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Twitter-Based Social Accountability Callouts

Dean Neu[1,2] · Gregory D. Saxton[1]

Abstract

The ICIJ's release of the *Panama Papers* in 2016 opened up a wealth of previously private financial information on the tax avoidance, tax evasion, and wealth concealment activities of politicians, government officials, and their allies. Drawing upon prior accountability and ethics focused research, we utilize a dataset of almost 28 M tweets sent between 2016 and early 2020 to consider the microdetails and overall trajectory of this particular social accountability conversation. The study shows how the publication of previously private financial information triggered a Twitter-based social accountability conversation. It also illustrates how social accountability utterances are intra-textually constructed by the inclusion of social characters, the personal pronoun 'we,' and the use of deontic responsibility verbs. Finally, the study highlights how the tweets from this group of participants changed over the longer-term but continued to focus on social accountability topics. The provided analysis contributes to our understanding of social accountability, including how the release of previously private accounting-based financial information can trigger a grassroots social accountability conversation.

Keywords #PanamaPapers · Social accountability · Social media · Tax avoidance

Social media platforms such as Twitter, with its 190 M + daily active users, have changed how social accountability is practiced (Gomez-Carrasco & Michelon, 2017; Saxton et al., 2021; She & Michelon, 2019). The ability of participants to respond immediately to on-going events and the ways that the platform aggregates and channels individual voices into a collective conversation provides grassroot participants with the ability to demand social accountability in a way that *registers with* politicians, governments, and their business allies (Butler, 2015). These characteristics have encouraged organizations as diverse as Wikileaks, the International Consortium of Investigative Journalists (ICIJ), USAID, and the World Bank to adopt social media-based social accountability strategies.

The current study examines the potential of Twitter-based social accountability callouts to facilitate longer-term social accountability consequences. Drawing upon the ideas of Butler (1995, 2015), Roberts (2009), and others, we propose that the illocutionary force of social accountability demands—and thus the likelihood that politicians, governments, and their business allies will register these demands—is related to both the volume of social media conversation and the intra-textual ways that participants speak about social accountability. Starting from this premise, we examine a single social media platform (Twitter) and a single social accountability conversation thread that was incited by the ICIJ's 2016 release of the *Panama Papers:* an information release that made public previously private financial information on the tax avoidance, evasion, and wealth concealment activities of politicians, government officials, and their allies. Using a dataset of almost 28 M tweets—the 2 M + English tweets that occurred during the five-month event period that immediately follows the ICIJ information release and 25 M + tweets that were sent by the initial group of participants during the subsequent 2017–2020 post-event period—we consider both the microdetails and overall trajectory of this particular social accountability conversation. The study shows how the publication of previously private financial information

✉ Dean Neu
  dneu@yorku.ca

  Gregory D. Saxton
  gsaxton@yorku.ca

[1] Schulich School of Business, York University, 4700 Keele St. West, Toronto, ON M3J 1P3, Canada

[2] Schulich School of Business, York University, 4700 Keele St. West, Room S343, Seymour Schulich Building, Toronto, ON M3J 1P3, Canada

triggered a short-term Twitter-based social accountability conversation. It also illustrates how participants enacted and performed social accountability through a series of intra-textual strategies involving the use of social character words, the personal pronoun 'we,' and deontic responsibility verbs. Finally, the study highlights how the use of deontic responsibility verbs as well as the *targets of social accountability* for this group of participants changed over the longer-term as the 2016 Panama Papers information release faded into the background but how, at the same time, tweets from this group of participants continued to focus on social accountability topics.

The provided analysis makes three contributions to our understanding of social accountability. First, the study examines the longer-term trajectory of the initial Panama Papers-focused social accountability event. Prior research demonstrates that social media-based social accountability conversations such as the ICIJ's information release of the Panama Papers in 2016 incited an immediate social media reaction and created a short-term latent network that re-engaged with the ICIJ's subsequent release of the Paradise Papers in 2017 (Saxton & Neu, 2021). The current study complements and extends these findings by following this group of Twitter participants forward in time and examining whether their interest in social accountability persisted and what types of topics they engaged with. The findings show that, although the topics of social accountability changed, the participants continued to speak about social accountability.

Second, the study illustrates the performative aspects of social accountability. Butler's (1995, 2010, 2015) research on performativity suggests that the words that Twitter participants use and the ways that words are intra-textually combined have important performative consequences. These callouts enlist intra-textual strategies (Briggs & Bauman, 1992) that both name and insert social actors into accountability relationships and set expectations as to how social characters are expected to act (Winkler, 2011). More specifically, we propose that the naming of specific audiences for the tweet, the use of the personal pronoun 'we,' and the enlistment of deontic responsibility verbs help to construct social accountability relationships by pairing social characters with expectations as to how these characters *should* act and what they *need/must* do. In turn, these modes of speaking have performative consequences for the speaker, for the social accountability network that is constructed by this mode of speaking, and for the illocutionary force of the collective social accountability demands that are voiced. The large-scale and longer-term dataset that we have assembled allows us to simultaneously examine these aspects of social media-based social accountability conversations and to thereby contribute to our understandings of social accountability.

Third, the study provides empirical evidence on whether concerns about social accountability include concerns about specific politicians and their business allies. The initial Panama Papers information release focused on the wealth accumulation activities of politicians, governments, *and their business allies*. As the ICIJ website notes, "the Panama Papers documents, combined with one year of reporting, revealed how *140 politicians*, as well as celebrities, drug dealers, alleged arms traffickers, and *the global elite*, obscured their wealth (legally and illegally) and questionable business deals through hard-to-trace companies and tax havens" (2022, *emphases added*). This focus on politicians and their allies is not surprising because the wealth accumulation activities of politicians often involve complex, hidden kickback schemes where politicians give something to business allies who, in turn, return a portion of the proceeds to the involved politicians. Our data allow us to examine whether the conversation stream contains specific references to business allies as well as more general references to businesses and corporations in both the Panama Papers event period and the post-event period. The results suggest that the social accountability conversation initiated by the Panama Papers information release focused on governments more so than on specific politicians and their business allies.

After this introduction, the next section provides a brief review of prior social accountability-focused research and outlines the theoretical frame that guides our research. This is followed by discussion of the research questions that we examine and the data/methods that will be used. The penultimate section contains our analyses, and the final section discusses the implications of the study.

Social Media-Based Social Accountability

The potential of social media to aggregate and channel geographically dispersed citizen voices came to the fore in 2011 with the Arab Spring uprisings, the Spanish Indignados movement, and the Occupy Wall Street protests (Tufekci, 2017). These social media-based voicing activities both facilitated the mass gathering of bodies-on-the-street and made it impossible for governments and their allies to *not register* the demands for accountability (Butler, 2015). As Mason (2013, p. 4) comments, social media "played a massive role in mobilizing the forces" that forced governments to listen.

The potential of social media to facilitate grassroots voicing behaviors was also noticed by international financial institutions such as the World Bank and USAID, encouraging them to introduce social media-based accountability initiatives. The World Bank introduced its Global Partnership for Social Accountability to both enhance citizen voices and to allow "governments to respond effectively" (World

Bank, 2018). In turn, USAID (2018) initiated its Making All Voices Count program designed to support "the development and spread of innovative approaches to fostering accountable, responsive governance" (Making All Voices Count, 2018).

Non-governmental organizations also registered the ability of social media to incite, coordinate, and aggregate individual voices. The International Consortium of Investigative Journalists (ICIJ), for example, uses releases of previously private information along with social media dissemination strategies to foment social accountability. The activities of the ICIJ presume that the making public of previously private financial information, when coupled with social media-based dissemination and conversation, will facilitate social accountability outcomes.

On the surface, the statistics reported by the ICIJ on their website suggest that social media-based social accountability is working. ICIJ information releases do incite large-scale social media conversations. Furthermore, the combination of the ICIJ information release and large-scale social media demands for social accountability appear to register with politicians, governments, and their business allies. Some governments have acted (Dubinsky, 2019). "In the days and weeks after the first Panama Papers stories were published, the prime minister of Iceland and a minister in Spain resigned" (ICIJ, 2022). Furthermore, "Pakistan's prime minister was sent to prison for corruption" (2022). And, in at least one case, a journalist working on the Panama Papers story—more specifically the connections between the Maltese government and their business allies—was allegedly killed by a business ally of the Maltese Prime Minister (ICIJ, 2019a). These results suggest that social media demands for social accountability do register.

This said, there is much that we still do not know about social media-based social accountability processes. As prior research notes, social media platforms like Twitter are corporate-controlled and constrained spaces of public appearance (Marquez, 2012, p. 29). Within such sites, the corporate owners are interested in monetizing participation by selling user data (Duguay, 2018). Furthermore, grassroots social media conversations must compete with 'fake news' and with non-human bots (Allcott & Gentzkow, 2017; Lazer et al., 2018; Shachaf & Hara, 2010; Wu & Liu, 2018). Consequently, social media platforms like Twitter both create the potential for the emergence of longer-term social accountability consequences and undermine the likelihood that the conversations will register with politicians, governments, and their business allies.

To help us to understand the longer-term potential of social media-based social accountability, we draw upon previous work by Butler (1995, 2010, 2015) and Roberts (2009) on accountability and performativity. More specifically, we start from the reworking of Althusser's interpellation example by Butler (1995) and then by Roberts (2009) to illustrate the idea of social accountability.

Althusser uses the term *interpellation* to explain how people become subjectified and, hence, accountable to someone or something. Roberts (2009) states:

> One of the resources for Butler's exploration of accountability is Althusser's version of accountability as interpellation (Althusser, 1971). Althusser imagines a street scene in which an individual is hailed with a 'Hey, you there!' It is possibly a policeman who does the hailing and its effect is that the hailed person turns around. For Althusser this interpellation and its resultant turning is an allegory for the creation of the subject; in turning the individual 'becomes a subject' (2009, p. 958).

In Althusser's example, it is the structures of society that become inculcated within the person being hailed and that thus pre-condition the person to turn. In contrast, within Butler's work on assembly, it is the calling out by a collective of people that encourages politicians, governments, and their business allies to turn and to hence register their accountability to the collective. As Roberts (2009) notes, "accountability is the condition of becoming a subject who might be able to give an account" (p. 959) and that "the subjection in this process in part lies in the way in which accountability involves being recognised on the other's terms" (p. 960).

The callout example is central to the current study because it both captures the potential of Twitter and other social media mediums to facilitate social accountability and allows us to highlight what makes social media-based forms of social accountability different. For example, the type of social media-based accountability event that Butler and others such as Tufekci (2017) talk about consists of a collective of people simultaneously calling out politicians, governments, and their business allies. Prior to the advent of social media, these callouts would have taken place in front of a government building or at the head office of a corporation or at the annual general meeting for the corporation (cf. Apostolides & Boden, 2005). If the gathering was large enough, it would be reported on the television and in the newspaper and thus would be disseminated to a larger audience. It was this style of social accountability that underpinned the pioneering social accountability activities of organizations like the Interfaith Centre on Social Responsibility (ICSR). The ICSR, which was founded in the 1970s, can be viewed as the precursor to the emergence of today's social media-based social accountability processes in that the ICSR used a variety of communication activities to both organize on-the-ground events as well as to sustain a social accountability collective between events (Saxton & Neu, 2021).

In contrast to the style of social accountability practiced by ICSR in its early years, social media platforms like

Twitter allow geographically dispersed groups of people across multiple countries to participate in these callouts. First, participants can appear on Twitter and voice their approval of what other participants are saying by 'liking' individual tweets: we suggest that this is like appearing at a public demonstration and perhaps clapping or chanting with the other participants (cf. Butler, 2015). Second, participants can disseminate the messages of other participants to their followers by retweeting the messages. Finally, participants can more actively participate in the discussion of what is happening and what should be done. We propose that these modes of participation increase the possibility that politicians, governments, and their business allies will 'turn' and thus register that they are accountable to the collective.

Implicit within social media-based forms of social accountability is the presumption that callouts are what Butler refers to as a perlocutionary performative. Following from Austin, Butler defines performativity as a "characteristic of linguistic utterances that, in the moment of making the utterance, [the utterance] makes something happen or brings some phenomenon into being" (2015, p. 28). Illocutionary utterances are those that "brings what it states into being" whereas perlocutionary utterances are those that "makes a set of events happen *as a consequence* of the utterance being made" (2015, p. 28, emphases added). It is for these reasons that Butler states that "the utterance alone does not bring about the day, and yet it can set into motion a set of actions that can, under certain felicitous circumstances, bring the day around" (2010, p. 148).

The suggestion that Twitter callouts are a type of perlocutionary performative foregrounds two important aspects of such callouts. For example, like physical on-the-ground demonstrations, it highlights that the illocutionary force and, hence, the likelihood that callouts will result in politicians, governments, and their business allies registering the demand is contingent on the volume of callouts at a moment in time as well as the persistence of the callouts. As Butler notes in her discussion of Althusser's 'Hey You' example, repetition is a component of getting someone to register the callout (1995, p. 16).[1] Of equal importance, these callouts have potential performative consequences for not only the external targets of accountability demands, but also for the individuals and the collectives that participate in demanding accountability. As Roberts (1991, p. 356) comments, formulating and articulating an accountability demand has "strategic dimensions" in that the demand itself constructs not only the addressee but also the addressor. Indeed, it is the identification with the collective and the continued

participation in social accountability conversations that constructs participants as a particular type of acting subject and inculcates social accountability practices as a habit and part of one's social identity. In this regard, Twitter social accountability callouts have short-term and longer-term performative consequences *even if* politicians, governments, and their business allies do not register the *immediate* social accountability demand.

Taken together, the preceding discussion proposes that Twitter-based social accountability processes involve the demanding of reasons for conduct (Roberts, 1991, p. 356; Roberts & Scapens, 1985, p. 447) and the sometimes registering of these demands by politicians, governments, and their business allies. Social accountability, in this regard, is a form of public accountability where there is an "informal but direct accountability to the public, interested community groups and individuals" (p. 225) that flows from the existence of a democratic system where governments are elected by the people (Sinclair, 1995, p. 221).[2] Within these social media-based social accountability processes, callouts have both short-term and longer-term potential performative consequences. As noted previously, Twitter is a medium that easily allows people to voice their social accountability concerns and to thus participate in a collective social accountability conversation. It is this aggregation of individual voices along with the persistence of voicing behaviors that contribute to the illocutionary force of social media-based social accountability conversations and to the likelihood that social accountability demands will register with politicians, governments, and their business allies. Finally, these acts of speaking truth to the powerful also have performative consequences for individual participants and for the social accountability collective. The next section builds upon these ideas and discusses the micro-intra-textual linguistic strategies that are used construct and demand social accountability.

The Linguistic Construction of Social Accountability

Whereas the preceding section proposes that Twitter conversations can result in two types of longer-term performative consequences, the current section suggests that the intra-textual construction of individual tweets help to construct and sustain a social accountability conversation. For example, at the individual tweet level, social accountability is, in

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[1] Butler also notes that there is always the risk of a certain misrecognition, including a resistance to "being addressed in that way" (1997, p. 94).

[2] Democratic processes make possible an indirect form of perlocutionary consequences whereby the voicing activities of geographically dispersed participants capture the attention of people who are citizens of a particular country and who can, thus, use their voting activities to hold governments and politicians accountable.

the first instance, constructed via the words that the speaker chooses to use, including: (1) the specific naming of addressees, (2) the insertion of the speaker as an addressee by using the personal pronoun *we*, and (3) the inclusion of deontic responsibility verbs. In keeping with the previous discussion of callouts, addressees can be named via the direct inclusion of a social character within a tweet. These insertions focus attention on characters that are relevant to the social accountability narrative (Jones 2014) and begin the process of constructing a logical structure regarding what might otherwise appear as unconnected, isolated events and social characters (Preuss & Dawson, 2009, p. 138). Furthermore, the inclusion of multiple social characters within a tweet creates a space for juxtaposition and for the construction of "particular understandings of individuals and groups, how they are interrelated and how they should behave" (Winkler, 2011, p. 654). As Farias et al., (2021, p. 129) note, these strategies help to build a normative narrative regarding social accountability since there is a 'moral to the story' even when a narrative does not take an explicit ethical position.

Second, speakers can insert themselves as an addressee via the utilization of the personal pronoun *we*. Butler states that the use of we allows speakers to "constitute themselves as the people in the course of enacting or vocalizing that plural pronoun" (2015, p. 168). This "enactment is performative insomuch as it brings into being the people who it names, or it calls upon them to gather under the utterance" (p. 157). And, in doing so, it rejects the individualization of responsibility that is both the premise of, and justification for, neo-liberal policies that unequally distribute the rewards and risks of social activity (p. 16). This invocation, by fusing the "I" into a "we," has illocutionary/perlocutionary performative consequences for the speaker as well as perlocutionary performative consequences for other participants (p. 52). Butler's comments draw attention to the ways that speaking as part of a collective, rather than an individual, inserts the speaker and the collective into a social accountability relationship. This form of insertion both makes individual speakers part of, and responsible to, the collective and partially addresses the power imbalance that exists between governments and individuals (Butler, 2015).

Third, the inclusion of 'responsibility' verbs facilitates the construction of deontic utterances; that is, utterances that express a viewpoint that enjoin a social actor to act based on a normative justification (Dignum & Weigand, 1995; Forrester, 1989). DeCew, in her review of Forrester (1989), states that "deontic speech is the language of obligation and permission" (DeCew, 1995, p. 527) that is framed by an external normative reference point. Deontic speech is about the "possibility and necessity in terms of the freedom to act" (Wikipedia, 2021). Responsibility verbs such as "demand" ask for something with proper authority whereas the responsibility verbs "want" and "need" express necessary

obligations (Tregidgo, 1982, pp. 76–77). Finally, the modal verb "should" explicitly enlists an external deontic position to express a responsibility or obligation to act (Suhadi, 2017; Zhang, 2019, p. 881). The deontic use of these verbs—what we call *responsibility verbs*—facilitate the construction of utterances about accountability. As Tregidgo (1982, p. 77) and Butler (2015, p. 208) suggest, it is the pairing of social characters who have the potential to act, with modes of speaking that enjoin them to act because it is an obligation, that constructs addressees who have a responsibility to act.[3] We suggest that these responsibility verbs are a salient component of social accountability utterances.

The preceding foregrounds how the intra-textual selection and placement of words construct tweets that are about social accountability. This said, it is also important to consider how individual tweets accumulate and help to construct an aggregate conversation stream that is about social accountability. Individual tweets are intra-textual constructions that combine and juxtapose social characters who may, or may not, be the addressees, topic words that tell the audience what the utterance is about, and verbs (including deontic responsibility verbs) that animate action. Individual tweets can enunciate a social accountability perspective; however, it is the aggregate set of tweets that constructs a more complete narrative about the need for social accountability. For example, consider the following three tweets:

T1: "governments should stop the rich from hiding their money"
T2: "politicians are in bed with the rich"
T3: "less tax evasion means more money for social program"

Individually, each tweet has a topic (hiding money, alliances, tax evasion, social programs) social characters (governments, politicians, the rich), and (responsibility) verbs. Furthermore, each tweet can be read as a (partial) commentary about social accountability. At the same time, it is only when viewing the utterances in aggregate that a more complete narrative about the need for social accountability becomes visible. In this example, the aggregate narrative tells a story about why governments don't stop tax evasion (because politicians are in bed with the rich), the consequences of tax evasion (less money for social programs), and, hence, the need for government action to rectify the situation.

The above example illustrates how a collective social accountability demand is constructed from the utterances

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[3] Butler also notes that the invocation of "we" can be, by itself, both a judgment and an assertion regarding the moral responsibility to act (2010, p. 157).

of individual participants. Butler notes that such demands are *polyvocal* in that not all speakers say exactly the same thing (2015, p. 167). Furthermore, the demands are always *emergent* in that they result from the sequential combining of different voices and perspectives (p. 169). Finally, demands for accountability are often times *muffled* because social media is "social," and participants can choose to talk about whatever topic strikes their fancy (Suddaby et al., 2015; Tufekci, 2017). These aspects of social media-based social accountability conversations foreground the importance of simultaneously examining the intra-textual construction of individual utterances *and* the aggregate, emergent inter-textual social accountability narrative. At the same time, it also acknowledges that social media conversations are invariably polyvocal, chaotic and potentially muffled.

Finally, socially accountability is constructed by the continued participation of Twitter users in conversations about social accountability. Saxton and Neu (2021), for example, show how many of the participants who tweeted about the 2017 ICIJ Paradise Papers information release had previously participated in the 2016 Twitter conversation that was triggered by the ICIJ's Panama Papers information release. Furthermore, 'lead' users were more likely to remain engaged and to participate in this subsequent Twitter conversation. The authors conclude that the initial Panama Papers information release helped to construct a latent social accountability network that was re-activated by the subsequent Paradise Papers information release (p. 3). These findings are important because they demonstrate how social accountability networks respond to similar types of triggers (e.g., a subsequent ICIJ information release). At the same time, we do not know if the social accountability concerns of this group of participants persist over the longer-term (i.e., more than a year) and whether participants also tweet about other non-ICIJ triggered social accountability events.

The preceding discussion proposes that the construction of Twitter-based social accountability has three dimensions. It is constructed by the intra-textual use of certain word combinations within individual tweets. On a more aggregate level, social accountability is built via the accumulation of individual tweets into a conversation stream about the event that triggered the Twitter responses. Finally, social accountability is sustained by the continued longer-term participation of these users in other social accountability conversations. The next section describes the initial Panama Papers disclosure event that is our starting point for this study and outlines the theoretically informed research questions that we will investigate.

Research Questions About the Panama Papers

On April 3, 2016, the ICIJ and its newspaper affiliates published the Panama Papers. The documents consisted of 11.5 million documents and 2.6 TB of data which contained details on how politicians, government officials, and businesspeople were avoiding/evading taxes via the use of secretive offshore tax regimes. This release of previously private financial information triggered more than 5 million Twitter responses over the following five months (April 3rd to September 1, 2016) within the hashtag categories #PanamaGate, #PanamaPapers, or #PanamaLeaks.

The participants that appeared on Twitter and what they said during the April to August 2016 period, as well as what they said afterward during the 2017 to early 2020 period, is the focus of our study. More specifically, we examine the 2 M + English tweets that occurred during the five-month event period and 25 M + tweets that were sent by the initial group of participants during the 2017 to early 2020 post-event period. The data allow us to examine four theoretically informed research questions.

First, we use the 2 M + event-period tweets to consider the aggregate-level Twitter conversation that was triggered by the whistle-blowing activities of the ICIJ. As mentioned previously, the incorporation of social media into social accountability initiatives has become commonplace with organizations such as the ICIJ, Wikileaks, the World Bank and USAID adopting this approach and assuming that it will result in perlocutionary performative consequences. This said, we also noted that social media is a medium where participants have freedom to talk about whatever they want. For these reasons, it is important to consider the discursive structure of the aggregate communication stream during the event period and the centrality of specific social accountability topics and specific addressees. Such an examination helps us to assess whether the whistle-blowing activities of the ICIJ had the expected perlocutionary consequences of inciting a social accountability conversation. It also foregrounds the microdetails of this conversation.

Second, we examine the post-event period to understand what this initial group of participants talked about *after* the Panama Papers. Arguably, the ICIJ information release incited this group of social actors to respond and to participate in a Twitter communication stream that *aggregated into* a social accountability conversation. This said, what happened afterward? Did this group of participants continue to talk about topics and social characters in ways that emphasized social accountability? Furthermore, which topics from the initial Panama Papers conversation persisted and remained central? Finally, what new social accountability topics emerged? The 25 M + tweets for the 2017 to early 2020 post-event period provide an invaluable window into the aggregate social accountability consequences of the tweeting activities of this group of participants.

Third, we move down a level and analyze the intra-textual construction of individual tweets. As we mentioned previously, individual tweets sometimes contain a topic, social

characters, and deontic responsibility verbs, and these intra-textual pairings communicate a partial social accountability message. In this analysis part, we harness the power of the size of our dataset to partially mitigate the noisiness of the individual tweets and to identify the direct intra-textual connections between certain accountability addressees and topics. The analysis highlights how the Panama Papers Twitter participants intra-textually linked accountability addressees and topics.

Finally, we provide supplementary analysis about whether individual tweets called out specific politicians and their business allies within the social accountability conversations. As mentioned previously, the Panama Paper information release made visible the connections between the wealth accumulation activities of specific politicians and the business allies that might have facilitated this wealth accumulation. The fourth research question examines whether the tweets spoke about specific business allies and/or businesses and corporations more generally during the Panama Papers event period. It also examines whether participants continued to talk about businesses and business allies in the post-event period.

To summarize, the analyses that follow consider four specific research questions:

RQ1: what is the discursive structure of the Twitter conversation stream in the five months immediately after the ICIJ data release? Which addressees and topics were central?

RQ2: how did the discursive structure and the centrality of specific discursive components of the tweets sent by the initial Panama Papers participants change in the post-event period?

RQ3: what were the direct intra-textual ties among the word combinations contained within the individual tweets?

RQ4: did the social accountability conversation stream talk about specific politicians and their business allies during the event and post-event periods?

Method

Starting on April 3rd, 2016 (the date the Panama Papers were released), we used custom Python code to begin to download all tweets that contained the hashtags #Panamagate, #Panamapapers, or #PanamaLeaks into an SQL database. By the end of August 2016, tweet activity had decreased to about 400 original messages per day, so it was, at this point, that we decided to terminate the first phase of data gathering. In total, there were 5,099,524 tweets sent between April 3rd and September 1st, of which 2,032,829 were written in English. In September 2019, we started

to gather the subsequent tweets sent by the Twitter users who participated in the initial Panama Papers conversation. The Twitter API allowed us to download and save the most recent 3,200 tweets for each user. In early 2020, after four months of gathering time, our Python script finished running. The resulting dataset consists of 25,956,003 English-language tweets sent between 2017 and early 2020. We use the 2,032,829 tweets from 2016 as our event-period data and the 25,956,003 tweets from 2017 to early 2020 as our post-event data.

Not surprisingly, datasets of this size are more complicated to manipulate and analyze than smaller datasets. Previous research, for example, has used textual analysis algorithms within the open-source statistical software R to generate a document-term matrix (where the words in each tweet are counted and quantified) and to then use the document-term matrix (dtm) to identify the most frequent and theoretically interesting words (cf. Neu et al., 2020). Instead of generating a complete document-term matrix for the 27,988,832 tweets and then generating a word frequency listing, the current study used a "parts-of-speech" module within R to identify the most frequent nouns for each year. We reviewed the list of nouns and then selected the nouns that members of the research team agreed were either topic nouns or social character nouns.[4] We also used the parts-of-speech module to identify the most frequent verbs for each year. While we had a pre-defined list of responsibility verbs from our reading of previous academic literature, the generated verb listing helped us to identify which responsibility verbs were used in the tweets.[5] The listings of topic nouns, social character nouns, responsibility verbs and the personal pronoun 'we' were then used to write a selective dtm script that generated a partial dtm for the dataset.[6] This method took significantly less time (the script ran for about 3 days) and less computer memory than generating a full dtm. Table 1 provides descriptive statistics on the prevalence of the identified topic words, character words, and responsibility verbs within the data.

Table 1 and the subsequently reported bivariate results for the two periods contained in Table 2 illustrate not only the topic nouns and social character nouns that were

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[4] The most prevalent nouns that we do not include in our analysis were: *time, world, today, day, year, life,* and *money*. Not surprisingly, the prevalence of the different nouns varied somewhat by year.

[5] The most prevalent verbs within the corpus were: *have, get, know, make, do, has, is,* and *are*.

[6] We also considered the words 'our' and 'us' since these two words, like 'we,' signify a collective of people. Both words were less prevalent than 'we.' Because the types of social accountability sentences that are constructed with 'our' and 'us' are different and less straightforward to interpret than sentences with 'we' (e.g., 'we demand'), we did not include these two words in the subsequent analyses.

prevalent within the corpus but also how the prevalence varied between the event and post-event periods. Additionally, the addressee/social character *women* was prevalent in both periods and thus, for this reason, we include women as a specific addressee in the subsequent analysis. As expected, the prevalence of these words within the entire Twitter communication stream that we examine is low. These prevalence levels are not unexpected given that Twitter conversations involving social accountability are also social conversations. We return to this observation in the discussion section.

We next used social network analysis methods to analyze the data contained in the selective dtm. Social network analysis methods start from graph theory to identify *nodes* and *edges* within a social network where the words are the nodes and the edges are the connections among the different nodes. Edges are coded 1 (zero otherwise) when a tweet contains more than one node: for example, a tweet containing the words government and tax would result in a government/tax edge. The *igraph* package in R was used to loop through the event-period data and the post-event-period data to generate a graphical representation of the connections among the different variables in each of the two periods. Nodes that are more central appear in the center of the graph, and the distance between each pair of nodes reflects the degree of co-occurrence of the nodes in the document corpus. Social network methods are extremely useful because such methods allow us to simultaneously examine the connections among characters, topics, and responsibility verbs. Previous social science and management research have used similar network mappings to analyze the discursive structure of textual corpora (e.g., Borgatti & Cross, 2003; Chapman, 1998; Neu et al., 2021; Richardson, 2009).

Social network algorithms provide us with both a graphical representation of centrality as well as quantitative measures of centrality: quantitative measures that make visible network characteristics that are difficult to discern within the graphical representations (Iacobucci et al., 2017). The current study uses *page rank centrality*, which was developed by Google to rank web pages, as our measure of centrality.[7] While we report both, the subsequent analyses focus on the rank order results rather than the absolute centrality measure values since it is the relative importance of the nodes that

Table 1 Descriptive statistics

	N	Mean	Min	Max
Addressees				
Government	27,988,832	0.010	0	1
We	27,988,832	0.043	0	1
People	27,988,832	0.037	0	1
Women	27,988,832	0.006	0	1
Verbs				
Need	27,988,832	0.015	0	1
Want	27,988,832	0.014	0	1
Should	27,988,832	0.017	0	1
Demand	27,988,832	0.002	0	1
Nouns				
Company	27,988,832	0.008	0	1
Protest	27,988,832	0.005	0	1
Leader	27,988,832	0.007	0	1
Journalist	27,988,832	0.003	0	1
Corruption	27,988,832	0.003	0	1
Scandal	27,988,832	0.002	0	1
Money	27,988,832	0.009	0	1
Tax	27,988,832	0.012	0	1
Bank	27,988,832	0.003	0	1
Politician	27,988,832	0.003	0	1
Police	27,988,832	0.005	0	1
Law	27,988,832	0.005	0	1
Trump	27,988,832	0.019	0	1
Media	27,988,832	0.008	0	1
Country	27,988,832	0.009	0	1
Family	27,988,832	0.008	0	1
Business	27,988,832	0.005	0	1
Healthy	27,988,832	0.005	0	1
Work	27,988,832	0.015	0	1
Climate	27,988,832	0.005	0	1
Community	27,988,832	0.003	0	1
Children	27,988,832	0.005	0	1
School	27,988,832	0.007	0	1
Event	27,988,832	0.073	0	1

Variables summarized above are all binary variables indicating whether a tweet contains the indicated accountability addressee, responsibility verb, or noun

we are interested in. The social network graphs and centrality results for the event and post-event periods are used to consider research question one (RQ1) and research question two (RQ2).

For research question three (RQ3), we use LASSO (least absolute shrinkage and selection operator) regression techniques (Tibshirani, 1996) built upon logistic regression to consider the direct connections between the social accountability addressees and the other character words, topic words and responsibility verb words. Whereas social network analysis methods focus primarily on the positioning and

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[7] Hansen et al. (2020) note that "the PageRank algorithm used by Google's search engine is a variant of Eigenvector Centrality, primarily used for directed networks. PageRank considers (1) the number of in-bound links (i.e., sites that link to your site), (2) the quality of the linkers (i.e., the PageRank of sites that link to your site), and (3) the link propensity of the linkers (i.e., the number of sites the linkers link to)." Rosa et al., (2018, p. 3) provide more detail, stating that the page rank measure is a type of random walk model that focuses on the probabilities that a random walker follows a certain pathway from node to node.

Table 2 Difference in means between event and post-event periods

	Event (n = 2,032,829)	Post-event (n = 25,956,003)	p
Company	0.0387 (0.1928)	0.0051 (0.0715)	0.000
Protest	0.0193 (0.1375)	0.0037 (0.0605)	0.000
Leader	0.0172 (0.1300)	0.0059 (0.0763)	0.000
Journalist	0.0101 (0.0999)	0.0023 (0.0483)	0.000
Corruption	0.0241 (0.1533)	0.0015 (0.0381)	0.000
Scandal	0.0206 (0.1419)	0.0005 (0.0233)	0.000
Money	0.0337 (0.1804)	0.0067 (0.0814)	0.000
Tax	0.1039 (0.3051)	0.0043 (0.0657)	0.000
Bank	0.0154 (0.1231)	0.0022 (0.0468)	0.000
People	0.0237 (0.1521)	0.0378 (0.1906)	0.000
Government	0.0199 (0.1395)	0.0093 (0.0960)	0.000
Politician	0.0117 (0.1076)	0.0022 (0.0470)	0.000
Police	0.0020 (0.0444)	0.0049 (0.0695)	0.000
Want	0.0069 (0.0827)	0.0143 (0.1188)	0.000
Need	0.0127 (0.1118)	0.0156 (0.1240)	0.001
Should	0.0175 (0.1312)	0.0173 (0.1304)	0.021
Demand	0.0052 (0.0716)	0.0013 (0.0357)	0.000
Law	0.0162 (0.1264)	0.0040 (0.0629)	0.000
Trump	0.0028 (0.0533)	0.0202 (0.1408)	0.000
Media	0.0146 (0.1200)	0.0071 (0.0839)	0.000
Women	0.0005 (0.0231)	0.0067 (0.0818)	0.000
Country	0.0071 (0.0841)	0.0091 (0.0949)	0.001
Family	0.0162 (0.1262)	0.0077 (0.0874)	0.000
Business	0.0060 (0.0773)	0.0046 (0.0678)	0.001
Healthy	0.0011 (0.0331)	0.0048 (0.0691)	0.000
Work	0.0061 (0.0776)	0.0155 (0.1235)	0.000
Climate	0.0002 (0.0156)	0.0053 (0.0726)	0.000
Community	0.0002 (0.0127)	0.0028 (0.0533)	0.000
Children	0.0023 (0.0478)	0.0048 (0.0691)	0.000
School	0.0005 (0.0216)	0.0071 (0.0840)	0.000
We	0.0370 (0.1887)	0.0439 (0.2048)	0.000

Table shows mean and standard deviation for variables in the event and post-event periods, along with significance values for t-tests of the difference in means across the two periods

centrality of individual nodes within the *entire* network, our use of LASSO regression allows us to examine the direct intra-textual ties that exist between accountability addressees and the other variables within the tweets.[8] LASSO techniques are becoming more widely used for testing associations in textual accounting and reporting data (e.g., Berg et al., 2022; Elamir & Mousa, 2020; Parshakov & Shakina, 2020); in line with such uses, this technique allows us here to see information on the topics that are most closely related

with our responsibility verbs and accountability addressees. While similar in concept to regular regression techniques, LASSO are more appropriate in situations such as ours on account of the penalty function that is applied to variable coefficients as a way of correcting for potential multicollinearity among the independent variables. The use of a penalty function also helps to avoid over-fitting of the data—something that becomes more problematic when the amount of data becomes extremely large such as within our dataset.[9] LASSO techniques also improve the interpretability of regression techniques by pushing the coefficients of unimportant variables toward zero (Tibshirani, 1996); one of the unique features of LASSO regressions is that LASSO regression techniques focus on identifying independent variables that have predictive value rather than on the overall fit of the regression model. It does this by only including coefficients for variables that are significantly related to the dependent variable since the penalty function sets nonsignificant coefficients to zero (Hastie et al., 2021, p. 6).[10] LASSO regression methods thus do not emphasize the overall r-squared value because "the goal of using LASSO is obtaining a *sparse* representation (of a predicted quantity) in the sense of not having many covariates," whereas the traditional r-squared measure "tends to favor models with lots of covariates" (Stack Exchange, 2022). For these reasons, LASSO regression is particularly suited to the analysis of large-scale noisy data and for the identification of independent variables that have predictive value.

Research question 4 (RQ4) about the prevalence of specific politicians and their business allies within the conversation stream required a different approach since tweets mentioning the formal names of specific politicians and their business allies were much less frequent and thus did not appear on the list of most frequent nouns. To identity these individuals, we returned to a section on the ICIJ (2022) website that talks about Panama Papers 'power players.' We reviewed the site to identify business allies who were mentioned alongside specific politicians. The website specifically mentioned politician-business ally pairings in eight countries: Brazil, China, Cote d'Ivoire, Hungary, Italy, Mexico, Russia, and Venezuela. Using this list as our starting point, we re-ran our selective dtm script to generate a frequency listing for both the specific politicians and their business allies. The frequency counts for the event and post-event periods provide supplementary information regarding

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[8] Social network analyses refer to these direct ties as an *ego network* (Everett & Borgatti, 2005), suggesting that techniques such as logistic regression help to foreground these ties (cf., Stolz & Schlereth, 2021).

[9] We use the 'best lambda" as the penalty function which, according to Hastie et al. (2021), provides the most robust results.

[10] We also ran the results reported in Tables 5 and 6 using the more familiar logistic regression techniques. The direction of the coefficients for the LASSO regressions and logistic regressions are mostly identical.

the relative amount of attention given to business allies vis-à-vis the involved politicians.

The analysis sections that follow use these methods to consider our four research questions. However, before doing this, we provide two sets of descriptive and illustrative data to help readers visualize the data. First, Table 2 includes descriptive statistics and difference in means (t-tests) for the variables included in the subsequent analysis for the event and post-event periods. The data contained in Table 2 show that mean values for most variables vary between the two periods and that these differences are significant. Most of the differences are consistent with our expectations: for example, the terms *corruption*, *tax*, *bank*, *government*, and *politician* are more prevalent in the event period whereas *Trump*, *work*, *climate*, *healthy*, *community*, and *school* are more prevalent in the post-event period. The subsequent analyses examine these differences in more detail.

Second, Table 3 contains illustrative tweets from the dataset to help readers understand the content of individual tweets. These tweets illustrate, but do not represent, the data since there is no way for us to find and select fully representative tweets from within a dataset this large. The illustrative tweets were generated by filtering the event and post-event tweets by addressee, running the UPOS (universal parts-of-speech) module to identify most occurring nouns, and then searching for tweets that contained these nouns. Table 3 provides the illustrative tweets.

Analysis

The Event-Period Discursive Network

Figure 1 maps the discursive structure of communication during the five months immediately after the publication of the Panama Papers. It shows a discursive core of twelve nodes, an inside peripheral ring consisting of nine nodes and an outside peripheral ring of ten nodes. Not surprisingly, the outside peripheral ring contains many of the topics that were identified from the most occurring nouns in the post-event period—nodes that we didn't expect to be central during the event period (the node *journalist* was an exception in that it was prevalent during the event period but non-central). The discursive core contained the topics at the heart of the Panama Papers (*tax*, *corruption*, *scandal*, *money*) as well as the addressee *we* and the responsibility verb *should,* while the addressee *government* appears slightly less central. Interestingly, the overlapping circles for the nodes in Fig. 1 (depicting the closeness of the nodes) hint at the inter-textual and intra-textual construction of individual tweets as well as interchangeable words that might be used in individual tweets. For example, Fig. 1 hints that the words we and *people*

might be used inter-changeably alongside the responsibility verb *should* to enunciate an accountability demand in the form *we should* or *people should*.

Table 4 contains the *page rank centrality* scores and rank orders for both the event period and post-event period. The numeric page rank centrality scores reported in Table 4 provide us with an alternative way of visualizing and understanding the discursive structure. As mentioned previously, the page rank centrality index is a closeness centrality measure that calculates which nodes are closest to other important nodes. As shown in the *Event Period* columns, for this initial five-month period, the topics *tax*, *money*, *company*, *scandal* and the addressee *we* are the most central nodes followed by *law*, *people*, *corruption* and *should*. As the subsequent section illustrates, the discursive structure (and the centrality of individual nodes) changes in the post-event period.

The provided results foreground three aspects of social media-based social accountability. First, the publication of previously private financial information by the ICIJ did incite Twitter communication about pertinent topics such as *tax*, *money*, *company(ies)*, *corruption*, and the *law*. In this regard, the information release was a perlocutionary performative occurrence that triggered the felicitous event of public discussion of important topics. This felicitous event was exactly what proponents of social media-based social accountability initiatives hope for.

Second, the centrality of the different accountability addressees was different from our preconceptions. While the addressee *we* was clearly a central node, *government* was less central and *politicians* even less so. We presumed that the information release would propel the role of governments in allowing tax avoidance and evasion to the fore but this effect was less strong than we expected. Similarly, we expected that *politicians* would be a central node: both because specific politicians were named in the Panama Papers as one of the beneficiaries of corruption and because politicians influence government policies.

Third, the role of responsibility verbs in articulating accountability demands was less central than our preconceptions. While the responsibility verb *should* was in the top third most central nodes, the verbs *need*, *want* and *demand* were in the middle third. This result suggests that the conversation contained more declarative statements describing the situation and expressing an opinion as opposed to enunciations that attempted to explicitly animate action.

The findings regarding the central-but-not-too-central position of government and the not-too-central position of the responsibility verbs are interesting. One possible interpretation is that tweets during the event period focus on reacting to the information release rather than articulating the types of actions that should/must/need happen. The post-event centrality results shown in the subsequent section allow us to consider whether this mode of reacting changed.

Table 3 Illustrative tweets

Event-period tweets

People should not be afraid of their *governments*. Governments should be afraid of their people

We need these whistleblowers to bring to task the greedy evil rich and corrupt *governments*

We blame those on disability & welfare for costing our *governments* when the rich cost us SO much more

Tax avoidance is """"legal"""", but only because our *governments* allow it. "*Money* sheltered in tax havens is revenue governments do not get to fund public services

Can *we* start thinking of *tax* avoiders & evaders as *people* who steal money from hospitals and schools?

Politicians of every hue are invested in sinister *money* laundering firms like India Bulls. Kill *corruption*

Vladimir has been Putin *money* aside. Nawaz is not Sharif. Lionel is Messing with *taxes*. Jinping's anti-*corruption* drive is X

UK *Govt* has and is targeting disabled *people*. It's outrageous discrimination. Meanwhile, they avoid paying *tax*

People who use *tax* havens are responsible for the destruction of public services, for inequality & poverty & should go to jail

So only the little *people* have to pay *taxes* into a system that is constantly saying *we need* to cut services? F that !…

Post-event-period tweets

There's no way else to say it, this *govt* is irresponsible, unreasonable, anti-*people*, corrupt etc

Democracy is a *govt* by the *people* & 4 the people: We install these demagogues thru our votes & *we should* remove them thru the same

As humanists, *we should* care about only one thing: the minimization of human suffering. However, bad the #EU is, we must not exit it. We must take it over, transform it and make it work

Yeah, *we* all did say that the *tax* cuts were there for the rich *people* and wouldn't benefit *people* below them and we were right

Occupy *should* have been storming these offshore *tax* havens in order to disrupt the real zeniths of modern *corruption*

tax haven disguising the extent of *corruption* among the world's wealthiest and most powerful

This is why i hate when *people* talk about some urgent need to teach financial literacy like nah *we need* to be teaching *people* about capitalism

Can understand young *people* asking why they *should* pay back student loans, given *corruption* exposed

It is so distorted and corrupt. *We need* a better *government*, more ethical *people* in charge

We won't be distracted from your efforts to give billionaires *tax* cuts, take *health* care from millions and deny *climate* change

The Post-Event Discursive Network

In the post-event period, we expected that the participants in the Panama Papers conversation would continue to talk about social accountability but that the topics and addressees would change. We were less certain about what to expect regarding the use of responsibility verbs because while the Panama Papers event was likely less topical, other issues with social accountability implications likely occurred. The results presented in Fig. 2 are partially consistent with these expectations.

Figure 2 illustrates a more dispersed discursive network in that there are a smaller group of nodes clumped together in the center. This is not surprising since the post-event discursive network that Fig. 2 maps consists of all the tweets sent by the Panama Papers participants. These participants came together to speak about the social accountability implications of a particular information release (the Panama Papers) but subsequent tweets are not focused on any single event. Thus, while we expected to see a continued interest among these participants in social accountability, we also expected to see a wider group of social accountability topics being discussed. Figure 2 social network map is consistent with this expectation.

Like the event period shown in Fig. 1, the post-event period shown in Fig. 2 draws attention to several groups of overlapping nodes. Of particular interest are two pairings near the center of the network: *people-should*, *we-need-women*. These pairings hint at the types of intra-textual and inter-textual juxtapositions that are occurring within the communication stream and within individual tweets. Direct and indirect utterances such as 'people should….,' '*we need…*,' and '*women need…*' articulate a social accountability perspective and a social accountability demand. These two pairings, along with the results reported in Table 2, draw attention to a changed emphasis on certain deontic responsibility verbs. More specifically, the bivariate results indicate that the verbs *want* and *need* were more prevalent in the post-event period whereas the centrality results shown in Table 5 show that *need*, *want*, and *should* are much more central in the post-event period. Taken together, the two sets of results suggest a changed speaking pattern in the post-event period compared to the event period: one that is consistent with *slightly less* immediate reactions and with *slightly more* enunciations about what different social accountability addressees need/want and should do. We return to the implication of these observations in the discussion section.

Fig. 1 Network of discursive structure of communication during the five months immediately after the publication of the Panama Papers. Figure shows sociogram developed from social network analysis of the corpus of 2 M *event-period* tweets. Nodes in the middle of the graph are more "central" to the discussion network, and the distance between each pair of nodes reflects the "closeness" of the nodes as seen in the co-occurrence of the given addressees, responsibility verbs, and nouns in the same tweet

In showing the page rank scores for both the event and post-event periods, Table 4 also facilitates a comparison of the page rank centrality index results for the post-event period with the event period. This mode of presentation allows us to consider how the relative importance of different topics and different addressees changed over time. For example, the *tax* topic that was at the heart of the Panama Papers conversation fell sixteen positions and dropped from the top third to the middle third. Similarly, the topics *law*, *company*, *corruption*, and *scandal* fell out of the top third, dropping 15, 16, 20, and 26 positions, respectively. The topics that became more central and moved into the top third were: *work* (moving 15 positions), *Trump* (moving 17 positions), and *country* (moving 8 positions). In terms of addressees, *government* moved into the top third, *we* remained in the top third, and *politicians* became even less central, moving into the bottom third. Finally, the responsibility verbs *should*, *need* and *want* all became more important and were in the top third.

The post-event discursive network and the changes in centrality rankings foreground two salient aspects of social accountability processes. First, the tweet topics change but

the importance of social accountability appears to remain. While we acknowledge that participants can tweet about topics in ways that do not pertain to social accountability, the increasing centrality of the responsibility verbs *should*, *need*, and *want* suggests that many of the tweets involving these responsibility verbs were about social accountability. This interpretation is supported by the LASSO regression results reported in Table 5 showing that the intra-textual presence of the new group of topics within a tweet predicts the inclusion of a responsibility verb in the same tweet. The reported LASSO regressions are based on the 25 M + tweets that were sent in the post-event period.

Second, the provided results raise questions regarding the social accountability addressees. Our preconceptions before starting the study were that *government* and the collective *we* were the primary social accountability addressees. At the same time, our theoretical framing suggested that a social accountability addressee could be any social group that was inserted into the Twitter conversation and had the ability to act and thus potentially set into motion felicitous perlocutionary social accountability consequences. The results reported for the event period as well as the post-event period

Table 4 Event-period and post-event-period page rank centrality scores for topics, verbs, and addresses

Topic/addressee/ responsibility verb	Event period		Post-event period	
	Page rank (rank order)	Page rank (raw score)	Page rank (rank order)	Page rank (raw score)
Tax	1	0.184	17	0.023
We	2	0.086	1	0.131
Money	3	0.060	10	0.030
Company	4	0.058	20	0.021
Scandal	5	0.055	31	0.007
Law	6	0.055	22	0.019
People	7	0.050	2	0.107
Corruption	8	0.048	28	0.011
Should	9	0.040	4	0.061
Leader	10	0.033	15	0.023
Family	11	0.032	11	0.026
Bank	12	0.031	27	0.012
Government	13	0.028	8	0.039
Need	14	0.027	3	0.063
Protest	15	0.024	24	0.018
Politician	16	0.023	26	0.014
Country	17	0.022	9	0.037
Media	18	0.021	12	0.026
Business	19	0.019	21	0.020
Want	20	0.018	5	0.051
Work	21	0.014	6	0.048
Demand	22	0.011	30	0.010
Journalist	23	0.011	29	0.011
Trump	24	0.008	7	0.045
Healthy	25	0.007	18	0.022
Police	26	0.007	23	0.018
Children	27	0.007	16	0.023
Women	28	0.006	14	0.024
School	29	0.006	13	0.025
Climate	30	0.005	19	0.022
Community	31	0.005	25	0.014

Table shows both the raw *page rank* centrality scores and the rank-ordering of those scores for the event (April 3, 2016–September 1, 2016) and post-event (2017–2020) periods. Rather than being categorized by addressees, responsibility verbs, and nouns as in Table 1, we present the findings here by rank order to facilitate discussion of the most central elements in the event period as well as how this ordering changed in the post-event period.

suggest that the *people* can be viewed as an addressee. The *people* as a social group is conceptually different from *we* because it implies a different degree of proximity and relationship to the speaker of the utterance (Butler, 2015). At the same time, these two forms of social accountability communication overlap in that, as Butler and others note, "*we are the people*." In addition to viewing the people as a social accountability addressee, the results suggest that *women* as

a social group can also be considered as an addressee. In the next section, we include these additional two addressees in our analysis of direct intra-textual ties.

Addressee Ego Networks

The discursive network graphs and page rank centrality indexes presented in the previous sections are excellent for summarizing the indirect *and* direct ties among the individual nodes because they do not only depend on direct connections among the nodes but also on the pathways. At the same time, the direct ties among nodes—what social network researchers refer to as the *ego network*—are also useful because such direct ties foreground the intra-textual connections. Table 6 shows the direct intra-textual connections between the accountability addressees *government*, *we*, *people*, *women* and the other nodes. Like the LASSO regression results presented in Table 5, the LASSO regressions reported in Table 6 attempt to assess whether the inclusion of certain topics and responsibility verbs can predict the intra-textual inclusion of a particular addressee within the tweet.

The provided results show the words that are both likely and unlikely to be included in a tweet containing the different addressees. The columns contained in Table 6 can be read downward to see the micro-ways that tweets involving the different addressees are constructed. Table 6 can also be read horizontally to better understand how tweet construction varies across addressees.

The results reported in Table 6 draw attention to three aspects of intra-textual social accountability communication. First, the inclusion of responsibility verbs within a tweet is positively associated with all four addressees. Like the results shown in Table 5, the use of responsibility verbs is a salient component of social accountability communication in that these verbs help to articulate a social accountability utterance. While such utterances can be constructed without responsibility verbs—especially during the event period where the Panama Papers topic is recognized as having social accountability implications—the direct intra-textual inclusion of a responsibility verbs explicitly signals the purpose of the utterance.

Second, a horizontal reading of the results shows the topics that are unlikely to be included in tweets containing specific addressees. More specifically, the topics *tax*, *climate*, *family*, *police* and *business* are positively associated with three addressees but not the fourth. The *tax* and *climate* topics are negatively associated with the addressee *women*, the *family* topic is negatively associated with *government* whereas *police* and *business* are negatively associated with *we*. This set of results indicate that, at least at an intra-textual level, not all addressees are directly connected to all social accountability topics.

Fig. 2 Network of discursive structure of communication in post-Panama Papers period. Figure shows sociogram developed from social network analysis of the corpus of 25 M *post-event period* (2017–2020) tweets sent by those who had participated earlier in the event-period discussion. Nodes in the middle of the graph are more "central" to the discussion network, and the distance between each pair of nodes reflects the "closeness" of the nodes as seen in the co-occurrence of the given addressees, responsibility verbs, and nouns in the same tweet

Finally, the indicator variable *event,* which was coded one if the tweet occurred in the five months after the Panama Paper information release (and zero otherwise), is positively associated with *government* but not any of the other three addressees. This result suggests that an event-period tweet, compared to a post-event-period tweet, is more likely to include the *government* as an explicit social accountability addressee compared to the other addressees. This result is not surprising since *governments* are assumed to have *both* the responsibility for negative social accountability outcomes such as tax avoidance/evasion and the ability to act in ways that change the status quo.

Business Allies

As mentioned previously, implicit within the notion of social accountability is the idea that social accountability callouts will hold governments, politicians, *and their business allies* accountable. Within the Panama Papers documents (ICIJ, 2022), eight politician-business ally pairings were explicitly mentioned. Table 7 provides descriptive detail on the named individuals.

Table 8 summarizes the frequency of tweets mentioning the involved individuals in the event and post-event periods. Because the total number of tweets in the two periods is

Table 5 LASSO regressions of four responsibility verbs on social accountability topics and addressees in post-event period

	Want (1)	Need (2)	Should (3)	Demand (4)
Addressees				
Government	0.0059	0.0035	0.0152	0.003
We	0.0187	0.0552	0.026	0.001
People	0.0204	0.0128	0.011	0.001
Women	0.0070	0.0060	0.008	0.001
Verbs				
Need	0.0072	NA	0.001	0.001
Want	NA	0.0080	0.003	0.001
Should	0.0021	0.0005	NA	0.001
Demand	0.0073	0.0094	0.012	NA
Nouns				
Company	0.0021	0.0043	0.002	− 0.001
Protest	− 0.0022	− 0.0062	− 0.005	0.002
Leader	0.0045	0.0069	0.011	0.001
Journalist	− 0.0006	0.0013	0.004	− 0.001
Corruption	− 0.0008	0.0016	0.011	− 0.001
Scandal	− 0.0051	− 0.0078	0.003	0.004
Money	0.0119	0.0117	0.009	0.001
Tax	0.0011	0.0012	0.009	0.001
Bank	− 0.0025	0.0064	− 0.001	0.001
Politician	0.0075	0.0041	0.016	− 0.001
Police	− 0.0031	− 0.0011	0.005	0.001
Law	0.0069	− 0.0024	0.018	0.001
Trump	0.0010	− 0.0039	0.007	0.001
Media	0.0034	0.0022	0.009	− 0.001
Country	0.0126	0.0046	0.013	0.001
Family	0.0015	0.0011		0.033
Business	0.0025	0.0105	0.007	− 0.001
Healthy	0.0045	0.0151	0.010	0.001
Work	0.0085	0.0127	0.008	0.001
Climate	− 0.0010	0.0160	0.002	0.005
Community	0.0048	0.0078	0.012	0.002
Children	0.0057	0.0072	0.008	0.001
School	0.0020	0.0025	0.008	0.002
Constant	0.0120	0.0119	0.014	0.001
N	25,956,003	25,956,003	25,956,003	25,956,003

Table shows LASSO-based estimates (L1 regularized regression) of the relationship between four responsibility verbs (*want, need, should,* and *demand*) and the addressees and topics. Because the responsibility verb variables are binary indicator variables, our LASSO-based estimates are built off logistic regression. These LASSO estimates help identify the addressees and topics most closely related to our four responsibility verbs

Table 6 LASSO regressions of accountability addressees on topics and responsibility verbs

	Government (1)	We (2)	People (3)	Women (4)
Addressees				
Government		0.0064	0.0226	− 0.0021
We	0.0016		0.0136	0.0022
People	0.0064	0.0157		0.0002
Women	− 0.0003	0.0140	0.0009	
Verbs				
Need	0.0024	0.1504	0.0299	0.0025
Want	0.0043	0.0564	0.0529	0.0032
Should	0.0089	0.0635	0.0231	0.0030
Demand	0.0193	0.0280	0.0178	0.0050
Nouns				
Company	− 0.0014	− 0.0093	0.0012	− 0.0002
Protest	0.0397	− 0.0054	0.0345	0.0069
Leader	0.0060	0.0089	0.0041	0.0035
Journalist	− 0.0011	− 0.0024	− 0.0106	− 0.0006
Corruption	0.0146	0.0007	0.0034	0.0003
Scandal	0.0037	− 0.0203	0.0042	− 0.0001
Money	0.0036	0.0067	0.0334	− 0.0001
Tax	0.0010	0.0343	0.0077	− 0.0016
Bank	0.0013	− 0.0099	− 0.0020	− 0.0017
Politician	0.0004	0.0116	0.0206	0.0008
Police	0.0093	− 0.0137	0.0232	0.0050
Law	0.0137	0.0694	− 0.0001	0.0040
Trump	− 0.0014	− 0.0042	− 0.0038	− 0.0012
Media	0.0090	0.0040	0.0193	0.0010
Country	0.0142	0.0429	0.0466	0.0028
Family	− 0.0016	0.0045	0.0008	0.0045
Business	0.0077	− 0.0001	0.0109	0.0009
Healthy	0.0075	0.0243	0.0402	0.0066
Work	0.0064	0.0197	0.0174	0.0060
Climate	0.0127	0.0497	0.0122	− 0.0028
Community	0.0034	0.0291	0.0216	0.0042
Children	0.0092	0.0146	0.0189	2.0048
School	0.0040	0.0027	− 0.0097	− 0.0020
Event	0.0092	− 0.0089	− 0.0159	− 2.0060
Constant	0.0079	0.0372	0.0336	0.0060
N	27,988,832	27,988,832	27,988,832	27,988,832

Table shows LASSO-based estimates (L1 regularized regression) of the relationship between four accountability addressees (*government, we, people,* and *women*) and topics and responsibility verbs over the combined event and post-event periods. Because the accountability addressee variables are binary indicator variables, our LASSO-based estimates are built off logistic regression. These LASSO estimates help identify the responsibility verbs and topics most closely related to our four accountability addressees

quite different, Table 8 reports the frequency numbers per 100,000 so that we can compare the two periods. The results show that most politicians from non-English-speaking countries receive minimal attention within the English-language

Twitter stream. Furthermore, except for Mexico, the business ally member of the pairing receives *almost no attention* in either period. These results suggest that most politicians

Table 7 Politicians and business allies

Russia	Billionaire brothers Arkady and Boris Rotenberg had the incredible good fortune of being childhood friends of Russian President Vladimir Putin. As teenagers, they bonded with Putin over Sambo, a Russian martial art, and judo. Arkady Rotenberg has insisted that they don't get preferential treatment from Putin, but during his tenure as Russian leader the brothers have amassed a multibillion dollar fortune in part through lucrative contracts with state and state-owned companies
Brazil	Idalécio de Castro Rodrigues de Oliveira is a Portuguese corporate executive who, according to Brazil's attorney general, supplied money that was paid as a suspected bribe to Eduardo Cunha, the president of Brazil's Chamber of Deputies, currently under indictment for alleged corruption
Mexico	Juan Armando Hinojosa, who has been called Mexican President Enrique Peña Nieto's "favorite contractor," runs a well-connected business empire that secured at least $750 million in business with government agencies
China	French architect Patrick Henri Devillers was a business partner of Gu Kailai, the wife of former high-flying Chinese politician Bo Xilai. Devillers met the Gu when her husband was a Communist Party official in charge of the industrial port town of Dalian in far northeastern China. Devillers and Gu were co-directors of Adad Limited, a company registered in the United Kingdom, but Devillers also helped Gu set up a secret offshore company that was used to purchase a luxury villa in the south of France
Hungary	In October 2013, when he was still a member of the National Assembly, Zsolt Horváth became director of Excelle Media International Ltd., although Horváth's most recent declaration of financial interests to the Hungarian parliament, made in 2014, does not mention the offshore company. In September 2014, four months after he left politics, he became director of Mayer & Collins Trading Company Ltd. Hungarian businessman Imre Kökényesi is co-director of both companies, which manufacture and sell toys in China, Hong Kong and Hungary,
Venezuela	Jesus Villanueva rose quickly within Petroleos de Venezuela (PdVSA), the state oil company, after Hugo Chavez's election as president in 1998….He had "direct access to the public treasury
Cote d'Ivoire	Jean-Claude N'Da Ametchi is a banking executive from the Ivory Coast. In April 2011, the European Union sanctioned N'Da Ametchi for allegedly helping to fund the "illegitimate administration" of former president Laurent Gbagbo
Italy	Giuseppe Donaldo Nicosia, an advertising executive, is on the lam from Italian authorities following accusations of involvement in a $50 million tax fraud scheme that allegedly sold advertising space and fraudulently claimed value added tax credits. Italian prosecutors allege that Nicosia reaped millions of dollars from the scheme for himself and partners, who included former Senator Marcello Dell'Utri

Table contains information on eight politician-business ally pairings explicitly mentioned in the Panama Papers investigations. *Source*: ICIJ, (2022) (*Panama Papers Power Players*)

from non-English-speaking countries and their business allies are not subject to social accountability callouts from English-speaking Twitter participants.

The results reported in Table 8 complement the centrality results shown in Table 4 for the different discursive topics in that social accountability tends to focus on governments more than on individual politicians or businesses. During the event period, banks were somewhat central (position 12)—presumably because the Panama Papers was about the offshore finance industry—but dropped to position 27 in the post-event period. In contrast, business was not very central to the conversation in either period (position 19 and 21). Government occupied position 13 during the event period but jumped to position 8 in the post-event period. These centrality results, in conjunction with the frequency results reported in Table 8, indicate that calls for social accountability focus more on governments than on (specific) politicians, their business allies, and business. Thus, while businesses and business allies may benefit from their connections to politicians and governments, and may facilitate corruption, they are not the focus of social accountability callouts.

Discussion

The provided analysis starts from the ICIJ's release of the Panama Papers documents in 2016 and follows Twitter users that participated in the initial Panama Papers Twitter conversation forward in time. Using 27,988,832 tweets that were sent by these users between 2016 and 2020, we examine the trajectory of this social accountability conversation stream. The results illustrate how individual tweet-level social accountability callouts accumulated into a social accountability conversation that persisted yet changed over time. These changes included not only the addressee targets of social accountability callouts but also the pervasiveness and centrality of deontic social responsibility verbs within the conversation stream. The results also highlight that these callouts—in both the event and post-event periods—did not target specific politicians and their business allies. Rather, social accountability callouts were directed at government as well as the participants themselves via the use of the words 'we,' 'people,' and 'women.'

The results complement and extend our understandings of social accountability and business ethics in at least three ways. First, the study suggests that demanding social accountability must be an eternally optimistic process. Like

Table 8 Specific mentions of politicians and business allies

Country	Politician	Mentions per 100,000 tweets			
		Politician		Business allies	
		Event	Post-event	Event	Post-event
Russia	Putin	1980.8	124.5	0.7	0.1
Brazil	Cunha	22.1	0.1	0.0	0.4
Mexico	Nieto	5.8	0.6	6.0	1.3
China	Xilai	3.4	0.1	1.4	0.0
Hungary	Horváth	1.8	0.0	0.0	0.0
Venezuela	Chavez	1.4	3.0	0.1	0.3
Cote d'Ivoire	Gbagbo	1.0	0.3	0.1	0.0
Italy	Utri	0.1	0.0	0.0	0.8

Table contains average number of Twitter mentions of politicians and their business allies in the event and post-event periods. See Table 7 for descriptive detail on the specific business allies linked to each of the above eight politicians, as noted in the Panama Papers investigations (ICIJ, 2022)

the corporate social responsibility activities of the ICSR that we mentioned previously, Twitter-based social accountability processes are premised on the belief that calling out governments, politicians and businesses will eventually result in perlocutionary consequences; that is, that continued callouts will accumulate and encourage governments, politicians, and businesses to eventually 'turn' and acknowledge that they are accountable. The current study cannot assess whether the government, politicians and businesses eventually did register that they are accountable, but the study does show that the social accountability conversation persisted. By the end of 2020, four years after the Panama Papers information release, the initial group of participants had sent almost 28 M tweets and continued to talk about social accountability themes. We choose to assume not only that this persistence on the part of participants is, itself, a type of perlocutionary consequence but also that the magnitude of the persistence did increase the probability that these social accountability demands will eventually register.

Second, the study shows that the structure of the Twitter callouts changes between the event and post-event periods. More specifically, it appears that tweets during the event period are more descriptive and less action-oriented compared to the post-event period in that the use of deontic responsibility verbs was not central to the conversation. In the post-event period, responsibility verbs became more central, perhaps because participants had more time to reflect on what should happen and what needs to happen. This finding is provocative because it suggests that callouts may become less emotive and more deliberative as the initial information release event that incited the conversation stream fades into the background and after participants have had more time to reflect on what changes they want to see. If this is the case,

longer-term social media conversations have the potential to function as a form of democratic deliberation (cf. Felicetti, 2018; Palazzo & Scherer, 2006).

Third, the analysis suggests that, in the case studied, Twitter-based social accountability conversations did not become direct conversations about corporate social responsibility and business ethics. Although the initial Panama Papers information release stated that it was politicians and their business allies that were involved in wealth accumulation and wealth concealment activities, the Twitter conversation stream that occurred immediately after the information release did not focus on these specific politicians and even less so on their business allies. Furthermore, the topic of business within 2017–2020 post-event conversation stream, like within the event conversation stream itself, was not central. In this regard, the Twitter conversation stream and Twitter participants that we study remained focused on social accountability and not on the social responsibility of business.

Although the current study contributes to our understanding of social accountability and business ethics more generally, the study has its limitations. For example, the provided analysis starts from a single information event and considers a single social media site. Additional research examining different events and different social media platforms has the potential to augment the provided findings. Second, our use of a dataset containing almost 28 M observations made it possible to simultaneously analyze the microdetails and aggregate patterns of Twitter-based social accountability communications. This amount of data allowed us to examine a set of research questions that would not have otherwise been possible, but, at the same time, made it difficult to visualize the microtweet data and to adequately contextualize the responses of individual participants in the way that a qualitative study of social accountability would (cf. Apostolides & Boden, 2005). Within the current study, we tried to help readers visualize the microtweet data by incorporating illustrative examples of individual tweets but no attempt was made to follow the tweeting patterns of individual Twitter users nor to consider the inter-textual connections among the tweets sent by the same user. Additional research on these topics and others has the potential to increase our understandings of the performative consequences of social media-based social accountability callouts.

Declarations

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval This article does not contain any studies with human

participants or animals performed by any of the authors.

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