
Constant	9.214***	10.702***	9.819***	11.132***	10.187***	11.319***
	(0.101)	(0.372)	(0.095)	(0.326)	(0.105)	(0.400)
Observations	505	500	495	490	526	520
r2_a	0.25	0.47	0.24	0.38	0.20	0.33
r2	0.25	0.48	0.24	0.39	0.21	0.34

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Communication Staff Effect on Facebook Posts

In Table 17, Models 1 and 1a we predict how the number of *communication staff* in a Member's office will affect the number of *Facebook posts.* Hypothesis 17 stated that having more official communication staff will increase the number of posts on Facebook. Table 17, Model 1 and 1a supports that there is a significant positive relationship (in Model 1, = 0.100, p < 0.001; in Model 1a, = 0.093, p < 0.01). For each additional communications staff member in a Member's office, Facebook posts will increase by 9.3 percent.

Table 17: Communication Staff & Facebook Posts

Dependent Variable: Logged Facebook Posts		
Variables	Model 1	Model 1a
comm staff #	0.100***	0.093**
	(0.020)	(0.030)
chamber		-0.032
		(0.118)
age		-0.010**
		(0.004)
gender		0.105
		(0.087)
minority		-0.140
		(0.095)
ideology		-0.418***
		(0.107)
ideology^2		0.620*
		(0.288)
tenure		-0.016**
		(0.005)
leadership		-0.028
		(0.122)
Constant	5.643***	6.405***
	(0.070)	(0.283)
Observations	516	515
r2_a	0.032	0.12
r2	0.034	0.13

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Floor Days does not Statistically Affect Communications Staff

As shown in figure 18, Models 1 and 1a only show mild support for Hypothesis 18, a positive correlation exists between the number of official communication staff and the number of days spent on the floor (in Model 1, β = 0.129, p < 0.001; in Model 1a, β = 0.060, no significance). *Communication staff* is only a significant predictor of the number of *floor days* when we do not control for demographic variables.

Table 18: Communication Staff & Floor Days

Dependent Variable: Logged Floor Days		
Variables	Model 1	Model 1a
comm staff #	0.129***	0.060
	(0.025)	(0.038)
chamber		-0.278*
		(0.133)
age		0.004
		(0.004)
gender		-0.028
		(0.084)
minority		-0.084
		(0.087)
ideology		-0.300***
		(0.090)
ideology^2		0.681**
		(0.263)
tenure		-0.001
		(0.005)
leadership		0.313***
		(0.087)
Constant	2.922***	2.967***
	(0.077)	(0.295)
Observations	532	526
r2_a	0.055	0.10
r2	0.057	0.12

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Congressional Leadership Positions Effect on Social Ties

Leadership Positions Effect on Social Ties

We regress *leadership* on *social ties* to predict if holding a leadership position affects the number of social ties. In Hypothesis 19, we expect that holding a leadership position will result in greater social ties. Table 19, Models 3 and 3a predict that there is a statistically significant positive relationship between social ties and having a leadership position (in Model 3, = 0.908, p < 0.001; in Model 3a, = 0.363, p < 0.05). Using Model 3a, we find that having a leadership position increases the size of a Member's social ties by 36.3 percent.

Table 19: Leadership and Social Ties

Dependent Variable: Logged Connections on the Platform					
	Followers & Following		Followers & Likes		Ties
Variables	Twitter	Twitter	Facebook	Facebook	Social	Social
	Model 1	Model 1a	Model 2	Model 2a	Model 3	Model 3a
leadership	1.111***	0.360*	0.616***	0.171	0.908***	0.363**
	(0.162)	(0.144)	(0.146)	(0.125)	(0.149)	(0.134)
chamber		-1.553***		-1.270***		-1.397***
		(0.138)		(0.126)		(0.132)
age		-0.013**		-0.017***		-0.012*
		(0.005)		(0.005)		(0.005)
gender		0.180		0.183		0.221*
		(0.104)		(0.102)		(0.110)
minority		-0.049		-0.012		0.101
		(0.119)		(0.123)		(0.141)
ideology		-0.748***		-0.531***		-0.531**
		(0.137)		(0.143)		(0.178)
ideology^2		1.846***		2.061***		1.805***
		(0.464)		(0.413)		(0.485)
tenure		0.034***		0.021***		0.021***
		(0.006)		(0.005)		(0.006)
Constant	10.123***	11.577***	10.610***	12.106***	11.040***	12.341***
	(0.055)	(0.312)	(0.048)	(0.288)	(0.058)	(0.337)
Observations	506	501	496	491	527	521
r2_a	0.11	0.45	0.045	0.34	0.068	0.30
r2	0.11	0.45	0.047	0.35	0.070	0.31

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Discussion

The use of modern and traditional tools of communication is widely studied in the literature in the context of congressional communication. In the era of social media, use of social media networks became the primary focus of political communication specialists. In this study, we identified trends in the usage of traditional and modern communication tools for different subgroups of Congressional Members and examined the relationships among them. Some old trends do not repeat themselves in 115th Congress, while some remain relevant. In the following section, we highlight major findings and spotlight some of the observations that contradict the previous research or is significant due to its innovative nature.

Traditional Communication

Our data includes two major traditional communication tools used by both chambers of Congress, franking and floor days. One-minute speeches and special orders also constitute as traditional communication tools, but are used only by House Members.

Franking: Data analysis indicates that franking trends do not match those found in the literature. More specifically, we examined the relationship between Member's franking expenditure and their ideology. As a result, we found that the more conservative a Member's ideology, the more the Member will spend on franking, which is contradictory to the previous findings. According to mainstream understanding, conservative Members tend to believe in smaller government and spend less money on communication staff compared to liberal Members (Goodman & Parker, 2010). Therefore, they spend less on franking as well. In contrast to this preconceived notion, in 115th Congress, moderately conservative Members spend 89 percent more than moderately liberal Members (Goodman & Parker, 2010).

Despite ideological preferences regarding small government and less spending, Republicans tend to diverge from this ideological line and spend more money on franking. Analysis also indicates that more ideologically extreme Members spend less on franking. If we combine these two observations, we can say that closer to the extreme, conservative Members remain loyal to their ideological views and spend less on franking, but as we move closer to center, conservative Members spend more money on franking, compared to their liberal colleagues. High spending might also be attributed to the majority status of Republican Members.

Additionally, in contrast with previous research, our analysis does not find that first term Members have a statistically significant difference in franking disbursements.

This finding does not support earlier research that first term Members spend more on franking, mainly to increase their chance of reelection (Edwards, Stephenson, & Yeoh, 2012). In other words, Members in the first term, do not spend more on franking, than in the terms following.

    *Floor Days***:** Our analysis found a statistically significant, negative relationship between days spent on floor and Member's ideology, meaning that a moderately conservative Member spends 41 percent less time on the floor than a moderately liberal Member. This finding might be attributed to the general observation that minority parties seek more attention and therefore use more tools available to advance their agenda and spread a message. More importantly, Members being closer to extreme on ideological scale spend more time on the floor, compared to moderate Members. This finding can be attributed to the general trend found in the previous research, according to which more ideologically extreme representatives seek and utilize communication tools more actively, rather than their moderate counterparts. Notably, the opportunity of floor days is utilized more by ideologically extreme Members and more liberal Members.

Modern Communication

    Use of Social Media: Member's use of social networks is affected by a number of factors that proved to be statistically significant. Namely, partisan affiliation, tenure, ideology, and leadership position are all significant predictors of the use of social media (specifically, Facebook). The trend that minority party representatives and ideologically extreme Members use social media platforms more actively supports previous research. In 115th Congress, Democrats posted 38 percent more than Republicans, and the more ideologically extreme Members posted more than their moderate colleagues. While political party and ideology have an influence so does age and tenure. While demographic information had a significant influence, a Member's use of traditional forms of communication also has an impact on Facebook usage.

    The impact between traditional and modern communication tools is not consistent or uniform across the different models we examined. More specifically, we examined the relationship between the amount of floor speech opportunities a Member has used in Congress (one-minute speeches, special orders and all opportunities combined, floor days) and their use of Facebook. The analysis found that the relationship is significant between Facebook posts and both floor days and one-minute speeches, but within different models we noticed that ideology, partisanship, leadership and tenure are more powerful predictors of active use of social media rather than producing floor speeches. Therefore, we concluded that use of traditional forms of communication does not affect the use of modern tools of communication, providing the negative answer to our first research question.

Connectivity: We looked at Members' measured connectivity to distinguish what characteristics make a Member more connected on social media. This connection led us to explore how modern and traditional forms of communication affect the number of connections that Members have on social media. Of the pathways of modern communication analyzed, only the number of floor days provided statistically significant trends.

We found that political affiliation does affect connectivity on social media. Across both Twitter and Facebook, we see that Democrats have 58 percent and 43 percent more social ties respectively. Overall, Democrats have 46 percent more social ties across all platforms. This overwhelming Democratic advantage in social ties may be contributed to their minority status. Previous literature shows that minority parties use more technological and innovative tools of communication to reach their constituents to expand their social ties (Williams & Gulati, 2013). Our findings can only offer support, but cannot prove this to be the case, there are other reasons for why Democrats have more social ties across platforms. Members who are more ideologically extreme have been shown to use Twitter and other social media platforms to build connections. Another variable that influences a Member's connectivity is the existence of communication pop-up windows.

Previous literature does not go in depth in examining the relationship between communication pop-ups and social ties. The present research indicates that visitors have a negative attitude when interrupted by a pop-up window (McCoy et al., 2004; Chan, Dodd & Stevens, 2004; Edwards et al., 2002). However, if the content of a pop-up was aligned with the visitor's goals, the mechanism had a positive effect (Bittner & Zondervan, 2015). Our analysis adds to the literature by finding that the existence of a communication pop-up window on an official website has a negative impact on a Member's social ties. While results confirm our hypothesis, Twitter was the most statistically significant and had the largest impact compared to Facebook Followers and Member's audience overall in the 115th Congress. The number of social ties a Member has indicates the size of their audience, but it does not explicitly explain how much Members are using their social networks. Social networks can be affected by both modern and traditional forms of communication.

Along with examining the major trends of using modern and traditional forms of communication, the research is also concerned with their relationship. We find that the more days a Member spends on the floor, the more they are posting on Facebook. For the House specifically, Members who use one-minute speeches more often, also post more on Facebook. While this is statistically significant, Members usually partake of one-minute speeches only a few times, while Members spend significantly more time on the floor. The influence of the main independent variable should not be overstated, as demographic variables play a greater role for most Members. This means that who you are matters more than the path chosen in how Members communicate and the size of their social network. While calculating the costs associated with the use of social media

is beyond the scope of the research, we can examine how the resources allocated to the management of communication is associated with Members use of social media.

Resource Allocation

Analysis indicates that having designated staff focused on communication increases the use of both modern and traditional communication, and increases social ties. As we were unable to conclude if the adoption of social media led to additional communication staff, we looked at the connection between the number of communication staff and how many social ties a Member has instead. We found that one in every two moderately liberal Members have two more total staff and one more communications staff compared to moderately conservative Members. Being in a leadership position decreases the chance that a Member will have a communications director by 10 percent. The existence of additional communications staff increases the number of social ties on Twitter, Facebook, and across all platforms on an aggregate level, including when controlling for demographic variables. While having more communications staff increases the number of social ties throughout the platforms tested, ideology and tenure had a larger impact. The number of communication staff matters less than other predictors of social ties, such as holding a leadership position.

Leadership

We examined what effect possessing a leadership position, as a Member, had on the strength of their social ties. We found that being in a leadership position increases a Member's social ties by 36.3 percent. Interestingly, our analysis also found that which chamber of Congress they occupy, their age, ideology, and tenure also play a crucial role in determining the size of the Member's baseline audience. The size of a Member's audience can increase significantly if comments go viral or if their message is picked up by an amplifier (Klinger & Svensson, 2015). Ideology and ideological strength were the two variables that has a more substantial effect on social ties compared to leadership. One potentially informative direction for further analysis and research is to explore what variables predict the likelihood that a Member will be chosen for a leadership position using our dataset. Our literature review suggests that there is evidence that in highly partisan legislatures, ideologically extreme Members are elected to leadership. The research also states that in less partisan legislatures more moderate individuals are chosen for leadership positions (Harris & Nelson, 2008; Becker & Moscardelli, 2008).

Implications

Moving forward, there are a few suggestions that can be highlighted for future research, implementation, and the utilization of Congressional communication. Our research shows that the relationship between Members, constituents, media, and staff is complex, but our project assists in navigating these complexities by providing a clearer understanding in the following ways:

- Members who have pop-up windows on their official Congressional pages may need to think about how constituents view these pop-ups. Constituents who are not visiting Members' official pages to seek out social media connections or newsletter subscriptions may find popups to be intrusive and off-putting. This may lead to less social media ties as indicated by our research.

- Constituents want to hear from their representatives, but it does not seem like the information they are receiving makes a measurable difference. Communication between lawmakers and their constituencies seems to be one way, with lawmakers communicating information to their constituents and the flow of information back to the lawmakers being significantly truncated.

- Hiring more communications staff may not be the answer to the communication gap issue. Having staff dedicated specifically to communications is helpful to a point. However, it is not a cure-all for the divide that is currently between lawmakers and constituents. The relationship between communications staff and how much it helps lawmakers gain social ties is still relatively unclear.

- One clear impact is that of a Member's personal brand. The individual who holds the office of either Representative or Senator is extraordinarily important for determining many different data points. Who a congressperson is has a direct influence on how they interact and communicate with constituents and staff. A young, female, liberal, freshman senator is going to behave very differently than an older, male, conservative, ranking member in the House. The results of the research reflect this.

- Party membership may also be an important factor in communications. Because our data was only dealing with one Congress and we do not have the information to compare between different sessions, we are unable to speculate if majority parties actually do have less social ties. That is the result we did find for the 115th Congress, as conservative Members had less social ties and they were the majority party. More research is needed to determine the relationship between party majorities and communications fully.

Member's, staff, media, and constituents are all intertwined and interacting together to give us the institution we know today as the United States Congress. How they communicate and connect with one another is complex and unclear at this time. However, the team was able to find some clear glimpses of what patterns sustain communications the governing body of one of the most powerful countries in the world.

Conclusions

From simple letters to modern communication channels, political communication has faced great change. While Members of Congress still use traditional forms of media, they have chosen to adopt and use newer forms of communication as well. This has had far-reaching effects on both internal and external communication.

Today, Members of Congress are speaking with colleagues, staff, other agencies, and constituents in many different ways using many different platforms. Types of internal communications we were able to analyze included floor speeches, special orders, franking disbursements, and social media. External communications paths that our team analyzed included social media sites and official member webpages.

While examining trends and data in response to the research questions, we found that many previously identified trends and findings do not continue in 115th Congress. Members' connectivity differs according to partisan affiliation and ideological inclination. Moreover, the relationship between traditional and modern communication tools is not significant broadly speaking. Therefore, the effect of using traditional tools of communication on the use of modern communications, namely social media is not uniform or universal. Being active through use of floor days, one-minute speeches and special orders does not necessarily suggest that Members are using social media more or are more connected in social media. The benefits of using social media are seen beyond the previous experience of using traditional tools of communication.

Examining the trends of resource allocation and its relation with social media, the research has found that having larger communications staff increases the number of social ties throughout the platforms tested, while ideology and tenure had a larger impact. Therefore, the discussion of a Member's resource and his/her presence on social media has a solid basis to be further examined in the capacity of further research.

The research was also concerned with the leverage of leadership position in regard to the use of communication tools. We found that being in a leadership position increases a Member's social ties. Interestingly enough, ideology was the only variable that showed a large effect on audience when compared to leadership. Therefore, having a leadership position equips a Member with more social ties to further expand his/her leverage and influence.

The research, data, and conclusions our team were able to find are valuable insights that can be used moving forward. In some ways, this new information can be applied to website optimization, constituent care, and efficiency practices in the future. There are also areas that need further research. There is an opportunity to look into other forms of political communication that was not in the scope of this project such as dear colleague letters, actual staff salaries, and district demographic data.

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Appendix 1

Figure 1. A Conceptualization of Four Dimensions of the Mediatization of Politics (Strömbäck, 2008)
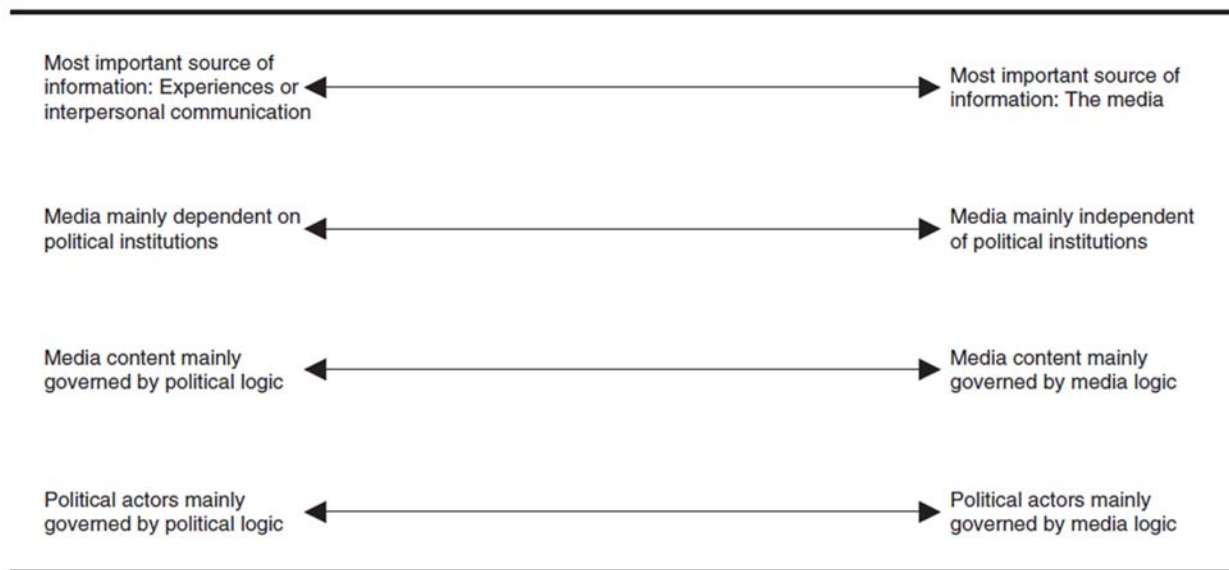
Figure 2. Mass media logic and network media logic (Klinger & Svensson, 2015)

	Mass Media Logic	Network Media Logic
Production	Expensive information selection and content generation by professional journalists according to news values	Inexpensive information selection and content generation by (lay) users according to their individual preferences and attention maximizing
Distribution	Content selected by expert/ professional gatekeepers – based on established news values – distributed to a paying fixed audience of subscribers	Users are like intermediaries, distributing popular content, sometimes like a chain letter, within networks of like-minded others
Media Usage	Location bound mass audience with limited selective exposure oriented towards passive consumption of information, based on professional selection.	Interest-bound and like-minded peer networks with highly selective exposure oriented towards interaction through practices of updating