



King's Research Portal

DOI:

[10.1177/07439156241230910](https://doi.org/10.1177/07439156241230910)

[Link to publication record in King's Research Portal](#)

Citation for published version (APA):

Hamelberg, K., de Ruyter, K., van Dolen, W., & Konus, U. (2025). Finding the Right Voice: How CEO Communication on the Russia-Ukraine War Drives Public Engagement and Digital Activism. *Journal of Public Policy & Marketing*, 1-14. Advance online publication. <https://doi.org/10.1177/07439156241230910>

Citing this paper

Please note that where the full-text provided on King's Research Portal is the Author Accepted Manuscript or Post-Print version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version for pagination, volume/issue, and date of publication details. And where the final published version is provided on the Research Portal, if citing you are again advised to check the publisher's website for any subsequent corrections.

General rights

Copyright and moral rights for the publications made accessible in the Research Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognize and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the Research Portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the Research Portal

Take down policy

If you believe that this document breaches copyright please contact librarypure@kcl.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.

Author Accepted Manuscript



Finding the Right Voice: How CEO Communication on the Russia-Ukraine War Drives Public Engagement and Digital Activism

Journal:	<i>Journal of Public Policy and Marketing</i>
Manuscript ID	JPPM-23-063.R2
Manuscript Type:	Special Issue Revised Submission
Topics and Methods:	Chief Executive Officer (CEO) communication, war, message framing, message appeal, public engagement, digital activism

SCHOLARONE™
Manuscripts

File 1: Title Page

1. Title: Finding the Right Voice: How CEO Communication on the Russia-Ukraine War Drives Public Engagement and Digital Activism

2. Author(s) name, title, institution, address, telephone number, and e-mail address

Kedma Hamelberg, Ko de Ruyter, Willemijn van Dolen and Umut Konuş

Kedma Hamelberg is PhD Candidate, Amsterdam Business School (ABS), Marketing Section, University of Amsterdam, Netherlands (email: k.hamelberg@uva.nl). Ko de Ruyter is Professor of Marketing and Vice Dean, Research at King's Business School, UK, and Adjunct Professor of Responsible Marketing Strategy, Amsterdam Business School (ABS), Marketing Section, University of Amsterdam, Netherlands (email: ko.de_ruyter@kcl.ac.uk).

Willemijn van Dolen is Professor of Marketing, Amsterdam Business School (ABS), Marketing Section, University of Amsterdam, Netherlands (email: w.m.vandolen@uva.nl).

Umut Konuş is Associate Professor of Marketing, Amsterdam Business School (ABS), Marketing Section, University of Amsterdam, Netherlands (email: u.konus@uva.nl).

3. Author(s) note

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

4. Acknowledgment

5. Financial disclosure, if applicable

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Author Accepted Manuscript

**Finding the Right Voice: How CEO Communication on the Russia-Ukraine War
Drives Public Engagement and Digital Activism**

“Silence becomes cowardice when occasion demands speaking out the whole truth and acting accordingly.” Mahatma Gandhi

Abstract

This research examines the influence of CEO versus brand communication on public engagement and digital activism during the Russia-Ukraine war. Brand communication refers to messages sent out through an organization's social media accounts, whereas CEO communication comes from the executive's personal account. The authors depart from an analysis of 236,119 tweets investigating the effects of message sender (CEO vs. brand), message framing (self vs. other), and message appeal (informational vs. emotional) on engagement (i.e., likes, retweets, and replies). To further understand, they subsequently deploy a 2x2 between-subjects design (N=608) that introduces scenarios where either a CEO or brand proposes a public policy campaign, advocating support for U.S. citizens (self-framing) or Ukrainian civilians (other-framing). Key findings reveal that CEO communications foster greater engagement and digital activism than brand messages. CEO communication that merges self-framed with informational or other-framed with emotional appeals outperforms brand messages regarding public engagement. Additionally, CEO campaigns centered on Ukrainian civilians amplify digital activism, mirroring findings when brands approach the war's implications for U.S. citizens. Together, these insights unveil the intricate dance of message sender, framing, and appeal during global geopolitical events, providing vital knowledge for organizations and policymakers aiming to optimize public backing in times of war.

Keywords: Chief Executive Officer (CEO) communication, war, message framing, message appeal, public engagement, digital activism

Author Accepted Manuscript

Communication is an essential component of marketing systems (Layton 2015). In today's world, characterized by multiple global crises, organizations increasingly lean on their CEOs and brands to voice out on pressing social and political matters (Deloitte 2022; Sprout Social 2022; The Drum 2022). This shift may reflect changing consumer behavior, with 40% of global and 60% of U.S. customers resonating with brands that mirror their values (Social Sprout 2022; YouGov 2022). However, this trend is double-edged. Alignment with societal values can bolster reputation, image (Edelman 2022; YouGov 2022), loyalty, trust (Men and Tsai 2016), investor confidence (Bhagwat et al. 2020), and even political power (Crow et al. 2021). Conversely, misalignment can be perceived as inappropriate or insensitive, tarnishing reputation, impairing finances, and diluting customer loyalty (Aksoy et al. 2022; Business Insider 2020).

In this context, it is crucial to understand the effects of brand and CEO communication. Organizations use brand communication to promote their brand through social media accounts. In contrast, CEO communication involves using personal social media accounts where top executives share their views, sometimes unrelated to the organization or its stance. Both are potent organizational mouthpieces, capable of profoundly shaping public perceptions and behaviors (Forbes 2020; Jin et al. 2023; The Pittsburgh100 2023; Wallach and Popovich 2023).

The digital era has revolutionized the way organizations, through CEOs and brands, interact with the public. Minor online actions, such as retweets or likes on political content, can trigger widespread political discourses (Li et al. 2022; Zhang et al. 2010). Digital activism leverages online platforms to instigate tangible societal change (Deng et al. 2023; George and Leidner 2019; Joyce 2010). In this vibrant digital exchange, communications from CEOs and brands about societal issues become magnets for public responses, ranging from simple engagements to profound digital activism.

Author Accepted Manuscript

Past instances underscore this dynamic. CEO Brendan Eich's stance on same-sex marriage led to a widespread call for a Mozilla boycott, resulting in his resignation (BBC 2014). Disney CEO Bob Chapek's silence on the controversial "Don't Say Gay" bill drew intense scrutiny and criticism (CNN 2022a). These examples highlight the need for organizations to intricately understand public reactions to their communications, especially when navigating sensitive terrains like war.

War is complex and multifaceted, involving armed conflict between countries, governments, or societies, with devastating consequences for those directly and indirectly involved. Shultz (2005) emphasized that large-scale conflicts can fracture and disrupt established marketing systems, expanding the impact beyond immediate conflict zones. For instance, the Russia-Ukraine war has led to a global energy crisis, impacting not just the populations of the warring nations but also all other countries dependent on Russian gas exports. Historically, public interactions with war-themed communication have shaped policies (De Neufville and Barton 1987) and can also be pivotal in navigating the systemic changes that wars introduce to marketing systems and global commerce (Shultz 2005).

As these geopolitical events disrupt global commerce and societal dynamics, the onus falls upon marketers and communicators to navigate these complexities. In light of such global challenges, the role of meaningful marketing and communication becomes even more essential (Barrios et al. 2016). Shultz (2007) posited that meaningful marketing involves constructive engagement with societal issues, advocating for an understanding rooted in historical and cultural perspectives. Such an approach requires marketers and policymakers to rise beyond traditional confines, aiming to make the global marketplace a benevolent space where an underlying sense of societal betterment drives engagement (Barrios et al. 2016). This broader perspective on marketing underscores the significance of communication, particularly during sensitive global events like wars.

Author Accepted Manuscript

In such complex scenarios, citizens often turn to private sector leaders for insights and guidance (McKinsey 2020; Tsai and Men 2017). A testament to their influence is that organizations often eclipse governments, media, and NGOs in terms of perceived competence and ethics (Edelman 2023). Considering that an overwhelming 72% of respondents expect CEOs to act as guardians of facts and expose questionable science to justify a bad social policy (Edelman 2023), the role of CEO communication becomes increasingly important during crises. Consequently, CEO communication may carry more weight during crises than brand communication, as CEOs are seen as the face and voice of the organization (Hwang and Cameron 2008), responsible for setting the tone and direction of the company. Their actions and statements may influence how the public views the company and public opinion on major public affairs (Branicki et al. 2021; Chatterji and Toffel 2019).

Moreover, we argue that CEO communication may help the public understand complex problems such as wars and their consequences. When a CEO personally communicates about such issues, they can provide simplified overviews of complex realities. People may perceive them as experts, creating a sense of connection and credibility (Giffin 1967; Ismagilova et al. 2020), which may lead to higher levels of engagement and activism. Recognizing the critical role of strategic message sender and framing in times of crisis, this research explores the communicative dynamics of CEOs and brands in the context of armed conflict. Although there is a growing body of literature investigating CEO social media usage (e.g., Grover, Kar, and Ilavarasan 2019; Heavey et al. 2020; Lee 2022; Matthews et al. 2022; Men and Tsai 2016), there is a lack of comprehensive research on how CEO communication influences public perception and behavior, especially during significant sociopolitical events. This study draws on executive symbolism theory (Hambrick and Lovelace 2018) and the spiral of silence theory (Noelle-Neumann 1974), integrating message framing (Tversky and Kahneman 1985) and message appeal (Lee and Atkinson 2019; Xiang et al. 2019), focusing

Author Accepted Manuscript

on the impacts of CEO and brand communications on public engagement and digital activism during the Russia-Ukraine war. In doing so, we align with the concerns Shultz (2016) raised, who emphasized the profound effects of marketing activities during the war and the need for constructive engagement to address societal challenges.

This research offers three primary contributions: (1) it extends the executive symbolism and spiral of silence theory's application; (2) it reveals the superiority of CEO communication in inducing engagement and activism; (3) it identifies the conditions amplifying these effects. In conclusion, we urge further exploration into CEO communication, particularly in the realm of global events, emphasizing the broader societal impacts (Michielsen and van der Horst 2022; Shultz 2022; WWF 2023).

The rest of the article is structured as follows. We first discuss the theories related to message senders before introducing public engagement. Second, we present message framing, message appeal, and digital activism, drawing on relevant literature. We then outline our hypotheses and present the conceptual framework. We empirically test this framework through a field study (Study 1) and an experimental study (Study 2). Finally, we analyze the findings, reflect on their implications, and suggest future research avenues.

Theoretical Framework

Executive Symbolism and Spiral of Silence

In the domain of communication, the sender, or the origin of the message, plays a pivotal role in how that message is received and interpreted by the audience (Wilson and Sherrell 1993). In our current communication landscape, societal expectations have evolved, prompting organizations to take definitive stances on prominent societal issues (Edelman 2023; Sprout Social 2019; Sprout Social 2022; Vredenburg et al. 2020). In this context, both CEOs and brands emerge as principal spokespersons for organizations (Forbes 2020; The Pittsburgh100 2023). For example, while Nike emphasizes empowerment, Salesforce CEO

Author Accepted Manuscript

Marc Benioff is vocal about diverse societal issues (Brand24 2023; CNBC 2021; CNN 2022b).

While both brand and CEO communication are important for building a positive image for the company, there are some key differences between the two. Brand communication is typically more formal and controlled, as it is crafted by the company's marketing and communications team to reflect its brand identity and messaging. According to Chen et al. (2015), when brands communicate in social media, acting as living people able to create interpersonal conversations, it results in high public engagement. Similarly, Vernuccio (2014) claims that organizations would have a more effective communication strategy if they changed their communication style to a more conversational one, as person-to-person conversation is more engaging.

CEO communication, on the other hand, is often more spontaneous and may reflect the CEO's personal beliefs and values. Yue et al. (2021) suggest that the public positively perceives CEO communication on organizational news and activities. Tsai and Men (2017) found that when CEOs communicate in a way that shows they care about their followers and are friendly, it helps strengthen their relationship with their followers. Hence, CEO communication can help to humanize the company and build a personal connection with customers and stakeholders. While both play a critical role in shaping public perception, their impact on generating public response may vary depending on the context.

Jahng and Hong's (2017) findings reveal that people do not show significant behavior changes when a brand communicates during a crisis. However, organizational sociopolitical actions announced by the CEO can increase the positive response from investors if they are closely aligned with the values of its customers, employees, and state legislators (Bhagwat et al. 2020). People may feel more personally connected to a CEO than to a brand. Therefore,

Author Accepted Manuscript

they may be more interested in hearing from the CEO about public issues but may also scrutinize their communication more closely (Sutton and Galunic 1995).

Set against the backdrop of the Russia-Ukraine war, decisions made by organizations, notably the significant number that halted operations in Russia (Statista 2023), have garnered widespread attention. These decisions, communicated in many cases via CEO messages, serve as both strategic moves and resonant symbolic gestures in the broader socio-political arena (Pfeffer 1981; Westphal and Zajac 1998).

The notion of executive symbolism, as elucidated by Hambrick and Lovelace (2018), emphasizes the weight symbolic actions by top executives carry, particularly in conveying strategic narratives. In today's interconnected digital ecosystem, a CEO's online messages about events like the war can serve as potent symbols. Such symbols visually encapsulate the CEO's viewpoint on the situation and convey it to a broad audience, potentially signifying their commitment to societal well-being and acting as catalysts for social transformation (Barberá-Tomás et al. 2019; Westphal and Zajac 1998).

The significance of such symbolic gestures can be understood through the lens of the spiral of silence theory (Noelle-Neumann 1974), which posits that individuals are more likely to voice their opinions when they believe those opinions align with the majority view. As CEOs navigate the geopolitical waters, their public communication can establish or alter perceived majoritarian views. Such articulations can embolden or suppress public expression (Sutton and Galunic 1995), contingent on the alignment with the prevailing narrative, underscoring the profound significance of CEO communication in shaping public discourse (Hambrick and Wowak 2021; Khumalo, Dumont, and Waldzus 2022; Wowak, Busenbark, and Hambrick 2022).

Public Engagement

Author Accepted Manuscript

Public engagement involves the vast spectrum of stakeholders, which includes consumers, employees, business partners, and community members. These stakeholders are intrinsically interwoven into the fabric of business-political dynamics, playing roles as influencers and influenced actors (Bruce and Shelley 2010; Korschun, Martin, and Vadakkepatt 2020). Given the civic orientation of this research, public engagement is conceptualized as any solo or collective endeavor aimed at identifying and rectifying issues that resonate with communities at various scales: local, national, or global (Robertson 2018). By embracing this comprehensive perspective rather than the traditional consumer-focused approach, this research aligns with the broader academic sentiment of recognizing all pivotal stakeholders (Cova 2020; Korschun, Martin, and Vadakkepatt 2020; Mesiranta, Närvänen, and Mattila 2022).

The rise of social media platforms has transformed the nature of public engagement. These platforms become arenas where the public interacts with organizations, amplifying the dynamics of public engagement into a digital behavioral paradigm (Jiang, Luo, and Kulemeka 2016; O'Brien and Toms 2008; Smith and Gallicano 2015; Taylor and Kent 2014). Although early research suggested that digital engagement might not correlate with offline actions (Gladwell 2010; Lacetera, Macis, and Mele 2016), more recent studies indicate a probable complementarity between online and offline behaviors (Chou, Hsu, and Hernon 2020; Deng et al. 2023; Ferrucci, Hopp, and Vargo 2020; Kim et al 2023; Lobera and Portos 2021; Ryoo et al 2023).

For organizations, these platforms are vital. They serve as conduits for two-way communication, allowing the public and organizations to exchange information, share concerns, and engage in online discourses. This interactive capability is pivotal, especially during tumultuous times marked by political instability, social upheavals, or natural calamities. By proactively participating in these digital dialogues, CEOs can bolster

Author Accepted Manuscript

awareness, foster trust, and drive transformative social shifts (Bojanic 2023; Park and Kaye 2017).

Cho, Schweickart, and Haase (2014) assessed three different levels of public engagement on social media with nonprofit organizations' messages: likes, shares, and replies. A study by Kim and Yang (2017) on the differentiation of the three levels of public engagement found that sensory and visual features in online messages led to likes, informational and interactive elements resulting in replies, and sensory, visual, and informational features in shares. Shahin and Dai (2019) developed a “technosocial” framework for evaluating how effectively global aid agencies use Twitter algorithmic capabilities to increase public engagement and social change.

In Twitter, the social media used in this study, sharing a post is called a retweet. Following previous studies that measured public engagement in terms of likes, retweets, and replies (e.g., Rossi et al. 2021; Shahin and Dai 2019; Yue et al. 2019), we measure public engagement in terms of likes, retweets, and replies.

Message Strategy: Framing and Appeal

Message framing

Framing a message is a crucial component of communication. How a message is framed can significantly influence how information is interpreted and the decisions made thereafter (Tversky and Kahneman 1985). Within marketing, scholars have explored various dimensions of message framing, including gain-loss, positive-negative, abstract-concrete, and other-self (Agnihotri et al. 2022; Ahmad, Guzmán, and Kidwell 2022; Batteux, Ferguson, and Tunney 2019; Detweiler-Bedell, Detweiler-Bedell, and Salovey 2006; Florence et al. 2022; Kureshi and Thomas 2020; Maheswaran and Meyers-Levy 1990; Skoric et al. 2022; Wan and Rucker 2013). Interestingly, messages emphasizing benefits to others can sometimes be more effective than those highlighting self-benefits (Jaeger and Weber 2020).

Author Accepted Manuscript

In the context of the Russia-Ukraine war, we use the lens of other-self framing. The "other" frame focuses on the impact the war has on the populations at its center – the Ukrainian and Russian civilians. Given the global outcry for support for Ukraine (Forbes 2022), an "other" framing offers a deeply personal story filled with empathy and support. In contrast, the self-framing centers around the personal effects of the war, for instance, the widespread energy crisis it caused. As many individuals remain tuned into the effects on inflation and energy prices (Ipsos 2023), this framing emphasizes the war's global implications and is likely to resonate with a broader audience, making the distant war effects more relatable. This perspective aligns with the Construal-level theory, which suggests different cognitive and emotional responses to events based on their perceived closeness or distance (Trope and Liberman 2010).

A CEO's communication framing about the war may significantly shape public engagement by tapping into cognitive and emotional processes, aligning with audience values and concerns, and leveraging the CEO's inherent authority (Hambrick and Lovelace 2018; Hambrick and Wowak 2021; Trope and Liberman 2010; Tversky and Kahneman 1985). A narrative emphasizing the challenges faced by others, like the Ukrainian people, might evoke strong emotional reactions, leading to increased engagement. On the other hand, highlighting global effects might appeal to those concerned about personal implications, though it might not elicit as deep an emotional connection as an "other-focused" narrative (Batteux, Ferguson, and Tunney 2019).

Message appeal

In advertising, message appeal is typically used to promote goods and services based on their utilitarian or hedonic nature (Albers-Miller and Stafford 1999; Yoo and MacInnis 2005). There are two types of message appeals: informational and emotional (Guitart and

Author Accepted Manuscript

Stremersch 2021). Informational appeals are objective and logical, while emotional appeals are subjective and value-expressive (Xiang et al. 2019).

Previous studies have shown that message appeals can influence engagement and positive social behavior (Rietveld et al. 2020; Son, Nam, and Diddi 2022). For instance, messages with an informational appeal are effective when the message sender has a high number of followers, while emotional appeals are effective in driving engagement with political content and supporting low-carbon policies (Bil-Jaruzelska and Monzer 2022; Gross and von Wangenheim 2022; Skurka, Eng and Oliver 2022).

Andreu, Casado-Díaz, and Mattila (2015) studied how consumers respond to corporate social responsibility (CSR) initiatives communicated through emotional and informational message appeals. Their findings suggest that informational appeals are more effective in communicating environment-related CSR initiatives, while emotional appeals are more effective in communicating employee-based CSR initiatives. This underlines the criticality of tailoring CSR communications, considering many consumers remain unaware of such initiatives, and appropriately framed messages can shift their attitudes favorably.

The Construal-Level Theory, proposed by Trope and Liberman (2010), posits that the psychological distance of an event or object determines its mental representation. Near events are represented concretely, whereas distant ones are seen in abstract terms. This theory holds a crucial implication for message appeal. When a message, like those about war, is construed as near (affecting one's immediate environment or well-being), an informational appeal that provides concrete details may be more effective. Conversely, when a message is perceived as distant (affecting remote areas or people), an emotional appeal that evokes abstract feelings of empathy or concern may resonate more with the audience.

Given the emotionally potent subject of war, when carefully and skillfully, CEO communication can potentially sway many stakeholders, from employees and customers to

shareholders and the broader public. Their messaging, influenced by the interplay of message appeal and psychological distance, may shape public discourse, attitudes, and behaviors.

Digital Activism

Twitter's inherent architecture, beyond just engagement metrics, has been pivotal in sparking activism by disseminating new information and nurturing involvement across a diverse network of connections (Valenzuela, Correa, and Zuniga 2018). As we advance through this digital era, the nature of activism is continuously shaped by the capabilities of these digital tools (Joyce 2010). Historically, communication has been the mainstay of activists, aiding them in identifying solutions to societal issues (Chon and Park 2020; Oliver 1989). While traditional activism depends on mass participation and experienced leadership, digital activism prides itself on its efficiency, reach, and cost-effectiveness (George and Leidner 2019; Joyce 2010). Often, it is a small group of tech-savvy, typically younger individuals who drive digital activism, for example, by employing tools like hashtags to craft narratives and foster online activist communities (Nasrin and Fisher 2022). Moreover, the digital realm provides a unique platform for marginalized communities, offering them an amplified voice previously unattainable via conventional activism methods (Brouard et al. 2023; Schradie 2018).

A remarkable feature of digital activism is its ability to bridge geographical divides, transforming local concerns into global discourses (Kavada 2015). For instance, during the Hong Kong Extradition Bill Protests, activists utilized social media platforms like Twitter to spotlight political injustices in Hong Kong on a global scale, reaching out to influential democratic figures and organizations (Sorce and Dumitrica 2022). Yet, the digital arena is not without its challenges. Autocratic regimes and other actors can exploit it to spread misinformation and suppress voices (Carpiano et al. 2023; Dal, Nisbet, and Kamenchuk 2023; Gupta et al. 2022; Kuznetsova 2023; OECD 2022).

Author Accepted Manuscript

Interestingly, the influence of digital activism extends beyond politics, intertwining with marketing. In this interconnected era, organizations find themselves at a crossroads—being both the target and vehicle for digital activism (e.g., Eilert and Nappier Cherup 2020; Legocki, Walker, and Kiesler 2020; Moorman 2020; Mukherjee and Althuizen 2020; Pöyry and Laaksonen 2022; Ulver and Laurell 2020; Weber et al. 2023). This dual role has directed the focus of marketing research toward understanding the influence of brand activism on consumers and vice-versa. Among the new developments in brand activism, Vredenburg et al. (2020) underscore the need to align a brand's reputation and the sociopolitical causes it champions. Similarly, Legocki, Walker, and Kiesler (2020) introduce a fresh perspective, highlighting the dual nature of consumer digital activism, wherein consumers utilize their digital voices to critique and champion positive changes.

While ample research has delved into how political actors influence public opinion, the marketing literature has largely ignored the reciprocal influence. In this study, we posit that heightened public support for certain policies, possibly amplified by digital activism, can sway government stances and actions, as seen in the case against the Pengze inland nuclear power project after the Fukushima accident (Deng et al 2023). Similarly, businesses can catalyze shifts in laws or regulations (Cova 2020). In some instances, activism exerts such immense pressure that political figures are nudged toward greater transparency and accountability (Korschun, Martin, and Vadakkepatt 2020).

The next chapter will construct and probe into potential predictive relationships and outcomes to further this dialogue, drawing from the theoretical framework outlined in this section. By intertwining the foundational elements of our research with forward-looking hypotheses, we seek to provide a holistic exploration of the ripple effect sparked by organizations as communicators, inspiring wider public engagement and guiding their attention toward political entities.

Author Accepted Manuscript

Hypotheses Development

The Effects of CEO Communication on Public Engagement

The influence dynamics within geopolitical communication recognize the potent role of CEOs, particularly in addressing critical issues such as the Russia-Ukraine war. The influence pyramid model suggests that key figures like CEOs, due to their socioeconomic stature and intellectual propensity (Robertson and Myers 1969), hold a position at the apex, with the general public at the base (Keller and Berry 2003). As a result, CEO communication has the potential to resonate more effectively, thereby informing and mobilizing the public.

Moreover, previous research indicates that individuals often shy away from engaging with politically charged content on social media due to fears of misinterpretation or judgment (Hampton et al. 2014; Thorson 2014). In this context, CEOs can drive higher engagement and digital activism, given their perceived authenticity and accountability compared to brands. The Spiral of Silence theory further fortifies this claim by suggesting that people gauge the prevalent opinions around them (Noelle-Neumann 1974). A CEO's communication on a sensitive issue like the Russia-Ukraine war can be perceived as a symbol of courage and credibility (Hambrick and Lovelace 2018), expressing a dominant perspective (Noelle-Neumann 1974), which may garner more public attention and interaction.

Contrastingly, brand communications, often viewed through the lens of profit-driven motives, might not command the same perception and might face skepticism. Drawing from the Executive Symbolism (ES) theory and the Spiral of Silence theory, we propose:

H₁: CEO communication about the Russia-Ukraine war will garner higher public engagement in likes, retweets, and replies than brand communication.

Message Framing, Appeal, and Their Interactions

Message sender, message framing, and message appeal

Author Accepted Manuscript

People can consider different perspectives, including thinking about past events, future possibilities, distant locations, perspectives of others, and hypothetical alternatives. Based on the construal theory (Trope and Liberman 2010), we argue that when the public thinks about Ukrainian civilians affected by the war, they may transcend a psychological distance regarding social relationships and perhaps space. If these civilians are perceived as "similar" or "close" to the individual's own social identity or experience, it might elicit a more concrete and empathetic response. On the other hand, if they are perceived as very distant or different, the response might be more abstract, leading to potentially lesser emotional engagement.

The theory also suggests that informational (i.e., cognition intensive) and emotional messaging would be processed differently and will likely invite different reactions. Emotional framing taps into individuals' ability to think about hypothetical alternatives and to relate to those scenarios emotionally. By presenting the consequences of the war in a manner that elicits strong emotions (e.g., fear, empathy, anger, etc.), emotional framing can potentially bridge the psychological distance. If individuals can easily imagine themselves or their loved ones in such situations, they might feel more compelled to engage.

Besides the relevance of the message sender (i.e., CEO) discussed previously, message framing and message appeals are two message strategies that have been predominantly adopted in the marketing literature. For example, Gursoy et al. (2022) investigated the effectiveness of message framing and message appeal in changing respondents' COVID-19 vaccination intentions by influencing their vaccine risk perceptions. Similarly, Yoon et al. (2019) investigated effective ways of promoting responsible tourism behavior among consumers by using message framing and appeals. The authors used campaign advertisements as stimuli and employed a 2x2 factorial design to study the impact of message framing (gain vs. loss framing) and appeal (informational vs. emotional) on

Author Accepted Manuscript

individuals' attitudes towards the advertisement and their intent to participate in responsible tourism.

The combination of how a message is framed and the appeals it contains can significantly influence various forms of public engagement, such as the amount of likes, retweets, and replies it receives. We argue that CEOs may use message framing and appeal to highlight certain aspects of a message and make them more salient to the audience (Hamby and Jones 2022; Trope and Liberman 2010). Building upon the findings of prior research, such as Yousef et al. (2022), our study examines the dynamics of message framing and appeal in relation to the sender. In particular, we analyze how CEOs use different framing techniques, whether they highlight the immediate impact of war on affected populations or broader issues like global energy crises, and combine these frames with either emotional or informational appeals. For instance, when a CEO frames a message to underscore the human costs of war, complementing this 'other-focused' framing with emotional appeals that spotlight the needs of Ukrainian citizens can significantly boost public engagement. Conversely, a CEO's message that outlines the wider implications of war, such as an energy crisis, and employs informational appeals might better align with the public's logical and practical concerns. The efficacy of message appeals, when integrated with the specific framing chosen and considering the sender's identity (in this case, a CEO), can play a pivotal role in shaping public engagement.

CEO messages framed on the war consequences to self and with informational message appeal are likely to enhance the level of public engagement as people are risk-averse and perceive CEOs as a reliable source of factual information. Conversely, when the message appeal is emotional, the level of public engagement may be weaker for a self-framed war consequences message. However, an emotional appeal may increase the effectiveness of CEO messages framed on the other-framed war consequences. In sum, we argue that the

Author Accepted Manuscript

effect of CEO communication on public engagement (in terms of likes, retweets, and replies) is moderated by message framing and message appeal, such that when a CEO communicates about war-related issues on social media, the interaction between CEO communication, message framing ("self" or "other"), and message appeal (informational or emotional) has a significant effect on public engagement. Specifically, we hypothesize that:

H_{2a}: When a message is framed on war consequences to "others," and message appeal is emotional, the interaction between CEO communication, message framing, and message appeal will be positive for public engagement (regarding likes, retweets, and replies).

H_{2b}: When a message is framed on war consequences to "self," and message appeal is informational, the interaction between CEO communication, message framing, and message appeal will be positive for public engagement (regarding likes, retweets, and replies).

The Effects of CEO Communication on Digital Activism

Power distance, a dimension of cultural variation, delineates the acceptance and expectation of unequal power distribution among less powerful members of institutions and organizations. Countries with high power distance, such as South Korea and China, tend to demonstrate deference to authority (Laufer, Garrett, and Ning 2018). However, in countries with moderate power distance, such as the U.S., there is sometimes an anticipation of equal rights and more decentralized power structures (Hofstede 2001). In this setting, CEOs, especially when proposing public policies, might be perceived as influential figures and as symbolic embodiments of courage and authenticity (Hambrick and Lovelace 2018). The Spiral of Silence theory bolsters this perspective, suggesting that individuals assess prevailing opinions in their environment (Noelle-Neumann 1974). A CEO's stance on sensitive matters, such as the Russia-Ukraine war, could represent a dominant perspective, potentially garnering greater public mobilization.

Author Accepted Manuscript

H3: In the U.S. context, a CEO's call for public policy support, particularly on sensitive issues, will evoke greater digital activism than a similar call by a brand.

The Effects of CEO Communication and Framing on Digital Activism

Given the U.S.'s cultural context of moderate power distance and its inherent emphasis on egalitarianism and individualism, messages from CEOs might be received differently than those from brands. The framing theory, as proposed by Tversky and Kahneman (1985), posits that the effectiveness of a message hinges significantly on its presentation. Particularly for CEOs, the manner in which they frame their messages can do more than boost their persuasive power, as noted by Eilert and Nappier Cherup (2020); it can also elevate their communication to a symbolic level that conveys courage and authenticity, according to Hambrick and Lovelace (2018). When CEOs tailor their appeals to support Ukrainian civilians (i.e., other-framing), they may bridge the psychological gap with their audience, transforming an abstract concern into a more concrete and relatable issue. This approach aligns with the construal-level theory (Trope and Liberman, 2010). Moreover, aligned with the Spiral of Silence theory, such CEO positioning has the potential to catalyze public digital activism. In contrast, brands are often viewed as entities primarily concerned with domestic issues. Consequently, a brand's campaign that addresses immediate problems, such as the energy crisis, may find a more profound connection with the U.S. population than a CEO's broader approach.

H4a: In a moderate power distance context like the U.S., CEO-led public policy proposals framed around supporting Ukrainian civilians (other-framing) will elicit a greater increase in digital activism compared to similar proposals when presented by brands.

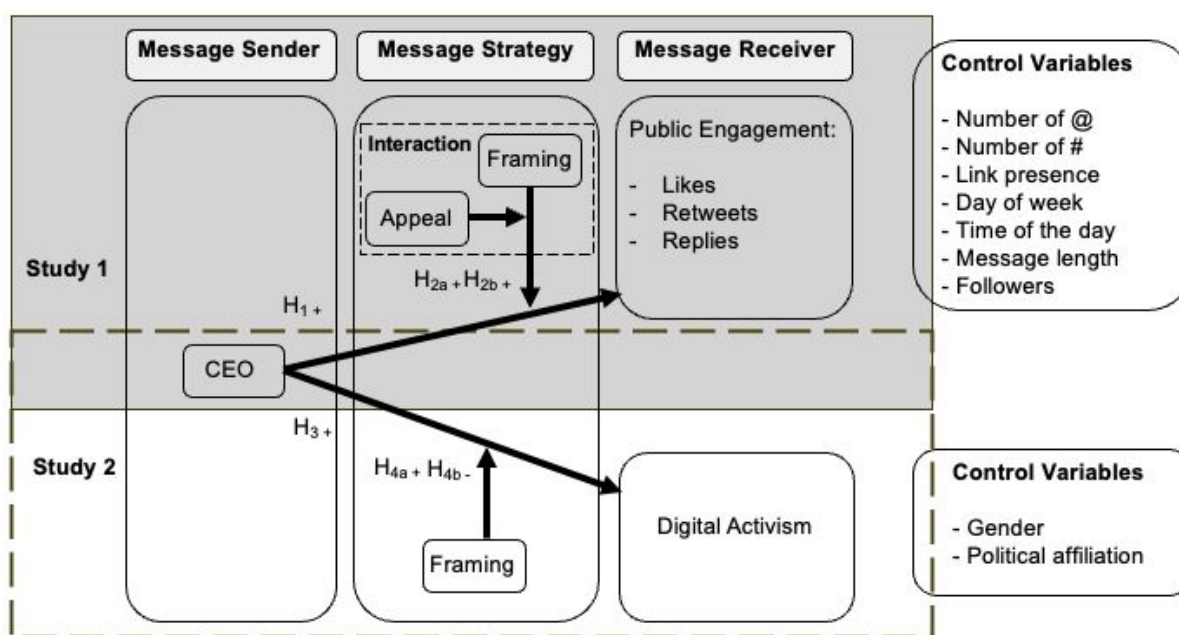
H4b: In a moderate power distance context like the U.S., CEO-led public policy proposals framed around addressing challenges faced by U.S. citizens due to the energy crisis

Author Accepted Manuscript

from the war (self-framing) will elicit a significant decrease in digital activism compared to similar proposals when presented by brands.

The conceptual framework visually depicts the aforementioned hypotheses (Figure 1). A glossary of the working definitions of the key terms used in this article is provided in Web Appendix A.

Figure 1: Conceptual Framework for Studies 1 and 2



Study 1: CEO Communication, Framing, Appeal and Public Engagement

Method

This empirical investigation provides a baseline tailored to the specific domain's nuances, thereby enriching theory rather than sidelining it. We use data analysis to bridge the domain's intrinsic details with broad theoretical frameworks, delivering actionable marketing insights. This approach ensures greater alignment with practical applications, making our research more meaningful for policymakers (Davis, Grewal, and Hamilton 2021; Pauwels and Perry 2022). In harnessing the power of social media data, we aim to accentuate the significance of marketing research, aligning it with emerging topics and fostering its leadership (Boegershausen et al. 2022).

Author Accepted Manuscript

Our methodological approach combines Natural Language Processing (NLP) and BERT (Bidirectional Encoder Representations from Transformers) — a state-of-the-art machine learning technique designed to understand the context of words in a sentence by reading the entire sequence of words at once, rather than one by one (Devlin et al. 2018) — and multiple linear regression models. NLP tools are tailored to glean insights from text data (Shankar and Parsana 2022), and their utility in evaluating various text sources, like organizational communications, is well-established in marketing (Berger et al. 2020; Jalali and Papatla 2019). Leveraging the capabilities of BERT, we identified the framing and appeal within CEO and brand messages, as BERT currently stands at the forefront of classification predictions (Alantari et al. 2022).

The choice of multiple linear regression models is strategic. We deploy multiple linear regression models for each dependent variable (likes, reposts, and replies) to appraise the ripple effects of CEO communication, framing, and appeal on public engagement indicators. This dual-pronged analysis empowers us to spotlight (1) Variances in communication efficacy between senders (CEO vs. brand), and (2) The intricate interplay of senders, message strategy concerning framing (self vs. other), and appeal (emotional vs. informational).

Crucially, we account for post-specific characteristics, such as timing (morning, afternoon, or evening) and day, recognizing their potential sway on engagement metrics. Citing the insights from Jalali and Papatla (2019), engagement nuances like the variance between workdays and weekends are incorporated. Complementary to this, other influential variables like the number of hashtags, mentions, links, followers, and message length are duly factored in, underscoring their pivotal role in engagement dynamics, corroborated by multiple studies (Gu et al. 2022; Karagür et al. 2022; Kim et al. 2022; Rietveld et al. 2020; Valsesia, Proserpio, and Nunes 2020; Pancer et al. 2019).

Author Accepted Manuscript

Data Collection and Sample

We collected data for study 1 by first selecting organizations listed on the S&P 1500 index, following previous research as reference (e.g., Chung, Low, and Rust 2022; Kim, Xiong, and Kim 2018; Nezami, Worm, and Palmatier 2018). This index includes the largest publicly traded companies in the United States and comprises three smaller indices: the S&P 500, the S&P 400, and the S&P 600, which represent large-cap, mid-cap, and small-cap stocks, respectively.

Study 1 focuses solely on CEOs' and brands' communication on Twitter¹. Although Twitter has its limitations, it is a rich data source for marketing research (Berger et al. 2020). Among all social media platforms, the variables available in Twitter's dataset are far more amenable to responding to questions of wider research interest. Our choice of Twitter as the medium of study is deliberate. Twitter's design has proven influential in disseminating unique information and fostering participation through a broader network of acquaintances (Valenzuela, Correa, and Zuniga 2018).

In addition, Twitter's data access policies through its application programming interface (API) are more suitable for open-platform data sources. In this study, a tweet is a message originated and publicly posted by a CEO. In contrast, a retweet publicly reposts a tweet originated either by the senders themselves or others.

We compiled the CEO dataset by collecting all tweets and retweets from individuals serving as CEOs or interim CEOs of any company listed in the S&P 1500 during the first six months of the Russia-Ukraine war. We employed web crawling techniques and specialized Python code to extract data from Twitter (Berger et al. 2020). This resulted in 6,322 (re)tweets from 120 CEOs who posted during this timeframe. Of these, 55 CEOs posted at

¹ From July 2023, Twitter was rebranded as X, with "tweets" being referred to as "posts" and "retweets" as "reposts." See "Twitter's Transformation: From Tweets to X" in The New York Times, July 24, 2023. [<https://www.nytimes.com/2023/07/24/technology/twitter-x-elon-musk.html>]

Author Accepted Manuscript

least once about the Russia-Ukraine war. We then used Python libraries on the dataset to filter only (re)tweets in English that contained specific keywords related to the war (e.g., "war," "Putin," "Russia," "Ukraine," or "Zelensky"), yielding a substantial corpus of 287 tweets.

For the brand dataset, we collected all tweets and retweets from brands listed in the S&P 1500 during the same period. Of 1500 brands, 1230 have a Twitter account, of which 1092 (re)tweeted any information during the first 6 months of the war, which resulted in 229,797 (re)tweets. Of these, 323 brands posted about the Russia-Ukraine war at least once. We then applied Python to the dataset to select only English tweets containing the same specific keywords, resulting in a rich corpus of 1,293 messages. We analyzed the CEO and brand datasets together, resulting in 1,580 messages, 5,041,883 likes, 908,678 retweets, and 206,042 replies for further analysis. Accordingly, we present the different sectors' representation in the final sample dataset (see Web Appendix B).

Data Analysis

Detailed descriptive statistics for the research variables, specifically the aggregated dataset of CEO and brand variables assessed in this study, can be found in Web Appendix C. In our analyses, we have excluded messages with zero likes, retweets, or replies in each respective analysis. Consequently, our models evaluated 1,425 messages for likes, 1,140 messages for retweets, and 646 messages for replies as dependent variables. All models are statically significant, with $\Delta R^2 = .007$ for likes and replies and $\Delta R^2 = .015$ for retweets. Multicollinearity is not deemed to be a concern since all independent variables exhibit a Variance Inflation Factor (VIF) of less than 5. For further details on variable classification and operationalization, refer to Web Appendix D. Additionally, Web Appendix E presents the model-free evidence, including detailed t-test results.

Results

Author Accepted Manuscript

Our regression results strongly indicate that CEO communication on the Russia-Ukraine war significantly outperforms brand communication in garnering public attention and interaction. Specifically, CEO communication is associated with a marked increase in likes ($\beta = 16603.508$, $p < 0.001$), retweets ($\beta = 2863.533$, $p < 0.001$), and replies ($\beta = 510.025$, $p = 0.001$). Web Appendix F delineates the estimated likelihood of an increase in the number of likes on Twitter following CEO communication on the Russia-Ukraine war. Web Appendix G presents the analogous likelihood concerning retweets. Web Appendix H offers insights into the estimated surge in the volume of replies.

In light of these findings, our proposed hypothesis (H1) stands substantiated, evidencing that CEO communication about the Russia-Ukraine war elicits higher public engagement in likes, retweets, and replies than brand communication.

3-way interaction results

In H2a, we postulated that a specific confluence of CEO communication elements would elicit increased public engagement. Specifically, we hypothesized that when CEOs address the Russia-Ukraine war, messages framed around the repercussions for Ukrainian civilians—when imbued with emotional appeal—would increase public engagement, as quantified by likes, retweets, and replies on Twitter. Our analysis, as detailed in Model 2 across Web appendices F, G, and H, revealed compelling evidence supporting this proposition. CEO communication delineating the consequences for Ukrainian civilians, particularly when paired with an emotional appeal, registered a substantial increase in likes ($\beta = 27190.083$, $p < 0.001$), retweets ($\beta = 6765.073$, $p < 0.001$), and replies ($\beta = 671.630$, $p < 0.05$).

In H2b, we postulated that when CEOs articulate perspectives on the Russia-Ukraine war, framing messages to emphasize the war's consequences on the "self"—especially those touching upon the global energy crisis stemming from the war—and harnessing an

Author Accepted Manuscript

informational appeal, this confluence would engender a higher degree of public engagement.

Diving into the results obtained from Model 8, in Web appendices F, G, and H, the data provides strong affirmation for our hypothesis. CEO communications that highlighted the self-centric repercussions of the war, specifically the ensuing global energy crisis, and coupled this framing with an informational appeal witnessed a significant surge in likes ($\beta = 27117.556$, $p < 0.001$), and retweets ($\beta = 6746.939$, $p < 0.001$). The results for replies are marginally significant ($\beta = 669.205$, $p = 0.05$).

By looking at the additional layers of the data, interesting nuances regarding the modulating influence of control variables emerged: CEO tweets posted on workdays were less likely to captivate attention regarding likes, retweets, and replies than those posted over weekends. CEO tweets with short length were associated with greater public engagement, manifesting as increased likes, retweets, and replies. Tweets from CEOs with more followers corresponded to a more pronounced likelihood of receiving likes, retweets, and replies. Notably, Messages with emotional appeal, in contrast to those with an informational appeal, experienced a more pronounced tendency to be retweeted.

Temporal nuances also surfaced, with tweets posted during afternoon or evening hours being less likely to be retweeted than their morning counterparts. In sum, H_{2a} and H_{2b} find robust validation, underscoring the potency of having message framing and appeal in CEO communications about the Russia-Ukraine war.

Discussion

In the evolving digital communication landscape, CEOs increasingly choose to voice their perspectives on pressing sociopolitical events. A pertinent question arises – how does CEO communication, particularly during the Russia-Ukraine war, influence public engagement when compared to brand communication? Our findings illuminate a crucial facet of digital communication: the profound influence of CEOs, particularly when they voice

Author Accepted Manuscript

perspectives on pressing sociopolitical events such as the Russia-Ukraine war. This outperformance of the CEO over brand communication is a testament to the pivotal role the sender plays in shaping public perception and interaction (Hambrick and Wowak 2021; Khumalo, Dumont, and Waldzus 2022; Wilson and Sherrell 1993; Wowak, Busenbark, and Hambrick 2022). Indeed, CEO messages often imbued with personal beliefs and values resonate deeper with the audience, offering a more spontaneous and personalized touch than typical brand communications. Milfeld and Pittman (2023) similarly highlighted the message sender's importance, noting that even assertive messages yield positive outcomes when originating from perceived authoritative sources, such as high market share brands. Drawing parallels, CEOs, much like these dominant brands, may carry an inherent credibility that resonates deeply with audiences, bolstering the efficacy of their messages over typical brand communications.

Delving deeper, the findings can be interpreted through the lens of executive symbolism. When communicating on platforms such as Twitter, CEOs are not merely disseminating information; they are weaving intricate narratives infused with symbolic meaning (Hambrick and Lovelace 2018). When set against a contentious backdrop like the Russia-Ukraine war, such messages can act as potent symbols, epitomizing the CEO's stance and potentially influencing large segments of the public. This aligns with the spiral of silence theory, which posits that individuals are more inclined to voice their opinions when they perceive alignment with majority views (Noelle-Neumann 1974). Through their communication, CEOs have the power to shape these perceived majoritarian views, thereby influencing public discourse.

While our investigation into the impact of CEO communication on public engagement surrounding the Russia-Ukraine war has yielded insightful results, it begets a deeper line of inquiry. The data demonstrates CEO messages' heightened influence and resonance over

Author Accepted Manuscript

traditional brand communications, particularly when they tackle pressing sociopolitical events. However, a critical question emerges beyond engagement metrics such as likes, retweets, and replies: Can CEO communication mobilize people into active, tangible forms of engagement or activism? More specifically, would a CEO's call to support a public policy initiative inspire more active participation than a similar call from a brand? To delve deeper into this question and to extrapolate on our findings from Study 1, we embarked on Study 2. This second study ventures beyond observational data, seeking to probe the transformative potential of CEO communication in spurring public activism in real-world scenarios.

Study 2: How CEO Communication and Framing Mobilizes Public Activism

In Study 2, we wanted to investigate if a CEO proposing a public policy to aid Ukrainian civilians could spur more public activism than a brand doing the same. This study builds upon our initial findings from Study 1, where we looked at how CEO tweets about the Russia-Ukraine war resulted in public engagement. Instead of observing reactions from secondary data, we designed an experiment to test if CEO communication can transform passive online engagement into active involvement. Importantly, our measures in Study 2 aimed to reflect real-world scenarios: We gauged actual public involvement in a policy campaign. Our prior findings about how CEO communication affects public engagement when combined with certain framing and appeal inspired this approach. To ensure accurate results, in study 2, we used a 2 (message sender: CEO vs. brand) x 2 (framing: self vs. other) between-subjects design, which lets us compare different groups without participants trying to guess our intentions or being influenced by other factors.

Method

Before performing the main study, we performed 2 pre-tests for CEO/brand pair selection and stimuli development. For more details, refer to Web Appendix I.

Participants and Design

Author Accepted Manuscript

Six hundred-eight U.S. participants (342 men and 266 women) from Prolific completed the study in exchange for financial compensation. Participants ranged in age from 18 to 39 years ($M = 30.81$ years, $SD = 5.28$). Following Johnson, Bauer, and Carlson (2022), we focused specifically on U.S. citizens. This is because we wanted to see the reactions of those who could directly reach out to their local government representatives. We randomly assigned participants to read one of four vignettes featuring a call for action. Web Appendix J discusses the methodological approach integrating BERT and Generative Pre-trained Transformer (i.e., ChatGPT) for vignette crafting. Web Appendix K contains an example of the final vignette.

In our study, we operationalized public activism based on participants' willingness to join an ostensibly genuine political campaign. We informed participants that a CEO or brand invited them to participate in this campaign. We then randomly assigned participants to one of the four conditions and presented them with actionable requests 'to send a virtual postcard' and 'type a personal message' to their local political representatives. Participants had the flexibility to choose one action, or they could perform both actions, sending the postcard and writing a personal message (Johnson, Bauer, and Carlson 2022). It was framed to the participants that these actions were a collaborative effort between the CEO or brand and our research team, suggesting that any message or postcard they submitted would be forwarded directly to the relevant political authority in their area. Consequently, participants who agreed to be part of the campaign either clicked to dispatch a virtual postcard or actively crafted a message addressing their local representative. At the end of the experiment, after participants completed the demographic information, we disclosed a slight experimental deception related to the action task.

Measures

Author Accepted Manuscript

Our dependent variable, public activism, was dichotomously coded: a score of 1 (one) was attributed to subjects who responded positively to at least one call to action, while a score of 0 (zero) was assigned to those who declined both solicitations. To validate the efficacy of our first manipulation, we included an item that directly queried participants about the perceived message sender. Additionally, we employed a set of items designed to ascertain the success of our framing manipulations.

For the self-framing condition, participants responded to two distinct items. Likewise, for the other-framing condition, we presented two specific items (e.g., "Thinking about the tweet and proposed policy you just evaluated, would you agree the message focuses on helping Ukrainian civilians?"), which participants rated their agreement on a 7-point Likert scale, where 1 signified "strongly disagree" and 7 represented "strongly agree." The inclusion of these items draws on methodologies outlined in prior research (Fisher and Hopp 2020; Ye, Teng, and Wang 2015; White and Peloza 2009). Finally, to capture a richer profile of our respondents and account for potential confounding factors, we also solicited information about their age, gender, and political affiliation.

Manipulation Checks

We conducted a 2 (message sender: CEO vs. brand) x 2 (framing: self vs. others) Analysis of Variance (ANOVA) to assess the efficacy of our manipulations. For the message sender manipulation, the analysis revealed that participants in the CEO condition reported significantly higher mean ratings ($M = 5.710$, $SD = 1.462$) compared to those in the brand condition ($M = 3.420$, $SD = 1.862$, $F(1, 606) = 282.733$, $p < .001$).

In evaluating the framing manipulation, we consolidated participants' ratings of the check items into composite measures. The composite reliability coefficient for the 'others' framing was $\alpha = 0.928$, while that for the 'self' framing was $\alpha = 0.938$. As predicted, participants in the other-framing condition, which emphasized assistance to Ukrainian

Author Accepted Manuscript

civilians, registered higher mean ratings ($M = 5.989$, $SD = 1.280$) than their counterparts in the self-framing condition ($M = 3.132$, $SD = 1.539$, $F(1, 606) = 620.890$, $p < .001$).

Conversely, scores were significantly greater for participants in the self-framing condition, which centered on supporting U.S. citizens ($M = 5.532$, $SD = 1.343$), than those in the other-framing condition ($M = 3.086$, $SD = 1.684$, $F(1, 606) = 390.353$, $p < .001$). These findings affirm our framing manipulation's effectiveness, reinforcing the subsequent analyses' robustness and credibility.

Main Results

By employing a logistic regression model, we evaluated the distinct effects of communications from CEOs and brands on public engagement related to the Russia-Ukraine conflict, specifically regarding their capacity to incite digital activism. The results unambiguously support our proposed hypothesis (H3). Specifically, CEO communication emerged as a stronger motivator of digital activism than brand communication. The regression coefficient for this difference was positive and statistically significant ($b = .437$, $SE = .174$, 95% CI for b : [1.100, 2.179], $p = .012$, $OR = 1.548$). The odds ratio (OR) of 1.548 suggests that the odds of digital activism being mobilized are 1.548 times higher when the communication is from a CEO compared to when it is from a brand, assuming all other factors in the model remain constant. The 95% confidence interval for the regression coefficient further reinforces this effect.

Web Appendix L provides a detailed breakdown of the estimated likelihood of enhanced digital activism following CEO communication. These empirical findings robustly validate our H3, confirming that a CEO's call for public policy support on the Russia-Ukraine war garners more robust digital activism than analogous brand communication.

2-way interaction results

Author Accepted Manuscript

Our analyses discerned the combined influence of message sender (CEO vs. brand) and framing (self vs. other) on public digital activism. The binary logistic regression results unveil distinct patterns based on these factors. CEO-led public policy proposals, when emphasizing support for Ukrainian civilians (other-framing), yielded odds 2.041 times higher of inciting digital activism compared to when brands did the same, given all other variables remained constant ($b = 0.713$, $SE = 0.349$, 95% CI for b : [1.029, 4.049], $p = .041$, $OR = 2.041$). Conversely, CEO messages about challenges faced by U.S. citizens due to the war (self-framing) had half the odds of eliciting digital activism compared to brand messages on the same theme ($b = -0.713$, $SE = 0.349$, 95% CI for b : [0.247, 0.972], $p = .041$, $OR = .490$).

In stark contrast, brand-led policy proposals within a self-framing approach doubled the odds of stimulating digital activism ($b = 0.713$, $SE = 0.349$, 95% CI for b : [1.029, 4.049], $p = .041$, $OR = 2.041$) relative to similar CEO messages. However, brand communication about supporting Ukrainian civilians (other-framing) was associated with a decline in digital activism ($b = -0.713$, $SE = 0.349$, 95% CI for b : [0.247, 0.972], $p = .041$, $OR = .490$). For comprehensive statistical details, refer to Web Appendix L, and for a visual representation of these interactions, see Web Appendix M.

Given that our digital activism measures involved participants sending virtual postcards or written messages, we visualized the most frequently used terms in word clouds. Web Appendix N shows the terms participants used to support the CEO's proposal for Ukrainian civilians, whereas Web Appendix O emphasizes the keywords from messages endorsing brands' policies for U.S. citizens during the war-induced energy crisis. Furthermore, Web Appendix P showcases examples of participants' activist messages. Additional statistical robustness is evidenced by a highly significant Chi-square across all models. Control variable analyses reveal partisan differences in digital activism, with Republicans and Independents engaging less than Democrats.

Author Accepted Manuscript

Robustness Checks

To ensure the reliability and validity of our results, we undertook a comprehensive set of robustness checks. Initially, we employed the Linear Probability Model (LPM) as a simpler alternative to the logistic regression. The LPM offers a preliminary examination of the relationships between predictors and a binary outcome, as detailed in Web Appendix Q. Secondly, to address potential sample heterogeneity, we conducted subsample analyses (Wu et al. 2023), with the specifics outlined in Web Appendix R. Thirdly, considering that multicollinearity can inflate standard errors and lead to misleading interpretations (Jo, Nam, and Choi, 2022), we conducted multicollinearity tests to confirm that our independent variables were not excessively correlated, with these detailed results reported in Web Appendix S. Despite certain robustness checks leading to a significant reduction in sample size, our primary findings consistently emerged, reinforcing their reliability and consistency. The coefficient directions remained unchanged, maintaining statistical significance across all models, including the main effect in the LPM.

Discussion

The compelling results from Study 2 highlight the public's distinct expectations for CEOs compared to corporate brands when addressing geopolitical crises. A CEO's message emphasizing support for Ukrainian civilians may evoke a broader and more altruistic sentiment, thereby inspiring digital activism (Mendini, Peter, and Maione, 2022; Omoto, Snyder, and Hackett, 2010). One possible explanation for such results is that, against the backdrop of complex situations like the Russia-Ukraine war, the public expects CEOs to assume a global leadership role and act ethically (Edelman 2023; McKinsey 2020; Tsai and Men 2017). Conversely, when brands concentrate on aiding U.S. citizens, such a focus may strongly resonate with the public, potentially reflecting a profound sense of local loyalty (Castelló and Mihelj 2018; Ulver and Laurell 2020; Volcic and Andrejevic 2011).

Author Accepted Manuscript

What makes these findings even more noteworthy is the design of Study 2. In contrast to Study 1, this study deliberately incorporated CEO-brand pairs that were less known to and perceived as neutral by participants, as established by our preliminary tests. This indicates that despite the inherent difficulty in communicating messages from less recognized or neutral sources, the way the message is framed and the identity of the sender (whether a CEO or a brand) still had a profound effect on digital activism outcomes. This suggests that the substance of the message and the credibility of the sender can, at times, exert greater influence than the audience's familiarity with the source, highlighting the critical role of effective communication during crises (Barrios et al. 2016; Keller and Berry 2003; Milfeld and Pittman 2023; Tversky and Kahneman 1985).

To fully comprehend these results, it is helpful to consult a variety of theoretical frameworks, which allow us to transition from a general outlook to nuanced cultural considerations. The Executive Symbolism Theory, as elucidated by Hambrick and Lovelace (2018), posits that the actions and declarations of senior executives significantly influence the strategic narrative of an organization. In the context of the contemporary digital landscape, a CEO's public statement, particularly during pivotal events such as wars, transcends mere communication; it embodies the principles and stance of the entire organization (Branicki et al. 2021; Chatterji and Toffel 2019). When a CEO publicly speaks up on behalf of Ukrainian civilians, they are not only communicating a message but are also signaling global empathy, ethical commitment, and a concern for humanity at large. Such a personal and ethical stance is likely to evoke a more potent public reaction than communications from a comparatively impersonal corporate brand.

The spiral of silence theory posits that individuals are less likely to voice unpopular opinions for fear of social isolation (Noelle-Neumann 1974). However, the findings suggest when a highly influential figure, like a CEO, publicly champions a particular viewpoint, it

Author Accepted Manuscript

can disrupt this spiral. By speaking out in support of Ukrainian civilians, the CEO may legitimize this perspective and provide social validation for others to express similar sentiments. This can catalyze a wave of digital activism, as people, previously reticent, feel empowered to join the discourse, bolstered by the CEO's stance (Hambrick and Wowak 2021; Khumalo, Dumont and Waldzus 2022; Wowak, Busenbark, and Hambrick 2022). The public may perceive that their previously silent or minority opinions now have backing from influential quarters, reducing the fear of social ostracism.

When considering cultural factors, the concept of power distance becomes important. In places like the U.S., characterized by moderate power distance, people might expect leaders, especially CEOs, to show global responsibility, perhaps even more so than impersonal corporate entities (Hofstede 2001). In sum, the findings suggest that an interplay of market-driven strategies, whether rooted in the CEO's global visions or the brands' local focus, possibly impacts public behavior.

General Discussion

Building on the premises introduced at the beginning of this research, our findings make significant strides in the literature, particularly within the domain of CEO communication. First and foremost, this research fortifies the bridge between executive symbolism and the spiral of silence theory, highlighting CEOs' salient role in steering societal narratives. Secondly, our results accentuate the unparalleled efficacy of CEO communication in eliciting heightened engagement and activism over comparable brand communications. This underscores the profound gravity and potential ripple effects of CEO messaging in today's digital era. Lastly, our exploration elucidates the specific conditions that magnify these effects, laying the groundwork for further nuanced investigations. With these contributions in mind, we delve deeper into the broader ramifications of our findings in the context of global events and the overarching societal consequences.

Author Accepted Manuscript

The groundbreaking insights of our studies unravel a profound, novel dimension in the realm of marketing research: the impact of organizations, particularly CEOs, in galvanizing public engagement and action towards political entities. The in-depth exploration into the role of CEOs as key message senders vis-à-vis brand communications brings forth compelling sociological, philosophical, and moral considerations.

At its core, our results touch upon the very essence of leadership, communication, and its resultant societal influence (Barberá-Tomás et al. 2019; Hambrick and Wowak 2021; Yue et al. 2021). The pronounced influence of CEO communications on the Russia-Ukraine war over brand communications reflects the nature of influence and, perhaps, authenticity in the digital age (Vredenburg et al. 2020). Philosophically, it reiterates the age-old notion that individuals, especially those in positions of immense power and responsibility, can shape societal discourse, perspectives, and actions (Keller and Berry 2003; Weber 2016). In the modern age, where individual personalities are often given more weight than faceless corporate entities (Khumalo, Dumont, and Waldzus 2022; Mak and Poon 2023; Thomas and Fowler 2023), the CEO emerges not just as a leader of a company, but potentially as a thought leader and influencer in the global sociopolitical arena.

The sociological implications of our findings are multifold. They suggest an evolving paradigm wherein the digitally-equipped public seeks perhaps authentic, empathetic voices amidst the overwhelming number of brand messages. The impact of CEO-led messages, especially those centered around empathy for Ukrainian civilians, might amplify the societal expectation that leaders should manage businesses and champion humanitarian causes (Habermas 1991; Lorenz-Spreen et al. 2020). Such a shift may pave the way for businesses to incorporate more humanitarian-focused approaches in their strategic decision-making (Korschun, Martin, and Vadakkepatt 2020; Shultz 2005; Shultz 2007), as they recognize the

Author Accepted Manuscript

growing importance of socio-political stances in shaping public opinion and driving consumer behavior.

From a moral perspective, this study brings a reflection on the ethical obligations and responsibilities that CEOs bear when voicing perspectives on pivotal global events (Branicki et al. 2021). While a CEO's personal stance might elicit significant public engagement and digital activism, it also brings forth the potential dangers of misinformation or bias, especially when these messages can sway public opinion and discourse (Diaz Ruiz and Nilsson 2023; Di Domenico, Nunan, and Pitardi 2022; Fortune 2023; Solomon, Hall, and Muir 2022). The moral weight of such communications necessitates a greater demand for integrity, authenticity, and responsibility from CEOs, ensuring that their stances are strategic and ethically sound.

In a hyper-connected world, where lines between the personal and the public are constantly blurred, these findings act as a wake-up call for businesses, especially CEOs, to recognize their growing role in the socio-political fabric. As organizations contemplate their broader societal roles beyond mere profit-making (Hambrick and Wowak 2021), the cascading influence of CEOs as pivotal message senders offers both an opportunity and a challenge. The opportunity lies in leading transformative change by influencing public discourse, while the challenge is in ensuring that such influence is wielded responsibly, ethically, and for the greater good (Korschun, Martin, and Vadakkepatt 2020; Shultz 2005; Shultz 2007; Shultz 2022).

Implications for Public Policy and Businesses

In the era of the digital landscape, online platforms have revolutionized the dynamics of engagement and activism. This shift has introduced new responsibilities and opportunities for both policymakers and businesses. CEO communication has proven to wield considerable influence, with the potential to stir significant public reaction and activism. This positions

Author Accepted Manuscript

CEOs uniquely, enabling them to play a pivotal role in shaping public opinion.

Simultaneously, brands cannot afford to be mere spectators. They must actively strategize their digital presence, considering that even passive interactions such as likes or retweets may carry the latent power to morph into active participation with tangible societal outcomes.

Furthermore, the marked distinction between CEO and brand communications paves the way for strategic collaborations. Policymakers have the opportunity to team up with CEOs for joint campaigns, magnifying the reach and efficacy of public policies. On the other hand, businesses might recognize the inherent power of CEO communications and consider positioning their top executives at the forefront, especially when addressing issues of societal and global significance.

Yet, the strength of communication lies not solely in the sender but largely in the content of the message (Tversky and Kahneman 1985). Crafting a message that resonates with its audience is an art, one that both policymakers and businesses must master. Public policies should be tailored with keen sensitivity to the audience's context. Simultaneously, businesses need to calibrate their messaging based on the communicator (Milfeld and Pittman, 2023), with global concerns potentially amplifying the voice of CEOs and local issues finding a more profound echo when channeled through brands.

This digital era also redefines the role of CEOs in the context of major global events or crises. Silence, once a refuge, is no longer a viable option. CEOs are compelled to take informed stances, articulating them with precision and strategy (Feix and Wernicke 2023; Hambrick and Wowak 2021). This proactive engagement can not only nurture deeper connections with the public but also steer society toward the greater good (Korschun, Martin, and Vadakkepatt 2020; Shultz 2022).

Lastly, the landscape is not dominated solely by established players. The study shines a beacon of hope for emerging leaders and nascent brands. The realm of impactful

Author Accepted Manuscript

communication is expansive and inclusive. With astute messaging, even the lesser-known can rise and leave an indelible mark on society.

Limitations and Future Research

The insights from this study stem from a detailed analysis of CEO communications during the sociopolitical event of the Russia-Ukraine war. The specificity of this situation facilitates an in-depth understanding of communication strategies in times of crisis, emphasizing the importance of message framing and sender, particularly when addressing crises involving war or armed conflict. However, it also raises questions about the broader applicability of our findings across various geopolitical or sociopolitical contexts. While our focused approach yields rich detail, it inherently restricts the generalization of our insights to other scenarios.

Future research should delve into the authenticity and sincerity of organizational communication, as these elements are crucial for global stakeholder engagement. These meaningful content elements are essential in shaping trust and relationships between organizations and their audiences (Osorio, Centeno, and Cambra-Fierro 2023). A focused study on these aspects could uncover effective communication strategies that resonate with sincerity and authenticity.

Additionally, the evolving landscape of multiple regional conflicts presents a unique challenge for organizations (Rosa et al. 2023). This complexity is particularly pertinent when companies must balance corporate objectives with their responsibilities toward diverse international communities. Investigating how organizations manage this balance and stakeholders' perceptions of their communication is crucial. The decision-making trade-offs in these contexts and their implications for global stakeholder engagement warrant significant future research.

Author Accepted Manuscript

We also recommend researching CEO communication within lower-middle-income countries to broaden our understanding of the global applicability of our findings (Shultz 2012). Analyzing these environments may reveal whether the engagement and activism patterns identified in the U.S. context are consistent globally or if different economic and cultural landscapes necessitate unique communication strategies.

Further studies could also consider the analogous communication dynamics in the sphere of political leadership. Specifically, investigating how political leaders frame messages on their personal accounts instead of official channels may provide valuable insights into the differential public engagement and activism these messages evoke. Given the pivotal influence of the message sender, as illuminated by our study's focus on CEOs, it would be of interest to discern if patterns exhibited by political leaders mirror or differ from those in corporate communication.

There is also an opportunity to investigate the tangible impact of CEO and brand communications on various business metrics, such as customer perceptions, shareholder returns, sales trajectories, and overall profitability. Here, foundational studies by Colicev et al. (2018), Colicev, Kumar, and O'Connor (2019), and Kumar et al. (2016) offer potential frameworks for approaching this line of inquiry. Moreover, broadening the scope to understand how organizational communication on sociopolitical issues impacts diverse stakeholder groups, with a particular emphasis on investors, will add depth to this research domain. For instance, the recent exploration by Brownen-Trinh and Orujov (2023) into corporate responses to the Black Lives Matter movement could provide a blueprint. Lastly, future research could build on Study 2, which focused on CEO-brand pairs unfamiliar to participants, by exploring how public reactions shift when a study introduces varying degrees of brand familiarity and trust into the equation.

Conclusion

Author Accepted Manuscript

The empirical findings from these comprehensive studies significantly advance our understanding of the profound impact CEOs can have when addressing geopolitical issues, particularly the Russia-Ukraine war. The studies conclusively revealed that CEO communications not only eclipse brand communications in their ability to engage the public but also possess the power to mobilize digital activism. Specifically, when CEOs focus on the challenges of Ukrainian civilians (other-framing), imbuing their messages with emotional appeal, they drive heightened levels of engagement and foster digital activism. In stark contrast, brand-led messages with a local focus (self-framing) resonate deeply with audiences. These insights underscore the nuanced interplay between message framing, message sender, and public reception in the complex realm of digital communication.

As societal expectations evolve, CEOs emerge as not just corporate leaders but global thought leaders, shaping narratives and influencing public actions. This role carries significant ethical implications and responsibilities, particularly in times of war where the potential for communication to either escalate tensions or foster understanding is high. In an era where digital platforms amplify voices from all quarters, CEOs must leverage their influence thoughtfully to act as catalysts for positive change in our globally connected society.

The insights gleaned from our research are intended to contribute meaningfully to the field of marketing research, particularly regarding strategic communication in the context of armed conflicts. Furthermore, we hope to motivate CEOs and brands to adopt responsible and ethically grounded communication practices. By underscoring the vital roles of message framing and the credibility of the sender in wartime scenarios, this study reinforces the urgent need for marketing initiatives to participate constructively in the global dialogue, aiming to alleviate the dire social, economic, and ecological effects of war.

Author Accepted Manuscript

References

- Agnihotri, Arpita, Saurabh Bhattacharya, Natalia Yannopoulou, and Martin J. Liu (2022). Examining social media engagement through health-related message framing in different cultures. *Journal of Business Research*, 152, 349-360.
- Ahmad, Fayez, Francisco Guzmán, and Blair Kidwell (2022). Effective messaging strategies to increase brand love for sociopolitical activist brands. *Journal of Business Research*, 151, 609-622.
- Aksoy, Lerzan, Sandhya Banda, Colleen Harmeling, Timothy L. Keiningham, and Anita Pansari (2022). Marketing's role in multi-stakeholder engagement. *International Journal of Research in Marketing*, 39(2), 445-461.
- Alantari, Huwail J., Imran S. Currim, Yiting Deng, and Sameer Singh (2022). An empirical comparison of machine learning methods for text-based sentiment analysis of online consumer reviews. *International Journal of Research in Marketing*, 39(1), 1-19.
- Albers-Miller, Nancy D. and Marla Royne Stafford (1999). An international analysis of emotional and rational appeals in services vs goods advertising. *Journal of Consumer Marketing*, 16(1), 42-57.
- Andreu, Luiza, Ana B. Casado-Díaz, and Anna S. Mattila (2015). Effects of message appeal and service type in CSR communication strategies. *Journal of Business Research*, 68(7), 1488-1495.
- Batteux, Eleonore, Eamonn Ferguson, and Richard J. Tunney (2019). Do our risk preferences change when we make decisions for others? A meta-analysis of self-other differences in decisions involving risk. *PloS one*, 14(5), e0216566.
- Barberá-Tomás, David, Itziar Castelló, Frank G. A. de Bakker, and Charlene Zietsma (2019). Energizing through visuals: How social entrepreneurs use emotion-symbolic work for social change. *Academy of Management Journal*, 62(6), 1789-1817.
- Barrios, Andres, Kristine de Valck, Clifford Shultz J., Oliver Sibai, Katharina Husemann, Mathew Maxwell-Smith, and Marius Luedicke (2016). Marketing as a means to transformative social conflict resolution: lessons from transitioning war economies and the Colombian coffee marketing system. *Journal of Public Policy & Marketing*, 35(2), 185-197.
- BBC (2014). "Mozilla boss Brendan Eich resigns after gay marriage storm," (accessed February 3, 2023), <https://www.bbc.com/news/technology-26868536>.
- Berger, Jonah, Ashlee Humphreys, Stephan Ludwig, Wendy W. Moe, Oded Netzer, and David A. Schweidel (2020). Uniting the tribes: Using text for marketing insight. *Journal of Marketing*, 84(1), 1-25.
- Bhagwat, Yashoda, Nooshin L. Warren, Joshua T. Beck, and George F. Watson IV (2020). Corporate sociopolitical activism and firm value. *Journal of Marketing*, 84(5), 1-21.
- Bil-Jaruzelska, Ana and Cristina Monzer (2022). All About Feelings? Emotional Appeals as Drivers of User Engagement With Facebook Posts. *Politics and Governance*, 10(1), 172-184.
- Brand24 (2023). "How Effective is Nike's Social Media Strategy? Report [2023]," (accessed March 18, 2023), <https://brand24.com/blog/nike-social-media-strategy/#:~:text=Nike%20systematically%20produces%20video%20content,Cristiano%20Ronaldo%2C%20and%20many%20more>.
- Boegershausen, Johannes, Hannes Datta, Abhishek Borah, and Andrew T. Stephen (2022). Fields of gold: Scraping web data for marketing insights. *Journal of Marketing*, 86(5), 1-20.

Author Accepted Manuscript

- Bojanic, Vanja (2023). The positioning of CEOs as advocates and activists for societal change: reflecting media, receptive and strategic cornerstones. *Journal of Communication Management*.
- Branicki, Layla, Stephen Brammer, Alison Pullen, and Carl Rhodes (2021). The morality of “new” CEO activism. *Journal of Business Ethics*, 170, 269-285.
- Brouard, Myrian, Katja Brunk H., Mario Campana, Marlon Dalmoro, Marcia Christina Ferreira, Bernardo Figueiredo, Daiane Scaraboto, Olivier Sibai, Andrew Smith N., and Meriam Belkhir (2023). “Upload Your Impact”: Can Digital Enclaves Enable Participation in Racialized Markets?. *Journal of Public Policy & Marketing*, 42(1), 56-73.
- Brownen-Trinh, Ruby and Ayan Orujov (2023). Corporate socio-political activism and retail investors: Evidence from the Black Lives Matter campaign. *Journal of Corporate Finance*, 80, 102417.
- Bruce, Peter and Rita Shelley (2010). Assessing stakeholder engagement. *Communication Journal of New Zealand*, 11(2), 30-48.
- Business Insider (2020). “CrossFit CEO apologizes for ‘tone-deaf’ tweet about George Floyd after Reebok cancels its partnership with the fitness company,” (accessed January 29, 2023), <https://www.businessinsider.nl/crossfit-ceo-apologizes-for-tweet-george-floyd-reebok-cancels-partnership-2020-6?international=true&r=US>
- Carpiano, Richard M., Timothy Callaghan, Renee DiResta, Noel Brewer, Chelsea Clinton, Alison Galvani, Rekha Lakshmanan, Wendy Parmet, Saad Omer, Alison Bittenheim, Regina Benjamin, Arthur Caplan, Jad Elharake, Lisa Flowers, Yvonne Maldonado, Michelle Mello, Douglas Opel, Daniel Salmon, Jason Schwartz, Joshua Sharfstein et al (2023). Confronting the evolution and expansion of anti-vaccine activism in the USA in the COVID-19 era. *The Lancet*, 401(10380), 967-970.
- Castelló, Enric, and Sabina Mihelj (2018). Selling and consuming the nation: Understanding consumer nationalism. *Journal of Consumer Culture*, 18(4), 558-576.
- Chatterji, Aaron K. and Michael W. Toffel (2019). Assessing the impact of CEO activism. *Organization & Environment*, 32(2), 159-185.
- Chen, Kuan-Ju, Jih-Syuan Lin, Jung Hwa Choi, and Jung Min Hahm (2015). Would you be my friend? An examination of global marketers' brand personification strategies in social media. *Journal of Interactive Advertising*, 15(2), 97-110.
- Cho, Moonhee, Tiffany Schweickart, and Abigail Haase (2014). Public engagement with nonprofit organizations on Facebook. *Public Relations Review*, 40(3), 565-567.
- Chou, Eileen Y., Dennis Y. Hsu, and Eileen Hernon (2020). From slacktivism to activism: Improving the commitment power of e-pledges for prosocial causes. *PloS one*, 15(4), e0231314.
- Chon, Myoung-Gi and Hyojung Park (2020). Social media activism in the digital age: Testing an integrative model of activism on contentious issues. *Journalism & Mass Communication Quarterly*, 97 (1), 72-97.
- Chung, Tuck Siong, Angie Low, and Roland T. Rust. (2022). Executive confidence and myopic marketing management. *Journal of the Academy of Marketing Science*, 1-25.
- CNBC (2021). “Salesforce offers to relocate employees and their families after Texas abortion law goes into effect,” (accessed March 19, 2023), <https://www.cnn.com/2021/09/10/salesforce-offers-to-relocate-employees-from-texas-after-abortion-bill.html>
- CNN (2022a). “Disney CEO apologizes for ‘silence’ on ‘Don’t Say Gay’ bill”. (accessed September 25, 2023), <https://edition.cnn.com/2022/03/11/media/disney-chapek-apologyfloridalgbtq/index.html#:~:text=Disney%20employs%2075%2C000%20people%20in,that%20was%20obtained%20by%20CNN>

Author Accepted Manuscript

- CNN (2022b). "Salesforce co-CEO: The planet is a key stakeholder," (accessed March 9, 2023), <https://edition.cnn.com/videos/business/2022/09/23/salesforce-marc-benioff-climate-change-harlow-vpx.cnnbusiness>
- Colicev, Anatoli, Ashwin Malshe, Koen Pauwels, and Peter O'Connor (2018). Improving consumer mindset metrics and shareholder value through social media: The different roles of owned and earned media. *Journal of Marketing*, 82(1), 37-56.
- Colicev, Anatoli, Ashish Kumar, and Peter O'Connor (2019). Modeling the relationship between firm and user generated content and the stages of the marketing funnel. *International Journal of Research in Marketing*, 36(1), 100-116.
- Cova, Bernard (2020). To change the law, defy the law: Hijacking the cause and co-opting its advocate. *Journal of Public Policy & Marketing*, 39(4), 430-443.
- Crow, Kellie, Galande Ashish S., Mathew Chylinski and Frank Mathmann (2021). Power and the Tweet: How Viral Messaging Conveys Political Advantage. *Journal of Public Policy & Marketing*, 40(4), 505-520.
- Dal, Aysenur, Erik C. Nisbet, and Olga Kamenchuk (2023). Signaling silence: Affective and cognitive responses to risks of online activism about corruption in an authoritarian context. *New Media & Society*, 25(3), 646-664.
- Davis, Brennan, Dhruv Grewal, and Steve Hamilton (2021). The future of marketing analytics and public policy. *Journal of Public Policy & Marketing*, 40(4), 447-452.
- Deloitte (2022). "Brands can benefit by taking stand on social issues, but risks exist," (accessed January 27, 2023), <https://action.deloitte.com/insight/2023/brands-can-benefit-by-taking-stand-on-social-issues-but-risks-exist>
- De Neufville, Judith I. and Stephen E. Barton (1987). Myths and the definition of policy problems: An exploration of home ownership and public-private partnerships. *Policy Sciences*, 20, 181-206.
- Deng, Lifeng, Daphne Mah, Darren Man-wai Cheung, and Kevin Lo (2023). Civic activism and petition politics in energy transitions: discursive tactics, networking, and media mobilization in an anti-nuclear movement in China. *Energy Research & Social Science*, 95, 102889.
- Detweiler-Bedell, Brian, Jerusha Detweiler-Bedell, and Peter Salovey (2006). Mood-congruent perceptions of success depend on self-other framing. *Cognition & Emotion*, 20(2), 196-216.
- Devlin, Jacob, Ming-Wei Chang, Kenton Lee, and Kristina Toutanova (2018). Bert: Pre-training of deep bidirectional transformers for language understanding. arXiv preprint arXiv:1810.04805.
- Diaz Ruiz, Carlos and Tomas Nilsson (2023). Disinformation and echo chambers: how disinformation circulates on social media through identity-driven controversies. *Journal of Public Policy & Marketing*, 42(1), 18-35.
- Di Domenico, Giandomenico, Daniel Nunan, and Valentina Pitardi (2022). Marketplaces of misinformation: A study of how vaccine misinformation is legitimized on social media. *Journal of Public Policy & Marketing*, 41(4), 319-335.
- Edelman (2022). "The new cascade of influence," Research Report, Edelman Trust Barometer Annual Global Study (February 3)
- Edelman (2023). "Navigating the polarizing," Research Report, Edelman Trust Barometer Annual Global Study (March 9)
- Eilert, Meike and Abigail Nappier Cherup (2020). The activist company: Examining a company's pursuit of societal change through corporate activism using an institutional theoretical lens. *Journal of Public Policy & Marketing*, 39(4), 461-476.
- Feix, Aurélien, and Georg Wernicke (2023). When Is CEO Activism Conducive to the Democratic Process?. *Journal of Business Ethics*, 1-20.

Author Accepted Manuscript

- Fisher, Jolene and Toby Hopp (2020). Does the framing of transparency impact trust? Differences between self-benefit and other-benefit message frames. *International Journal of Strategic Communication*, 14 (3), 203-222.
- Ferrucci Patrick, Toby Hopp, and Chris Vargo J. (2020). Civic engagement, social capital, and ideological extremity: Exploring online political engagement and political expression on Facebook. *New Media & Society*, 22(6), 1095-1115.
- Florence, Emma, Shaozhen, David Fleischman, Rory Mulcahy, and Monte Wynder (2022). Message framing effects on sustainable consumer behaviour: a systematic review and future research directions for social marketing. *Journal of Social Marketing*, 12(4), 623-652.
- Forbes (2020). "The Importance Of Brand Voice And Tone", (accessed March 20, 2023), <https://www.forbes.com/sites/forbesagencycouncil/2020/12/07/the-importance-of-brand-voice-and-tone/?sh=8c13d33d32c5>
- Forbes (2022). "Corporate Purpose Should Guide Your Company's Position On The War On Ukraine," (accessed March 15, 2023), <https://www.forbes.com/sites/timabansal/2022/04/01/your-corporate-purpose-should-guide-your-position-on-the-russian-war-on-ukraine/?sh=48b5f62957a1>.
- Fortune (2023). "A pharma company helping Elon Musk shed weight is now worth more than the entire economy of Denmark". (accessed September 25, 2023), <https://fortune.com/2023/08/11/weight-loss-diabetes-ozempic-wegovy-elon-musk-novo-nordisk-denmark/>
- Giffin, Kim (1967). The contribution of studies of source credibility to a theory of interpersonal trust in the communication process. *Psychological bulletin*, 68(2), 104.
- Gladwell, Malcolm (2010). *Small change*. The New Yorker, 4.
- George Jordana J., and Dorothy Leidner E. (2019). From clicktivism to hacktivism: Understanding digital activism. *Information and Organization*, 29(3), 100249.
- Guitart, Ivan A. and Stefan Stremersch (2021). The impact of informational and emotional television ad content on online search and sales. *Journal of Marketing Research*, 58(2), 299-320.
- Gross, Jana and Florian von Wangenheim (2022). Influencer Marketing on Instagram: Empirical Research on Social Media Engagement with Sponsored Posts. *Journal of Interactive Advertising*, 22(3), 289-310.
- Grover, Purva, Arpan Kumar Kar and P. Vigneswara Ilavarasan, (2019). Impact of corporate social responsibility on reputation—Insights from tweets on sustainable development goals by CEOs. *International journal of information management*, 48, 39-52.
- Gursoy, Dogan, Yuksel Ekinici, Ali Selcuk Can, and Jessica C. Murray (2022). Effectiveness of message framing in changing COVID-19 vaccination intentions: Moderating role of travel desire. *Tourism Management*, 90, 104468.
- Gu, Jiayan, Lorien Abrams C., David Broniatowski A., and Douglas Evans, W. (2022). An investigation of influential users in the promotion and marketing of heated tobacco products on instagram: a social network analysis. *International Journal of Environmental Research and Public Health*, 19(3), 1686.
- Gupta, Ashish, Han Li, Alireza Farnoush and Wenting Jiang (2022). Understanding patterns of COVID infodemic: A systematic and pragmatic approach to curb fake news. *Journal of business research*, 140, 670-683.
- Habermas, Jürgen (1991). *The structural transformation of the public sphere: An inquiry into a category of bourgeois society*. MIT press.
- Hamby, Anne and Niusha Jones (2022). The effect of affect: An appraisal theory perspective on emotional engagement in narrative persuasion. *Journal of Advertising*, 51(1), 116-131.

Author Accepted Manuscript

- Hambrick, Donald C. and Jeffrey B. Lovelace (2018). The role of executive symbolism in advancing new strategic themes in organizations: A social influence perspective. *Academy of Management Review*, 43(1), 110-131.
- Hambrick, Donald C., and Adam J. Wowak (2021). CEO sociopolitical activism: A stakeholder alignment model. *Academy of Management Review*, 46(1), 33-59.
- Hampton, Keith N., Lee Rainie, Weixu Lu, Maria Dwyer, Inyoung Shin, and Kristen Purcell (2014). Social media and the 'spiral of silence'.
- Heavey, Ciaran, Zeki Simsek, Christina Kyprianou and Marten Risius (2020). How do strategic leaders engage with social media? A theoretical framework for research and practice. *Strategic Management Journal*, 41(8), 1490-1527.
- Hofstede, Geert (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. sage.
- Hwang, Sungwook and Cameron, Glen T. (2008). Public's expectation about an organization's stance in crisis communication based on perceived leadership and perceived severity of threats. *Public Relations Review*, 34(1), 70-73.
- Ipsos (2023). "One year in, global public opinion about the war in Ukraine has remained remarkably stable," (accessed March 15, 2023), <https://www.ipsos.com/en/war-in-ukraine-january-2023>.
- Ismagilova, Elvira, Emma Slade, Nripendra P. Rana and Yogesh K. Dwivedi (2020). The effect of characteristics of source credibility on consumer behaviour: A meta-analysis. *Journal of Retailing and Consumer Services*, 53, 101736.
- Jaeger, Anna-Katharina and Anja Weber (2020). Can you believe it? The effects of benefit type versus construal level on advertisement credibility and purchase intention for organic food. *Journal of Cleaner Production*, 257, 120543.
- Jahng, Mi Rosie and Seoyeon Hong (2017). How should you tweet?: The effect of crisis response voices, strategy, and prior brand attitude in social media crisis communication. *Corporate Reputation Review*, 20, 147-157.
- Jalali, Nima Y., and Purushottam Papatla (2019). Composing tweets to increase retweets. *International Journal of Research in Marketing*, 36(4), 647-668.
- Jiang, Hua, Yi Luo and Owen Kulemeka (2016). Social media engagement as an evaluation barometer: Insights from communication executives. *Public relations review*, 42(4), 679-691.
- Jin, Jie, Renee Mitson, Yufan Sunny Qin, Marc Vielledent, M., and Linjuan Rita Men (2023). Enhancing young consumer's relational and behavioral outcomes: The impact of CEO activism authenticity and value alignment. *Public Relations Review*, 49(2), 102312.
- Johnson, Clark D., Brittney C. Bauer, and Brad D. Carlson (2022). Constituency building: Determining consumers' willingness to participate in corporate political activities. *International Journal of Research in Marketing*, 39(1), 42-57.
- Jo, Wooyong, Hyoryung Nam, and Jeonghye Choi (2022). Opening the OTC drug market: The effect of deregulation on retail pharmacy's performance. *International Journal of Research in Marketing*, 39(3), 847-866.
- Joyce, Mary C. (2010). *Digital activism decoded: The new mechanics of change*. IDEA.
- Karagür, Zeynep, Jan-Michael Becker, Kristina Klein, and Alexander Edeling (2022). How, why, and when disclosure type matters for influencer marketing. *International Journal of Research in Marketing*, 39(2), 313-335.
- Kavada, Anastasia (2015). Creating the collective: social media, the Occupy Movement and its constitution as a collective actor. *Information, Communication & Society*, 18(8), 872-886.
- Keller, Edward and Jonathan Berry (2003). *The influentials: One American in ten tells the other nine how to vote, where to eat, and what to buy*. Simon and Schuster.

Author Accepted Manuscript

- Khumalo, Nonhlanhla, Kitty B. Dumont, and Sven Waldzus (2022). Leaders' influence on collective action: An identity leadership perspective. *The Leadership Quarterly*, 33(4), 101609.
- Kim, Cheonsoo, and Sung-Un Yang (2017). Like, comment, and share on Facebook: How each behavior differs from the other. *Public relations review*, 43(2), 441-449.
- Kim, Hyejin, Euna Mehnaz Khan, Jisu Huh, and Jaideep Srivastava (2022). Fighting negative rumors with trust-based rumor-refutation strategy. *Journal of Marketing Communications*, 1-25.
- Kim, MinChung, Guiyang Xiong and Kwang-Ho Kim (2018). Where does pride lead? Corporate managerial hubris and strategic emphasis. *Journal of the Academy of Marketing Science*, 46, 537-556.
- Kim, Nuri, Hye Kyung Kim, Si Jin Tan, Wen Hsing Kelvin Wang, and Kheng Hian Ong (2023). The moral license of a click: How social observability and impression management tendencies moderate the effects of online clicktivism on donation behavior. *New Media & Society*, 14614448231153971.
- Korschun, Daniel, Kelly D. Martin, and Gautham Vadakkepatt. (2020). Marketing's role in understanding political activity. *Journal of Public Policy & Marketing*, 39(4), 378-387.
- Kuznetsova, Daria (2023). Broadcasting Messages via Telegram: Pro-Government Social Media Control During the 2020 Protests in Belarus and 2022 Anti-War Protests in Russia. *Political Communication*, 1-22.
- Kumar, Ashish, Ram Bezawada, Rishika Rishika, Ramkumar Janakiraman, and P. K. Kannan (2016). From social to sale: The effects of firm-generated content in social media on customer behavior. *Journal of Marketing*, 80(1), 7-25.
- Kureshi, Sonal and Sujo Thomas (2020). Testing the influence of message framing, donation magnitude, and product category in a cause-related marketing context. *Journal of Marketing Communications*, 26(3), 268-289.
- Lacetera, Nicola, Mario Macis, and Angelo Mele (2016). Viral Altruism? Charitable Giving and Social Contagion in Online Networks. *Sociological Science*, 3.
- Layton, Roger A. (2015). Formation, growth, and adaptive change in marketing systems. *Journal of Macromarketing*, 35(3), 302-319.
- Laufer, Daniel, Tony Garrett C., and Bo Ning (2018). The moderating role of power distance on the reaction of consumers to the CEO as a spokesperson during a product harm crisis: Insights from China and South Korea. *Journal of International Management*, 24(3), 215-221.
- Lee, So Young and Lucy Atkinson (2019). Never easy to say "sorry": Exploring the interplay of crisis involvement, brand image, and message appeal in developing effective corporate apologies. *Public Relations Review*, 45(1), 178-188.
- Lee, Yeunjae (2022). Dynamics of symmetrical communication within organizations: The impacts of channel usage of CEO, managers, and peers. *International Journal of Business Communication*, 59(1), 3-21.
- Legocki, Kimberly V., Kristen L. Walker, and Tina Kiesler (2020). Sound and fury: digital vigilantism as a form of consumer voice. *Journal of Public Policy & Marketing*, 39(2), 169-187.
- Li, Kai, Cheng Zhou, Xin Luo, Jose Benitez, and Qinyu Liao (2022). Impact of information timeliness and richness on public engagement on social media during COVID-19 pandemic: An empirical investigation based on NLP and machine learning. *Decision Support Systems*, 162, 113752.
- Lobera, Josep and Martin Portos (2021). Decentralizing electoral campaigns? New-old parties, grassroots and digital activism. *Information, Communication & Society*, 24(10), 1419-1440.

Author Accepted Manuscript

- Lorenz-Spreen, Philipp, Stephan Lewandowsky, Cass Sunstein, and Ralph Hertwig (2020). How behavioural sciences can promote truth, autonomy and democratic discourse online. *Nature human behaviour*, 4(11), 1102-1109.
- Maheswaran, Durairaj, and Joan Meyers-Levy (1990). The influence of message framing and issue involvement. *Journal of Marketing Research*, 27(3), 361-367.
- Mak, Veronica Sau-Wa and Amber Kai-Yan Poon (2023). Digital activism and citizenship: a case study of “yellow” food influencers and political consumerism in Hong Kong. *Food, Culture & Society*, 1-19.
- Matthews, Michael J., Samuel H. Matthews, Dawei (David) Wang and Thomas K. Kelemen (2022). Tweet, like, subscribe! Understanding leadership through social media use. *The leadership quarterly*, 33(1), 101580.
- McKinsey (2020). “Leadership in a crisis: Responding to the coronavirus outbreak and future challenges,” (accessed March 7, 2023), <https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/leadership-in-a-crisis-responding-to-the-coronavirus-outbreak-and-future-challenges>
- Mendini, Monica, Paula Peter C., and Salvatore Maione (2022). The potential positive effects of time spent on Instagram on consumers’ gratitude, altruism, and willingness to donate. *Journal of Business Research*, 143, 16-26.
- Men, Linjuan Rita and Wan-Hsiu Sunny Tsai (2016). Public engagement with CEOs on social media: Motivations and relational outcomes. *Public Relations Review*, 42(5), 932-942.
- Mesiranta, Nina, Elina Närvänen, and Malla Mattila (2022). Framings of food waste: How food system stakeholders are responsabilized in public policy debate. *Journal of Public Policy & Marketing*, 41(2), 144-161.
- Michielsen, Yolie J. and Hilje M. van der Horst (2022). Backlash against meat curtailment policies in online discourse: Populism as a missing link. *Appetite*, 171, 105931.
- Milfeld, Tyler, and Matthew Pittman (2023). Altercast framing with assertive sustainability messages: how dominant brands can motivate non-green consumers. *International Journal of Advertising*, 1-29.
- Moorman, Christine (2020). Commentary: Brand activism in a political world. *Journal of Public Policy & Marketing*, 39(4), 388-392.
- Mukherjee, Sourjo and Niek Althuizen (2020). Brand activism: Does courting controversy help or hurt a brand?. *International journal of research in marketing*, 37(4), 772-788.
- Nasrin, Sohana and Dana R. Fisher (2022). Understanding collective identity in virtual spaces: a study of the youth climate movement. *American Behavioral Scientist*, 66(9), 1286-1308.
- Nezami, Mehdi, Stefan Worm, and Robert W. Palmatier (2018). Disentangling the effect of services on B2B firm value: Trade-offs of sales, profits, and earnings volatility. *International Journal of Research in Marketing*, 35(2), 205-223.
- Noelle-Neumann, Elisabeth (1974). The spiral of silence a theory of public opinion. *Journal of Communication*, 24(2), 43-51.
- O'Brien, Heather L. and Elaine G. Toms (2008). What is user engagement? A conceptual framework for defining user engagement with technology. *Journal of the American society for Information Science and Technology*, 59(6), 938-955.
- OECD (2022). “Disinformation and Russia’s war of aggression against Ukraine.” (accessed September 17, 2023), <https://www.oecd.org/ukraine-hub/policy-responses/disinformation-and-russia-s-war-of-aggression-against-ukraine-37186bde/>

Author Accepted Manuscript

- Omoto, Allen M., Mark Snyder, and Justin D. Hackett (2010). Personality and motivational antecedents of activism and civic engagement. *Journal of Personality*, 78(6), 1703-1734.
- Oliver, Pamela E. (1989). Bringing the crowd back in: The nonorganizational elements of social movements. *Research in Social Movements, Conflict and Change*, 11(1989), 1-30.
- Osorio, Maria Lucila, Edgar Centeno and Jesus Cambra-Fierro (2023). An empirical examination of human brand authenticity as a driver of brand love. *Journal of Business Research*, 165, 114059.
- Pancer, Ethan, Vincent Chandler, Maxwell Poole, and Theodore Noseworthy (2019). How readability shapes social media engagement. *Journal of Consumer Psychology*, 29(2), 262-270.
- Pauwels, Koen and Vanessa Gail Perry (2022). Models that matter: How quantitative marketing research can impact public policy. *Journal of Public Policy & Marketing*, 41(3), 206-210.
- Park, Chang Sup and Barbara K. Kaye (2017). The tweet goes on: Interconnection of Twitter opinion leadership, network size, and civic engagement. *Computers in Human Behavior*, 69, 174-180.
- Pfeffer, Jeffrey (1981). Management as symbolic action: the creation and maintenance of organizational paradigm. *Research in organizational behavior*, 3, 1-52.
- Pöyry, Essi and Salla-Maaria Laaksonen (2022). Opposing brand activism: triggers and strategies of consumers' antibrand actions. *European Journal of Marketing*, 56(13), 261-284.
- Rietveld, Robert, Willemijn Van Dolen, Masoud Mazloom, and Marcel Worring (2020). What you feel, is what you like influence of message appeals on customer engagement on Instagram. *Journal of Interactive Marketing*, 49, 20-53.
- Robertson, Scott P. (2018). *Social Media and civic engagement: History, theory, and practice*. Morgan & Claypool Publishers.
- Robertson Thomas S. and James Myers, H. (1969). Personality correlates of opinion leadership and innovative buying behavior. *Journal of Marketing Research*, 6(2), 164-168.
- Rosa, W. E., Connor, S., Downing, J., Marston, J., and Radbruch, L. (2023). Access to palliative medicine in armed conflict: a basic right and an urgent need. *The Lancet*.
- Rossi, Raffaello, Agnes Nairn, Josh Smith, and Christopher Inskip (2021). "Get a£ 10 Free Bet Every Week!"—Gambling Advertising on Twitter: Volume, Content, Followers, Engagement, and Regulatory Compliance. *Journal of Public Policy & Marketing*, 40(4), 487-504.
- Ryoo, Yuhosua, Soheil Kafiliveyjuyeh, Jung Ah Lee, Woojin Kim Yongjun Sung (2023). The impact of materialism and moral identity on post-neutralization behavior in social media environmental campaigns. *International Journal of Advertising*, 1-31.
- Schradie, Jen (2018). The digital activism gap: How class and costs shape online collective action. *Social Problems*, 65 (1), 51-74.
- Shahin, Saif and Zehui Dai (2019). Understanding public engagement with global aid agencies on Twitter: A technosocial framework. *American Behavioral Scientist*, 63(12), 1684-1707.
- Shankar, Venkatesh, and Sohil Parsana (2022). An overview and empirical comparison of natural language processing (NLP) models and an introduction to and empirical application of autoencoder models in marketing. *Journal of the Academy of Marketing Science*, 50(6), 1324-1350.

Author Accepted Manuscript

- Shultz, Clifford J. (2005). Some macromarketing thoughts on recent natural and human-induced disasters. *Journal of Macromarketing*, 25(1), 3-4.
- Shultz, Clifford J. (2007). Marketing as constructive engagement. *Journal of Public Policy & Marketing*, 26(2), 293-301.
- Shultz, Clifford J. (2016). Marketing an end to war: constructive engagement, community wellbeing, and sustainable peace. *Markets, Globalization & Development Review*, 1(2).
- Shultz, Clifford J. (2022). Macroserving: a commentary on services as constructive engagement for sustainable peace, prosperity and well-being. *Journal of Services Marketing*, 36 (7), 877-884.
- Shultz, Clifford J, Rohit Deshpandé, T. Bettina Cornwell, Ahmet Ekici, Prabakar Kothandaraman, Mark Peterson, Stanley Shapiro, Debabrata, and Ann Veeck (2012). Marketing and public policy: Transformative research in developing markets. *Journal of Public Policy & Marketing*, 31 (2), 178-184.
- Skoric, Marko M., Nan Zhang, Juma Kasadha, Chun Hong Tse, and Jing Liu (2022). Reducing the Use of Disposable Plastics through Public Engagement Campaigns: An Experimental Study of the Effectiveness of Message Appeals, Modalities, and Sources. *International Journal of Environmental Research and Public Health*, 19(14), 8273.
- Skurka, Chris, Nicholas Eng and Mary Beth Oliver (2022). On the effects and boundaries of awe and humor appeals for pro-environmental engagement. *International Journal of Communication*, 16, 21.
- Smith, Brian G. and Tiffany Derville Gallicano (2015). Terms of engagement: Analyzing public engagement with organizations through social media. *Computers in human Behavior*, 53, 82-90.
- Solomon, Brittany C., Matthew EK Hall, and Cindy P. Muir. (2022). When and why bias suppression is difficult to sustain: The asymmetric effect of intermittent accountability. *Academy of Management Journal*, 65(5), 1450-1476.
- Son, Jihyeong, Changhyun Nam, and Sonali Diddi (2022). Emotion or Information: What Makes Consumers Communicate about Sustainable Apparel Products on Social Media?. *Sustainability*, 14(5), 2849.
- Sorce, Giuliana and Delia Dumitrica (2022). Transnational dimensions in digital activism and protest. *Review of Communication*, 22(3), 157-174.
- Sprout Social (2019). “#BrandsGetReal: Brands Creating Change in the Conscious Consumer Era,” (accessed January 27, 2023), <https://sproutsocial.com/insights/data/brands-creating-change/#a-united-front-starts-from-within>
- Sprout Social (2022). “Sprout Social Index: Social Media Trends for 2022 and Beyond,” (accessed January 27, 2023), <https://sproutsocial.com/insights/index/>
- Statista (2023). “Brands and agencies responding to war in Ukraine - statistics & facts,” (accessed January 25, 2023), <https://www.statista.com/topics/9413/brands-and-agencies-responding-to-war-in-ukraine/#topicOverview>
- Sutton, Robert I. and Charles Galunic (1995). *Consequences of public scrutiny for leaders and their organizations* (Vol. 79). Fontainebleau, France: INSEAD.
- Taylor, Maureen and Michael L. Kent (2014). Dialogic engagement: Clarifying foundational concepts. *Journal of Public Relations Research*, 26(5), 384-398.
- The Pittsburgh 100 (2023). “A CEO’s voice: A critical asset for business leaders looking to make a difference”, (accessed March 20, 2023), <https://thepittsburgh100.com/business/business-tips/2023/02/27/a-ceos-voice-a-critical-asset-for-business-leaders-looking-to-make-a-difference/17466>
- The Drum (2022). “70% of Brits believe brands should take public stance against Ukraine invasion,” (accessed on January 26, 2023),

Author Accepted Manuscript

- <https://www.thedrum.com/news/2022/03/10/70-brits-believe-brands-should-take-public-stance-against-ukraine-invasion>
- Thomas, Veronica L. and Kendra Fowler (2023). Examining the outcomes of influencer activism. *Journal of Business Research*, 154, 113336.
- Thorson, Kjerstin (2014). Facing an uncertain reception: Young citizens and political interaction on Facebook. *Information, Communication & Society*, 17 (2), 203-216.
- Trope, Yaacov and Nira Liberman (2010). Construal-level theory of psychological distance. *Psychological review*, 117(2), 440.
- Tsai, Wan-Hsiu Sunny and Linjuan Rita Men (2017). Social CEOs: The effects of CEOs' communication styles and parasocial interaction on social networking sites. *New Media & Society*, 19(11), 1848-1867.
- Tversky, Amos and Daniel Kahneman (1985). The framing of decisions and the psychology of choice (pp. 25-41). Springer US.
- Ulver, Sophia and Christopher Laurell (2020). Political ideology in consumer resistance: Analyzing far-right opposition to multicultural marketing. *Journal of Public Policy & Marketing*, 39(4), 477-493.
- Valenzuela, Sebastián, Teresa Correa, and Homero Gil de Zúñiga (2018). Ties, likes, and tweets: Using strong and weak ties to explain differences in protest participation across Facebook and Twitter use. *Political Communication*, 35(1), 117-134.
- Valsesia, Francesca, Davide Proserpio, and Joseph C. Nunes (2020). The positive effect of not following others on social media. *Journal of Marketing Research*, 57(6), 1152-1168.
- Volcic, Zala, and Mark Andrejevic (2011). Nation branding in the era of commercial nationalism. *International Journal of Communication*, 5, 21.
- Vernuccio, Maria (2014). Communicating corporate brands through social media: An exploratory study. *International Journal of Business Communication*, 51(3), 211-233.
- Vredenburg, Jessica, Sommer Kapitan, Amanda Spry, and Joya A. Kemper (2020). Brands taking a stand: Authentic brand activism or woke washing?. *Journal of Public Policy & Marketing*, 39(4), 444-460.
- Wan, Echo W. and Derek D. Rucker (2013). Confidence and construal framing: When confidence increases versus decreases information processing. *Journal of Consumer Research*, 39(5), 977-992.
- Wallach, Karen Anne and Deidre Popovich (2023). Cause beneficial or cause exploitative? Using joint motives to increase credibility of sustainability efforts. *Journal of Public Policy & Marketing*, 42 (2), 187-202.
- Weber, T. J., Jeff Joireman, David E. Sprott, and Chris Hydock (2023). Differential response to corporate political advocacy and corporate social responsibility: implications for political polarization and radicalization. *Journal of Public Policy & Marketing*, 42(1), 74-93.
- Weber, Max (2016). Economy and society. In *Democracy: A Reader* (pp. 247-251). Columbia University Press.
- Westphal, James D. and Edward J. Zajac (1998). The symbolic management of stockholders: Corporate governance reforms and shareholder reactions. *Administrative science quarterly*, 127-153.
- White, Katherine, and John Peloza (2009). Self-benefit versus other-benefit marketing appeals: Their effectiveness in generating charitable support. *Journal of Marketing*, 73(4), 109-124.
- Wilson, Elizabeth J. and Daniel L. Sherrell (1993). Source effects in communication and persuasion research: A meta-analysis of effect size. *Journal of the Academy of Marketing Science*, 21, 101-112.

Author Accepted Manuscript

- Wowak, Adam J., John R. Busenbark, and Donald C. Hambrick. (2022). How do employees react when their CEO speaks out? Intra-and extra-firm implications of CEO sociopolitical activism. *Administrative Science Quarterly*, 67(2), 553-593.
- Wu Yuechen, Ruijuan Wang, Huizhen Jin, and Meng Zhu (2023). Providing Assets in the Sharing Economy: Low Childhood Socioeconomic Status as a Barrier. *International Journal of Research in Marketing*.
- WWF (2023). "The EU's Clean Industrial Revolution: catching up on green tech at the risk of environmental damage," (accessed March 18, 2023), <https://www.wwf.eu/?9452966/PR-NZIA-CRMA-Proposal>
- Ye, Nan, Lefa Teng, Ying Yu, and Yingyuan Wang (2015). "What's in it for me?": The effect of donation outcomes on donation behavior. *Journal of Business Research*, 68(3), 480-486.
- Yoo, Changjo and Deborah MacInnis (2005). The brand attitude formation process of emotional and informational ads. *Journal of Business Research*, 58(10), 1397-1406.
- Yoon, Ahyoung, Daeyoung Jeong, Jinhyung Chon, and Ji-Hwan Yoon (2019). A study of consumers' intentions to participate in responsible tourism using message framing and appeals. *Sustainability*, 11(3), 865.
- YouGov (2022). "How can brand activism impact consumer sentiment?", Research Report (March 20).
- Yousef, Murooj, Timo Dietrich, Sharyn Rundle-Thiele and Saleem Alhabash (2022). Emotional appeals effectiveness in enhancing charity digital advertisements. *Journal of Philanthropy and Marketing*, 27(4), e1763.
- Yue, Cen April, Patrick Thelen, Katy Robinson and Linjuan Rita Men (2019). How do CEOs communicate on Twitter? A comparative study between Fortune 200 companies and top startup companies. *Corporate Communications: An International Journal*.
- Yue, Cen April, Yoo Jin Chung, Tom Kelleher, Amanda S. Bradshaw and Mary Ann Ferguson (2021). How CEO social media disclosure and gender affect perceived CEO attributes, relationship investment, and engagement intention. *Journalism & Mass Communication Quarterly*, 98(4), 1157-1180.
- Xiang, Diandian, Leinan Zhang, Qiuyan Tao, Yonggui Wang and Shuang Ma (2019). Informational or emotional appeals in crowdfunding message strategy: An empirical investigation of backers' support decisions. *Journal of the Academy of Marketing Science*, 47, 1046-1063.
- Zhang Weiwu, Thomas Johnson, Trent Seltzer, and Shannon Bichard (2010). The revolution will be networked: The influence of social networking sites on political attitudes and behavior. *Social Science Computer Review*, 28(1), 75-92.

Author Accepted Manuscript

Finding the Right Voice: How CEO Communication on the Russia-Ukraine War Drives Public Engagement and Digital Activism

Kedma Hamelberg (k.hamelberg@uva.nl), Ko de Ruyter (ko.de_ruyter@kcl.ac.uk),
Willemijn van Dolen (w.m.vandolen@uva.nl) and Umut Konuş (u.konus@uva.nl)

Web Appendices

Web Appendix A: Glossary of Key Conceptual Terms.....	2
Web Appendix B: Sectors' Distribution in the Combined CEO and Brand Dataset.....	3
Web Appendix C: Descriptive Statistics of Study 1	4
Web Appendix D: Variables Classification and Description	5
Web Appendix E: Model Free Evidence for Public Engagement Between CEO vs. Brand.....	6
Web Appendix F: The Effects of CEO Communication on Likes	7
Web Appendix G: The Effects of CEO Communication on Retweets.....	8
Web Appendix H: The Effects of CEO Communication on Replies.....	9
Web Appendix I: Pretests 1 and 2 (Study 2).....	10
Web Appendix J: Methodological Integration of BERTopic and ChatGPT in Vignette Crafting (Study 2)	12
Web Appendix K: Example of Vignette (Study 2).....	18
Web Appendix L: The Effects of CEO Communication on Digital Activism (Study 2)	22
Web Appendix M: The Effects of CEO And Self Vs. Other-Framing on Public Activism....	23
Web Appendix N: Word Cloud with Frequent Terms Written by the Participants in the CEO X Other-Framing Condition.....	24
Web Appendix O: Word Cloud with Frequent Terms Written by the Participants in the Brand X Self-Framing Condition	25
Web Appendix P: Samples of Activist Messages Crafted by the Participants	26
Web Appendix Q: Robustness' Check Linear Probability Model (LPM) of CEO Communication.....	27
Web Appendix R: Robustness' Check Subsample Logistic Regression of CEO Communication (N=323).....	28
Web Appendix S: Robustness' Check Multicollinearity (VIF) of CEO Communication.....	29
References.....	30

These materials have been supplied by the authors to aid in the understanding of their paper.

The AMA is sharing these materials at the request of the authors.

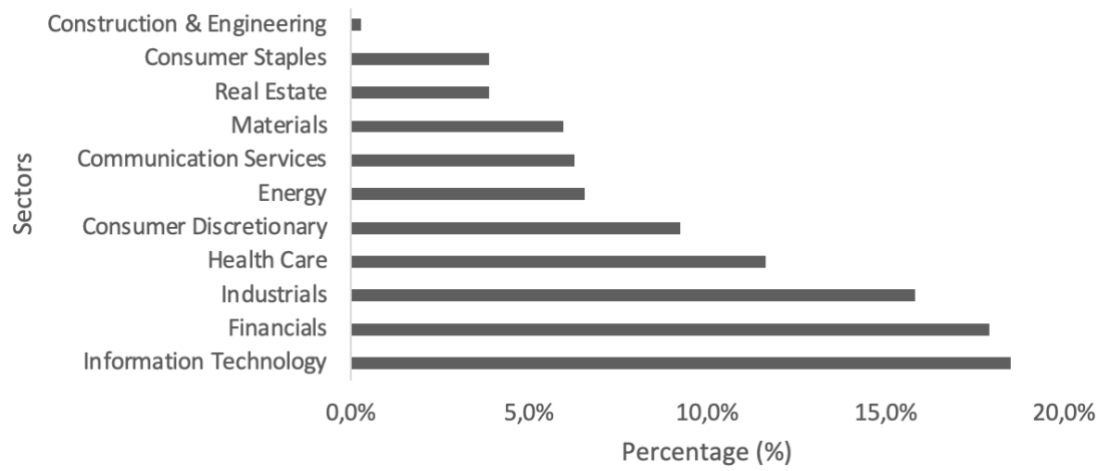
Author Accepted Manuscript

Web Appendix A: Glossary of Key Conceptual Terms

Term	Definition
Message / Communication (study 1)	It refers to each tweet or retweet submitted by CEOs or brands in Twitter during the first 6 months of the Russia-Ukraine war.
Message / Communication (study 2)	It refers to the CEO or brand communication of a public policy proposal to alleviate the consequences of the Russia-Ukraine war.
Public Engagement	Public engagement refers to the level of involvement, interaction, and participation of individuals or groups with a particular message, issue, or event. In the context of social media, public engagement can be measured by likes, retweets, and replies on posts related to a specific topic or event.
Digital Activism	In this research, it refers to the act of leveraging digital technologies to support a proposed public policy, either by sending a virtual postcard or writing local representatives to pressure them on the proposed changes.
Message sender	It refers to the individual or group who initiates and creates a message to be conveyed to a receiver or audience. The sender is responsible for encoding the message, which involves selecting the appropriate words, symbols, and nonverbal cues to effectively communicate their intended meaning. In this study the message senders are CEO and brands.
Message framing	It is the way that information is presented to influence people's attitudes and behaviors. It refers to how a message is constructed, highlighting either the benefits or the risks of a particular action, to encourage a specific response. In this study, we aim to investigate the engaging power of CEO messages related to the Russia-Ukraine war using other-self framing. This means examining how CEO messages that highlight the potential consequences to specific populations (i.e., "other") as well as the broader community or society (i.e., "self") can be effective in engaging stakeholders.
Message appeal	It refers to the way that a message is designed to appeal to an audience's emotions, values, or interests. The present study uses both informational and emotional appeal in CEO messages regarding the Russia-Ukraine war. Informational appeal focuses on providing facts, data, and statistics to support the message, while emotional appeal aims to evoke feelings such as fear, sadness, or empathy.

Author Accepted Manuscript

Web Appendix B: Sectors' Distribution in the Combined CEO and Brand Dataset



Author Accepted Manuscript

Web Appendix C: Descriptive Statistics of Study 1 (N=1580)

	Minimum	Maximum	Sum	M	SD
Public engagement (numbers)					
Likes	0	547.585	5041.883	3191.070	30447.849
Retweets	0	100.809	908.678	575.110	5268.490
Replies	0	27.934	206.042	130.41	1256.524
Message sender (dummy)					
CEO	0	1	287	.180	.386
Brand (reference)	0	1	1293	.818	.386
Framing (dummy)					
Other	0	1	745	.470	.499
Self	0	1	835	.529	.499
Appeal (dummy)					
Informational	0	1	1.202	.761	.427
Emotional	0	1	378	.240	.427
Time of the day (dummy)					
Morning (reference)	0	1	151	.096	.294
Afternoon	0	1	733	.464	.499
Evening	0	1	696	.441	.497
Day of the week (dummy)					
Weekday	0	1	1.446	.915	.279
Weekend (reference)	0	1	134	.085	.279
Hashtags (numbers)	0	13	802	.508	1.047
Mentions @ (numbers)	0	10	938	.594	.939
Presence links (dummy)	0	1	1.214	.768	.422
Message length (log)	0	4.043	5377.608	3.404	.398
Followers (log)	3.611	18.514	16788.151	10.625	2.060

Author Accepted Manuscript

Web Appendix D: Variables Classification and Description

Variables	Description	Operationalization
<i>Dependent variables</i>		
Likes	In Twitter, likes are an indicator of engagement, representing the count of users who have appreciated or agreed with a particular post.	Count: Total number of likes each tweet received
Retweets	Retweets are a prominent indicator of engagement, denoting the number of times a post has been shared or re-broadcasted by users.	Count: Total number of retweets each tweet received
Replies	Replies are a significant indicator of engagement, signifying the number of user responses or discussions a tweet has elicited.	Count: Total number of replies each tweet received
Digital activism	In this research, the online mobilization for public policy advocacy through methods like sending virtual postcards or digitally reaching out to representatives.	=1 if the participant agrees to send virtual postcards or digitally reach out to representatives. 0 otherwise
<i>Independent variables</i>		
Message sender	It is defined as the entity initiating and formulating a message for an audience	= 1 if the message is from CEO, and 0 if from brand
Message framing	In this study, framing refers to what the message sender says using other-self framing. We assess the impact of messages emphasizing the war consequences for specific groups (i.e., other) or the broader society (i.e., self).	= 1 if the message is framed on the war consequences for "other", and 0 if framed on the war consequences for "self". To address some hypotheses the inverse was also tested.
Message appeal	In this study, appeal refers to how the message sender communicates a message. We use informational appeal (relying on facts and data) and emotional appeal (intending to stir emotions like fear or empathy).	= 1 if the message has informational appeal, and 0 if it has emotional appeal. To address some hypotheses the inverse was also tested.
<i>Controls</i>		
Time of the day	Time of the tweet	= 1 if the message is sent in the afternoon, 0 otherwise = 1 if the message is sent in the evening, 0 otherwise
Workday	Day of tweeting: workday or weekend	= 1 if the message is sent on a workday (Monday-Friday), 0 otherwise
Number of hashtags (#)	Number of hashtags within a tweet; hashtags act as key terms, enhancing the tweet's visibility and searchability on the platform.	Count: Total number of hashtags (#) each message has
Number of mentions (@)	In tweets, the "@" symbol represents mentions, used to link or reference other Twitter's accounts within a post message.	Count: Total number of mentions (@) each message has
Links presence	It refers to the inclusion of URLs or web addresses directing users to external content or websites	= 1 if the message has at least 1 link, 0 otherwise
Message length	Number of words within a tweet; the more words in the tweet, the more effort required to process the message, but it may contain more information	The natural log of number of words in each message
Followers	It indicates the total count of users who have subscribed to see an account's tweets in their timeline.	The natural log of CEO number of followers

Web Appendix E: Model Free Evidence for Public Engagement Between CEO vs. Brand Communication About the War

Before presenting the major results, we present a two-sample t-test. It aims to determine if there is any significant difference in public engagement (measured as the number of likes, retweets, and replies) between CEO (N = 287) and brand (N = 1293) communication about the war. On average, CEO communication about the war receives higher public engagement regarding likes, retweets, and replies than brand communication. The difference between the two groups is statistically and practically significant in each type of engagement ($p < 0.001$). More specifically, a significant difference exists between CEOs' and brands' communication in terms of likes ($t_{286.149} = 3.912$, $p < 0.001$), retweets ($t_{286.346} = 3.958$, $p < 0.001$), and replies ($t_{287.826} = 3.550$, $p < 0.001$). The model-free evidence suggests that public engagement with CEOs' communication about the war is significantly larger than brands' communication about the war (see Table E1).

Table E1: T-Test for Public Engagement Between CEO vs. Brand Communication About the War

Public Engagement	CEO= 1		Brand = 0		t-test	95% Confidence interval	
	M	SD	M	SD	t-value	Lower	Upper
Likes	16392.45	69847.827	260.83	2395.322	3.912***	8015.329	24247.906
Retweets	2877.98	12039.909	63.96	628.296	3.958***	1414.757	4213.294
Comments	613.62	2813.691	23.15	337.193	3.550***	263.051	917.890

Note: *** $p < 0.001$

Author Accepted Manuscript

Web Appendix F: The Effects of CEO Communication on Likes (Study 1)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
<i>Independent variables</i>								
CEO communication	16603.508*** (3714.269)	16786.560*** (3702.666)	16603.508*** (3714.269)	16783.447*** (3702.659)	16603.508*** (3714.269)	16789.968*** (3702.740)	16603.508*** (3714.269)	16786.892*** (3702.733)
Other-framing	782.919 (1498.944)	296.409 (1501.162)	782.919 (1498.944)	296.859 (1501.155)				
Self-framing					-782.919 (1498.944)	-296.727 (1501.206)	-782.919 (1498.944)	-297.177 (1501.199)
Emotional appeal	2659.117 (1720.668)	2436.860 (1716.392)			2659.117 (1720.668)	2438.892 (1716.400)		
Informational appeal			-2659.117 (1720.668)	-2437.463 (1716.389)			-2659.117 (1720.668)	-2439.493 (1716.397)
<i>Interactions</i>								
CEO X other-framing		27190.083*** (8129.161)						
X emotional appeal								
CEO X other-framing				-27176.037*** (8126.959)				
X informational appeal								
CEO X self-framing X						-27131.606*** (8129.39)		
emotional appeal								
CEO X self-framing X								27117.556*** (8127.151)
informational appeal								
<i>Control variables</i>								
Time of the day -	-3289.405 (2605.487)	-3352.180 (2597.132)	-3289.405 (2605.487)	-3351.117 (2597.134)	-3289.405 (2605.487)	-3349.822 (2597.167)	-3289.405 (2605.487)	-3348.762 (2597.170)
afternoon								
Time of the day -	-2650.645 (2609.838)	-3107.804 (2604.989)	-2650.645 (2609.838)	-3107.121 (2604.985)	-2650.645 (2609.838)	-3104.713 (2604.996)	-2650.645 (2609.838)	-3104.032 (2604.992)
evening								
Workdays	-14787.678*** (2657.473)	-15284.328*** (2653.041)	-14787.678*** (2657.473)	-15283.755*** (2653.038)	-14787.678*** (2657.473)	-15283.214*** (2604.996)	-14787.678*** (2657.473)	-15282.642*** (2653.078)
# hashtags	66.878 (715.114)	19.560 (712.943)	66.878 (715.114)	19.686 (712.944)	66.878 (715.114)	19.908 (712.953)	66.878 (715.114)	20.034 (712.953)
# mentions @	-679.330 (785.193)	-743.585 (782.890)	-679.330 (785.193)	-743.874 (782.894)	-679.330 (785.193)	-743.923 (782.906)	-679.330 (785.193)	-744.212 (782.909)
Presence links	1599.912 (3386.643)	992.640 (3380.574)	1599.912 (3386.643)	991.598 (3380.599)	1599.912 (3386.643)	994.912 (3380.610)	1599.912 (3386.643)	993.872 (3380.635)
# words (log)	-5954.416** (1867.962)	-6163.930*** (1862.976)	-5954.416** (1867.962)	-6163.356*** (1862.974)	-5954.416** (1867.962)	-6162.389*** (1862.994)	-5954.416** (1867.962)	-6161.816*** (1862.992)
# followers (log)	3142.473*** (364.996)	3121.914*** (363.868)	3142.473*** (364.996)	3121.454*** (363.871)	3142.473*** (364.996)	3121.832*** (363.874)	3142.473*** (364.996)	3121.373*** (363.877)
(Constant)	1413.105 (9743.596)	3931.215 (9741.233)	4072.222 (9894.216)	6370.996*** (9886.177)	2196.024 (9721.734)	4217.530 (9709.366)	4855.141 (9882.173)	6659.779 (9865.231)
N	1580	1580	1580	1580	1580	1580	1580	1580

Notes. Significant coefficients *p < .05, **p < .01, ***p < .001. Standard errors are in parentheses.

Web Appendix G: The Effects of CEO Communication on Retweets (Study 1)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
<i>Independent variables</i>								
CEO communication	2863.533*** (650.946)	2909.077*** (646.556)	2863.533*** (650.946)	2908.316*** (646.553)	2863.533*** (650.946)	29.09.911*** (646.582)	2863.533*** (650.946)	29.09.159*** (646.579)
Other-framing	311.880 (262.698)	190.833 (262.131)	311.880 (262.698)	190.910 (262.130)				
Self-framing					-311.880 (262.698)	-190.949 (262.144)	-311.880 (262.698)	-191.026 (262.143)
Emotional appeal	711.489* (301.556)	656.190* (299.715)			711.489* (301.556)	656.712* (299.722)		
Informational appeal			-711.489* (301.556)	-656.324* (299.713)			-711.489* (301.556)	-656.846* (299.721)
<i>Interactions</i>								
CEO X other-framing X emotional appeal		6765.073*** (1419.506)						
CEO X other-framing X informational appeal				-6763.530*** (1419.118)				
CEO X self-framing X emotional appeal						-6748.481*** (1419.569)		
CEO X self-framing X informational appeal								6746.939*** (1419.180)
<i>Control variables</i>								
Time of the day - afternoon	-1016.279* (456.626)	-1031.898* (453.509)	-1016.279* (456.626)	-1031.637* (453.508)	-1016.279* (456.626)	-1031.306* (453.524)	-1016.279* (456.626)	-1031.047* (453.523)
Time of the day - evening	-853.750 (457.388)	-967.494* (454.880)	-853.750 (457.388)	-967.357* (454.879)	-853.750 (457.388)	-966.691* (454.891)	-853.750 (457.388)	-966.554* (454.889)
Workdays	-2194.418*** (465.737)	-2317.988*** (463.271)	-2194.418*** (465.737)	-2317.881*** (463.270)	-2194.418*** (465.737)	-2317.673*** (463.288)	-2194.418*** (465.737)	-2317.567*** (463.286)
# hashtags	-13.482 (125.328)	-25.255 (124.493)	-13.482 (125.328)	-25.227 (124.493)	-13.482 (125.328)	-25.165 (124.498)	-13.482 (125.328)	-25.137 (124.497)
# @	-122.734 (137.609)	-138.721 (136.707)	-122.734 (137.609)	-138.797 (136.708)	-122.734 (137.609)	-138.800 (136.713)	-122.734 (137.609)	-138.877 (136.713)
Presence links	334.790 (593.528)	183.696 (590.312)	334.790 (593.528)	183.393 (590.315)	334.790 (593.528)	184.307 (590.331)	334.790 (593.528)	184.005 (590.334)
# words (log)	-842.627* (327.370)	-894.756** (325.311)	-842.627* (327.370)	-894.628** (325.310)	-842.627* (327.370)	-894.357** (325.321)	-842.627* (327.370)	-894.229** (325.320)
# followers (log)	420.531*** (63.967)	415.416*** (63.538)	420.531*** (63.967)	415.300*** (63.539)	420.531*** (63.967)	415.397*** (63.541)	420.531*** (63.967)	415.282*** (63.541)
(Constant)	815.633 (1707.618)	1442.156 (1701.004)	1527.122 (1734.015)	2099.237 (1726.310)	1127.513 (1703.787)	1630.325 (1695.474)	1839.002 (1731.904)	2288.002 (1722.687)
N	1580	1580	1580	1580	1580	1580	1580	1580

Notes. Significant coefficients * $p < .05$, ** $p < .01$, *** $p < .001$. Standard errors are in parentheses.

Author Accepted Manuscript

Web Appendix H: The Effects of CEO Communication on Replies (Study 1)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
<i>Independent variables</i>								
CEO communication	510.025** (155.237) p=.001	514.546*** (155.111) p<.001	510.025** (155.237) p=.001	514.471*** (155.111) p<.001	510.025** (155.237) p=.001	514.625*** (155.113) p<.001	510.025** (155.237) p=.001	514.550*** (155.113) p<.001
Other-framing	28.420 (62.648)	16.402 (62.886)	28.420 (62.648)	16.410 (62.886)				
Self-framing					-28.420 (62.648)	-16.425 (62.888)	-28.420 (62.648)	-16.433 (62.887)
Emotional appeal	80.207 (71.915)	74.716 (71.903)			80.207 (71.915)	74.773 (71.903)		
Informational appeal			-80.207 (71.915)	-74.730 (71.902)			-80.207 (71.915)	-74.787 (71.902)
<i>Interactions</i>								
CEO X other-framing		671.630*						
X emotional appeal		(340.545)						
CEO X other-framing				-671.479*				
X informational appeal				(340.452)				
CEO X self-framing X emotional appeal						-669.356 (340.551)		
CEO X self-framing X informational appeal								669.205 (340.458)
<i>Control variables</i>								
Time of the day - afternoon	-95.203 (108.896)	-96.753 (108.799)	-95.203 (108.896)	-96.727 (108.798)	-95.203 (108.896)	-96.693 (108.799)	-95.203 (108.896)	-96.667 (108.799)
Time of the day - evening	-38.383 (109.078)	-49.676 (109.128)	-38.383 (109.078)	-49.662 (109.127)	-38.383 (109.078)	-49.585 (109.127)	-38.383 (109.078)	-49.572 (109.127)
Workdays	-438.640*** (111.069)	-450.908*** (111.141)	-438.640*** (111.069)	-450.898*** (111.140)	-438.640*** (111.069)	-450.866*** (111.142)	-438.640*** (111.069)	-450.855*** (111.141)
# hashtags	2.768 (29.888)	1.600 (29.866)	2.768 (29.888)	1.612 (29.866)	2.768 (29.888)	1.610 (29.867)	2.768 (29.888)	1.612 (29.867)
# @	-29.630 (32.817)	-31.218 (32.797)	-29.630 (32.817)	-31.225 (32.797)	-29.630 (32.817)	-31.224 (32.797)	-29.630 (32.817)	-31.231 (32.797)
Presence links	-70.474 (141.544)	-85.475 (141.618)	-70.474 (141.544)	-85.505 (141.619)	-70.474 (141.544)	-85.400 (141.619)	-70.474 (141.544)	-85.430 (141.620)
# words (log)	-172.256* (78.071)	-177.431* (78.043)	-172.256* (78.071)	-177.419* (78.043)	-172.256* (78.071)	-177.387* (78.044)	-172.256* (78.071)	-177.374* (78.043)
# followers (log)	130.674*** (15.255)	130.166*** (15.243)	130.674*** (15.255)	130.154*** (15.243)	130.674*** (15.255)	130.164*** (15.243)	130.674*** (15.255)	130.153*** (15.243)
(Constant)	-264.156 (407.232)	-201.956 (408.078)	-183.950 (413.527)	-127.151*** (414.149)	-235.737 (406.318)	-185.865 (406.740)	-155.530 (413.024)	-110.995 (413.269)
N	1580	1580	1580	1580	1580	1580	1580	1580

Notes. Significant coefficients at *p < .05, **p < .01, ***p < .001. Standard errors are in parentheses.

Web Appendix I: Pretests 1 and 2 (Study 2)***Selection of CEO/Brand Pairs and Stimuli Development***

Given that research has not yet developed a process for selecting CEO/brand pairs, following past literature on brand and CEO separately, we relied on common measures from both message senders to select the pairs. Before pretesting the stimuli, we selected CEO/brand pairs based on familiarity and attitude toward the CEO (brand). To this end, we used the dataset of Study 1 as a departure point. The dataset had a total of 338 CEOs and brands (not necessarily in pairs). From that total, we identified a total of 34 CEO/brand pairs across different sectors. We pretested all the 34 CEO/brand pairs regarding familiarity and attitude.

The familiarity measure involves the question “*How familiar are you with CEO X (brand Y)?*” measured on a 7-point scale ranging from 1 = not at all familiar to 7 = very familiar (MacInnis and Park 1991). For the attitude towards the CEO (brand), we applied a three-item, seven-point semantic differential scale with subjects' evaluations of the CEO (brand) ranging from very bad to very good, unfavorable to favorable, and not at all likable to very likable (e.g., “*How likable do you find the CEO X (brand Y)*”). The three items were adapted from Jin and Lee (2019), Kim and Sung (2021), MacInnis and Park (1991), and Muehling (1987).

We randomly assigned 40 participants (50% female, 50% male, Mage = 35.8 years) to all 34 CEOs and 34 brands in Prolific. Next, participants evaluated each CEO and brand separately regarding familiarity and attitude using a 7-point Likert scale. From that total, we selected 5 CEO-brand pairs from 5 different industries to guarantee the generalization of results (Dhaoui and Webster 2021). In sum, the selected pairs had the lowest familiarity mean score, and the participants had the most neutral mean score on attitude toward each of them (see Table I1).

Author Accepted Manuscript

Table I1: The 5 CEO/Brand Pairs Selected for Study 2 via Pretest 1

	CEO	Brand	Industry	Familiarity (Mean)	Attitude towards the CEO/brand (Mean)
Pair 1	Douglas Godshall	Shockwave Medical	Healthcare	1,50	4,05
Pair 2	Nick Deluliis	CNX	Energy	1,53	3,94
Pair 3	Yogesh Gupta	Progress	Information Technology	1,61	4,10
Pair 4	Rich Handler	Jefferies	Financial	1,81	4,04
Pair 5	Jonas Prising	Manpower	Employment agency	2,00	4,08

Pretest 2

We recruited 22 participants in Prolific (55% male, 45% female, Mage= 41.23) to test whether our message sender and framing manipulations are indeed understood. As a first step, the participants were asked to measure who the message sender is on a seven-point Likert scale. We manipulated the message sender by randomly allocating respondents to a vignette with either the CEO or a brand. The scores were analyzed on a one-way analysis of variance (ANOVA) to check whether our manipulation had the intended effect. Respondents who were presented with CEO vignettes (namely, Douglas Godshall, Nick Deluliis, Yogesh Gupta, Rich Handler, and Jonas Prising) scored higher on the CEO scale compared to those who were allocated to brand vignettes (namely, Shockwave Medical, CNX, Progress, Jefferies and Manpower) and scored lower on the same scale. ($M_{CEO} = 5.92$, $SD = 0.29$; $M_{brand} = 2.70$, $SD = 1.77$; $F(1, 20) = 38.9$, $p < 0,001$). Our results suggest that our message sender manipulation was successful.

Likewise, the framing test was successful. Respondents who were presented with other-framing vignettes (i.e., in support of Ukrainian civilians) scored higher on the Ukrainian civilian's scale compared to those who were allocated to self-framing vignettes (i.e., in support of American citizens) and scored lower on the same scale. ($M_{other} = 6.46$, $SD = 0.69$; $M_{self} = 2.80$, $SD = 1.44$, $F(1, 20) = 61.27$, $p < 0,001$).

Web Appendix J: Methodological Integration of BERTopic and ChatGPT in Vignette Crafting (Study 2)

To enhance the authenticity and realism of our campaign and manipulations, we integrated advanced topic modeling (i.e., BERT) and language generation techniques (i.e., ChatGPT). BERTopic is a contemporary topic modeling approach that leverages BERT embeddings to uncover and categorize distinct topics in a collection of textual data. Given the data input from real tweets by CEOs and brands centered around the Russia-Ukraine war from our Study 1, BERTopic identified "energy crisis" and "help Ukrainians" as the most salient topics. Within these topics, specific words were associated with varying weights indicating their significance and centrality to the topic.

Leveraging the words and their respective weights provided by BERTopic, we utilized ChatGPT to craft nuanced vignettes. This integration ensures that the narratives generated are not only coherent and contextually relevant but also reflective of the prevalent discourse surrounding the Russia-Ukraine war in real tweets. Specifically, the vignettes varied based on the sender of the call (CEO vs. brand) and the framing of the public policy campaign (self-framing vs. other-framing), ensuring they resonate with the real-world ramifications of the Russia-Ukraine war.

The self-framing vignette encapsulated a tweet and policy proposal by the CEO or brand directed at mitigating the adversities from the energy crisis faced by American citizens, a direct consequence of the Russia-Ukraine war. Conversely, the other-framing vignette highlighted the CEO or brand's policy initiative concentrated on aiding Ukrainian civilians affected by the war. To the best of our knowledge, this study is pioneering on leveraging a synergistic approach of BERTopic and ChatGPT for such experimental designs. In the following pages, we share the methodological integration in more detail.

Author Accepted Manuscript

BERT and BERTopics:

BERT (Bidirectional Encoder Representations from Transformers) is a state-of-the-art natural language processing (NLP) model introduced by Google in 2018. It uses Transformer architecture to understand the context of words in a sentence by reading the entire sequence of words at once rather than one by one (Devlin et al. 2018). This makes BERT especially potent at handling nuances in language.

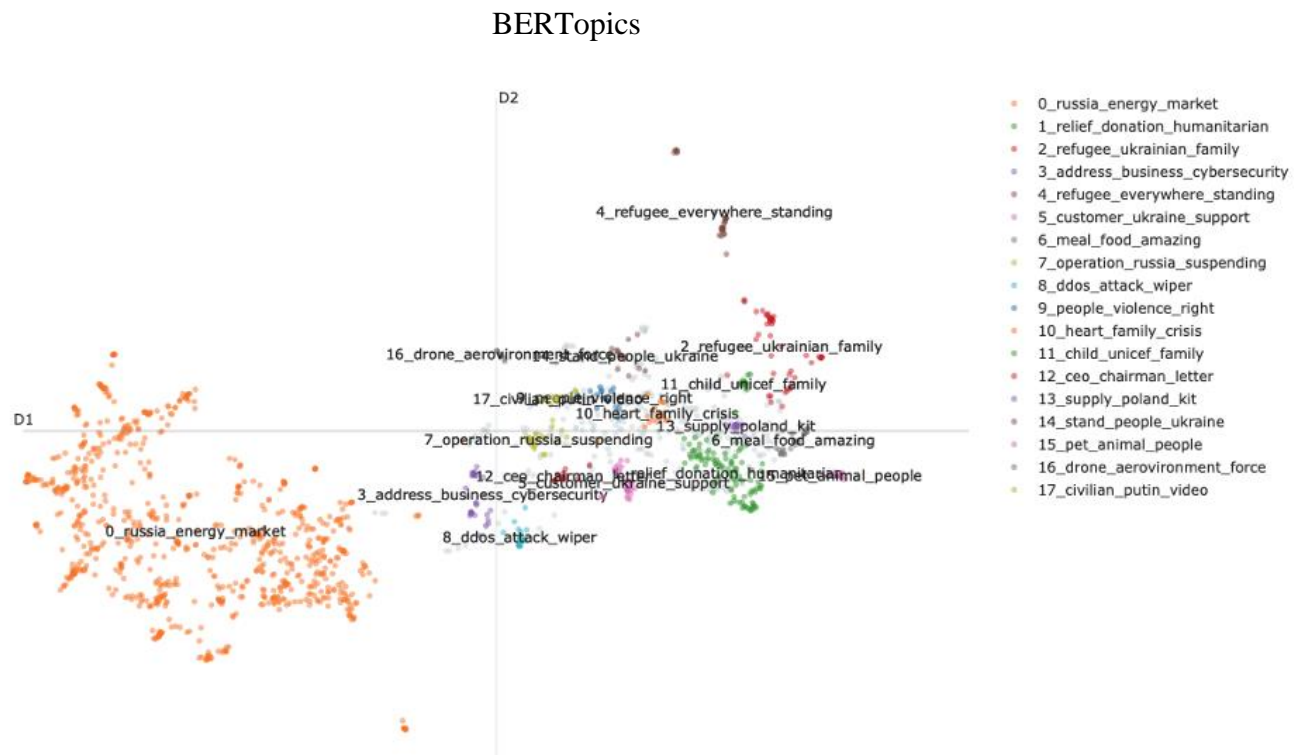
BERTopics is a technique that utilizes BERT embeddings for topic modeling. Unlike traditional topic modeling techniques like LDA (Latent Dirichlet Allocation), BERTopics leverage the context-sensitive embeddings of BERT to capture the semantic meanings of words better and thereby generate more coherent and meaningful topics (Xu 2022).

Topic Word Scores from BERTopics:

BERTopics operates unsupervised, meaning it automatically discovers the underlying topics without predefined labels or categories (Figure J1). Therefore, the 18 topics obtained from BERTopics are directly derived from the dataset containing CEO and brand tweets about the Russia-Ukraine war, representing the dominant themes within this dataset.

Author Accepted Manuscript

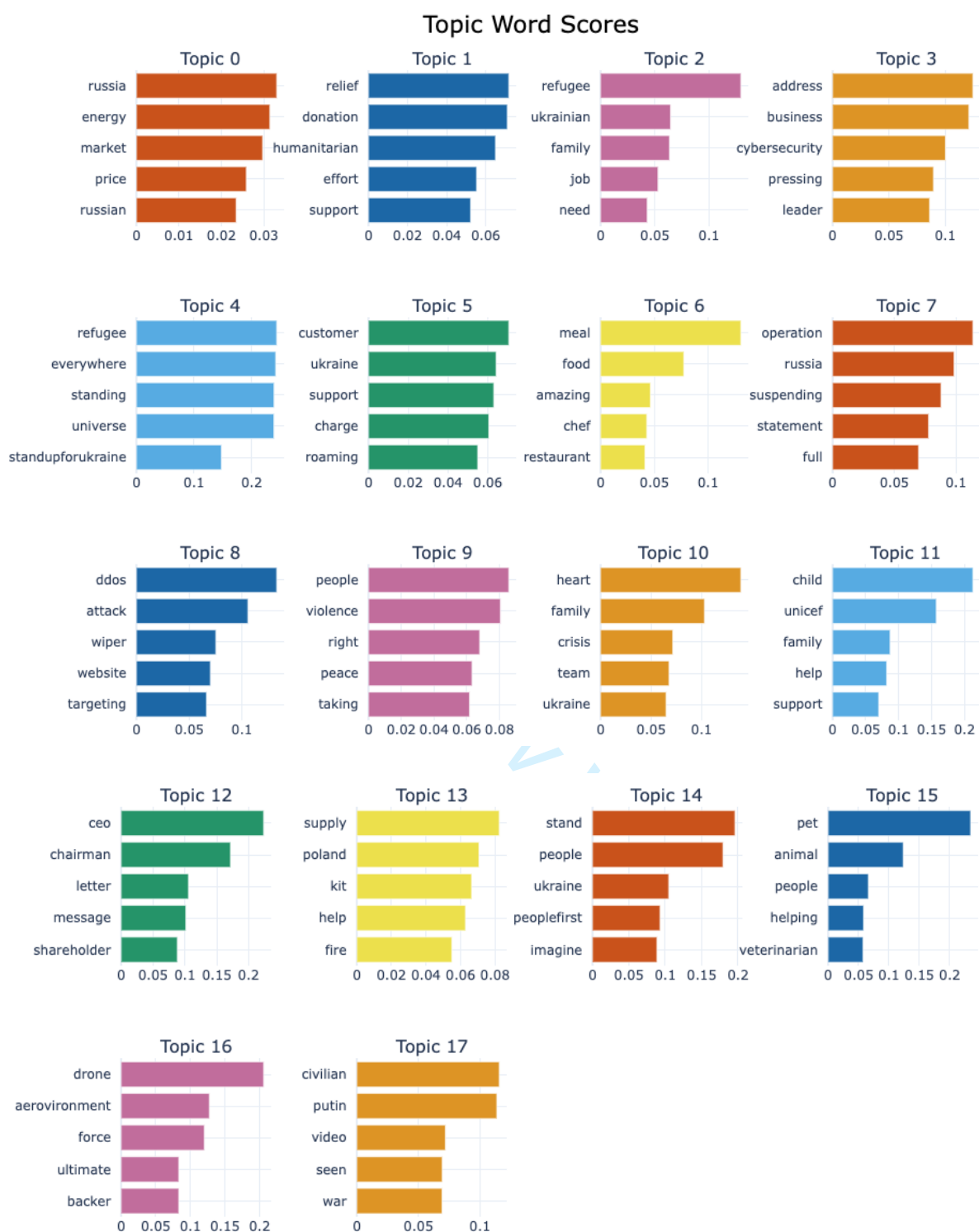
Figure J1: Dimensional Overview of the Key Topics from Dataset of Study 1 Applying



In BERTopics, each topic consists of a set of words that define the topic's theme. The "Topic Word Scores" indicate the relevance or weight of each word within its respective topic (Grootendorst 2022). A higher score suggests that the word is more central or important to the topic's meaning, while a lower score indicates lesser relevance (Figure J2).

Author Accepted Manuscript

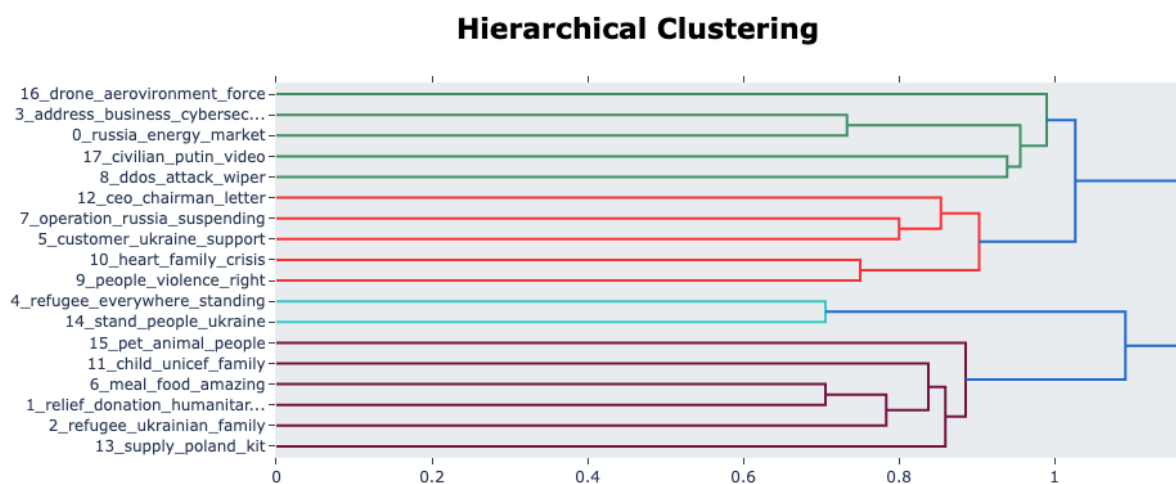
Figure J2: Key Topics From Dataset of Study 1 Applying BERTTopics



Hierarchical Clustering from BERTopics:

Hierarchical clustering is a method of grouping similar objects into a hierarchy or tree-like structure called a dendrogram. Within the context of BERTopics, hierarchical clustering is applied to the topics themselves to identify broader themes or clusters of related topics (Grootendorst 2022). In the accompanying figure, it can be observed that there are two main groups of topics: those related to the "energy crisis" and those concerning "Ukrainian civilians.". These two main clusters corroborate the findings from Study 1, thereby validating the emergent topics from the tweets (Figure J3).

Figure J3: Hierarchical Clustering Using BERTopics

***Using BERTopics for Vignette Confection in Chatgpt:***

ChatGPT refers to versions of the OpenAI GPT (Generative Pre-trained Transformer) models that are fine-tuned specifically for conversational tasks (Zhou et al. 2023). For Study 2, the frequency of words per topic derived from BERTopics was used as input for ChatGPT. This input served as a foundation or guide for ChatGPT to generate vignettes for the experiment. Essentially, ChatGPT used the dominant words and their respective frequencies

Author Accepted Manuscript

to craft contextually relevant and meaningful vignettes that encapsulate the essence of each topic. Here we list some advantages of such a pioneer approach:

- **Data-Driven Insights:** By using BERTopics on real-world data (CEO and brand tweets), the generated topics are grounded in real discourse, ensuring relevance and authenticity.
- **Contextual Understanding:** BERT's capability to capture context provides a more nuanced and in-depth understanding of the topics than traditional topic modeling techniques (Grootendorst 2022).
- **Validation and Consistency:** The hierarchical clustering in BERTopics not only provides an organized view of topics but also acts as a validation mechanism, as evidenced by its alignment with Study 1 findings.
- **Integration with ChatGPT:** Utilizing the output of BERTopics as input for ChatGPT ensures that the vignettes are closely aligned with the dominant themes from the dataset, making the vignettes more accurate and representative.
- **Efficiency:** This approach streamlines the process of vignette generation, saving time and ensuring systematic consistency.

Incorporating the insights from BERTopics into experimental designs, like in Study 2, offers a novel and powerful method to craft contextually rich and data-driven vignettes, enhancing the validity and depth of experimental findings.

Author Accepted Manuscript

Web Appendix K: Example of Vignette (Study 2)

The vignette consists of two parts. In Part 1 (see Figure K1), participants receive a tweet from either a CEO or a brand, depending on the condition. In Part 2 (see Figure K2), participants also receive a link to the full policy proposal if they want more information. In both cases, we used BERT and ChatGPT to develop the vignettes.

Figure K1: CEO Tweet as Part of the Fictional Public Policy Campaign



Rich Handler 
@HandlerRich



Concerned about Ukrainian's safety due to the escalating war in [#Ukraine](#)? Now more than ever, we need to unite in their [#support](#). I propose an ambitious [#policy](#) for the U.S. government to help Ukrainian civilians. Let's amplify our collective [#effort](#). Read more below: [#EveryoneWithUkraine](#) [#JefferiesForUkraine](#)

Policy Proposal to Help Ukrainian Civilians:

The escalating crisis in Ukraine demands immediate and decisive action. As the CEO of Jefferies, I urge the U.S. government to implement the following measures to provide essential help to Ukrainian civilians:

- 1. Immediate Humanitarian Assistance (2023-2024):** The U.S. should provide an immediate humanitarian aid package of \$10 billion to support international relief efforts in Ukraine, including organizations like the Red Cross. This aid will go towards emergency supplies, medical assistance, and safe transportation for displaced Ukrainians.
- 2. Expansion of Refugee Resettlement Program (2023-2025):** The U.S. should expand its refugee resettlement program to accommodate an additional 100,000 Ukrainian refugees over the next two years. The government should also increase funding for integration programs to help these new Americans successfully adapt to life in the U.S.
- 3. Long-term Support for Ukraine (2023-2033):** The U.S. should pledge a long-term commitment to the rebuilding and stabilization of Ukraine. A 10-year, \$50 billion aid package will support infrastructure rebuilding, strengthen democratic institutions, and foster economic recovery in Ukraine.

Rich Handler
Jefferies CEO

Author Accepted Manuscript

Figure K2: CEO Full Fictional Public Policy Proposal

Policy Proposal to Assist Ukrainian Civilians Amidst the War

Background:

The ongoing war in Ukraine, intensified by geopolitical tensions, underscores the dire need for comprehensive support strategies for Ukrainian civilians. Their plight requires not just empathy but tangible interventions that promise safety, stability, and future recovery.

As Nick Deluliis, CEO of CNX Resources Corporation, understanding the interconnected nature of our global community, I call upon the U.S. government to take robust steps to ensure the safety and well-being of Ukrainian civilians. Thus, I present a comprehensive policy proposal that addresses both the immediate hardships of Ukrainian civilians and the long-term necessity of support for Ukraine.

1. Immediate Humanitarian Assistance (2023-2024):

a. Comprehensive Aid Package

- **Objective:** To address the urgent humanitarian needs resulting from the war.
- **Proposal:** Allocate \$10 billion to support international relief efforts in Ukraine. These funds should be channeled through reputable organizations, such as the Red Cross, which have been instrumental in providing emergency aid in war zones¹.
- **Impact:** This aid will cater to immediate necessities like emergency supplies, medical assistance, and secure transport facilities for displaced Ukrainians.

2. Expansion of Refugee Resettlement Program (2023-2025):

a. Resettlement and Integration

Author Accepted Manuscript

- **Objective:** To offer a safe haven for those fleeing the war and to aid their seamless transition into American society.
- **Proposal:** Extend the refugee resettlement quota by 100,000 specifically for Ukrainian refugees over the forthcoming two years. Simultaneously, enhance funding for integration programs, focusing on language acquisition, job placement, and cultural assimilation, ensuring these new Americans find both refuge and a home.
- **Impact:** This strategy ensures that apart from the immediate escape from war, refugees have the tools and resources for long-term stability in the U.S., aligning with the *Migration Policy Institute's guidelines on integration*².

3. Long-term Support for Ukraine (2023-2033):

a. Rebuilding and Stabilization

- **Objective:** To ensure the post-war rehabilitation and robustness of Ukraine as a nation.
- **Proposal:** Commit to a 10-year, \$50 billion aid package, concentrating on rebuilding critical infrastructure, reinforcing democratic institutions, and stimulating economic recovery.
- **Impact:** Long-term investments in infrastructure and institutions provide a foundation for sustainable growth, resilience, and prosperity. The *World Bank's reconstruction strategies*³ emphasize these areas as key to post-war recovery.

In conclusion, the Ukrainian war is not just a regional concern, but a humanitarian challenge that calls for collective responsibility. The proposed interventions seek to ensure that our actions, as an interconnected global community, pave the way for recovery, resilience, and prosperity for Ukraine.

Respectfully,

Nick Deluliis
CEO, CNX Resources Corporation

Author Accepted Manuscript

References

1. International Committee of the Red Cross. (2023). *Humanitarian relief in war zones*. <https://www.icrc.org/en/where-we-work/europe-central-asia/ukraine%E2%81%A0> ↵
2. Migration Policy Institute. (2023). *Linking Migrant Reintegration Assistance and Development Goals*. <https://www.migrationpolicy.org/research/migrant-reintegration-development> ↵
3. The World Bank. (2023). *Updated Ukraine Recovery and Reconstruction Needs Assessment*. <https://www.worldbank.org/en/news/press-release/2023/03/23/updated-ukraine-recovery-and-reconstruction-needs-assessment> ↵

Peer Review Version

Author Accepted Manuscript

Web Appendix L: The Effects of CEO Communication on Digital Activism (Study 2)

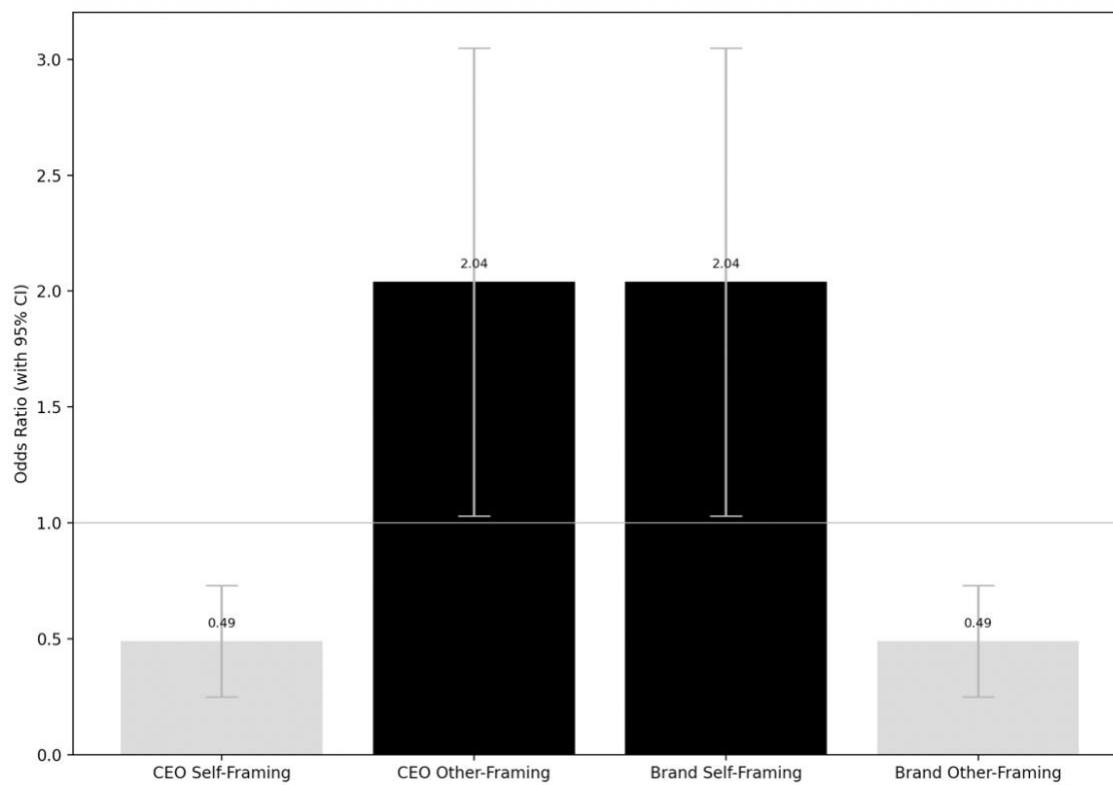
	Model 1		Model 2		Model 3		Model 4	
	Coefficient	OR	Coefficient	OR	Coefficient	OR	Coefficient	OR
Independent variables								
CEO communication	.437*	1.548	.045	1.046	.437*	1.548	.758**	2.135
	(.174)		(.259)		(.174)		(.236)	
Other-framing	-.941***	.390	-1.277***	.279				
	(.174)		(.243)					
Self-framing					.941***	2.563	1.277***	3.585
					(.174)		(.243)	
Interactions								
CEO X other-framing			.713*	2.041				
			(.349)					
CEO X self-framing							-.713*	.490
							(.349)	
Control variables								
Gender¹	.070	1.072	.063	1.065	.070	1.072	.063	1.065
	(.175)		(.175)		(.175)		(.175)	
Politics-republican²	-.690**	.502	-.704**	.494	-.690**	.502	-.704**	.494
	(.245)		(.246)		(.245)		(.246)	
Politics-independent²	-.470 *	.625	-.446*	.640	-.470*	.625	-.446*	.640
	(.201)		(.203)		(.201)		(.203)	
Politics- no political affiliation²	-.850	.427	-.825	.438	-.850	.427	-.825	.438
	(.435)		(.433)		(.435)		(.433)	
Diagnostics								
(Constant)	.942***	2.565	1.127***	3.086	.001	1.001	-.150	.861
	(.204)		(.227)		(.188)		(.203)	
X²	49.308***	(df=6)	53.486***	(df=7)	49.308***	(df=6)	53.486***	(df=7)
N	608	608	608	608	608	608	608	608

Notes. Dependent variable: Public activism. Significant coefficients * $p < .05$, ** $p < .01$, *** $p < .001$. Standard errors are in parentheses. ¹ Reference group: Female. ² Reference group: Democrats

Author Accepted Manuscript

Web Appendix M: The Effects of CEO Vs. Brand and Self vs. Other-Framing on Public

Activism



Author Accepted Manuscript

Web Appendix O: Word Cloud with Frequent Terms Written by the Participants in the Brand X Self-Framing Condition (Study 2)



Review Version

Author Accepted Manuscript

Web Appendix P: Samples of Activist's Messages Crafted by the Participants (Study 2)

	CEO	Brand
Other-framing	"I want to express my support for Ukraine in the ongoing war against Russia. I hope that your support for Ukraine will unwavering in the coming years as well. Yogesh Gupta, CEO of Progress Software Corporation, has come up with a proposal for supporting and funding Ukraine in their time of crisis. I urge you to read the proposal and voice your support."	
	"Dear (Local Representative), If we can we should. And that means everything when it comes to human rights. Supporting legislation that benefits Ukraine is not only showing you are on the side of human rights, but that you are a good person in general and care about helping those who are affected by things out of their control."	
	"Dear representatives, Ukrainian civilians need our support, so please read Mr. Jonas Prising's proposal (see attachment)."	
Self-framing		"Dear Local Representatives, I very much would like to support Shockwave Medical Inc. and the proposed policy for energy resilience and affordability, which aims to alleviate the challenges caused by the energy crisis and rising energy prices due to the ongoing Russia-Ukraine war. I would love to give my full support to these people and their plans to help America's energy sector. Sincerely, DD"
		"Dear local representatives. At the very basis of it, I'm on board with this plan as I want my money going toward better things. I'm tired of my money going toward this Russia Ukraine stuff which has no impact on our everyday affairs domestically."
		"The energy prices are raising. Please support and consider these policies for energy resilience and affordability. "

Author Accepted Manuscript

Web Appendix Q: Robustness' Check Linear Probability Model (LPM) of CEO

Communication

	Model 1	Model 2	Model 3	Model 4
Independent variables				
CEO communication	.098*	.009	.098*	.184***
	(.039)	(.055)	(.039)	(.054)
Other-framing	-.215***	-.299***		
	(.038)	(.053)		
Self-framing			.215***	.299***
			(.038)	(.053)
Interactions				
CEO X other-framing		.175*		
		(.077)		
CEO X self-framing				-.175*
				(.077)
Control variables				
Gender ¹	.016	.014	.016	.014
	(.039)	(.039)	(.039)	(.039)
Politics-republican ²	-.156**	-.158**	-.156**	-.158**
	(.055)	(.055)	(.055)	(.055)
Politics-independent ²	-.105*	-.098*	-.105*	-.098*
	(.045)	(.045)	(.045)	(.045)
Politics-no political affiliation ²	-.193	-.188	-.193	-.188
	(.099)	(.098)	(.099)	(.098)
(Constant)	.715***	.758***	.500***	.459***
	(0.45)	(.048)	(.043)	(.046)
N	608	608	608	608

Notes. Dependent variable: Public activism. Significant coefficients *p < .05, **p < .01, ***p < .001. Standard errors are in parentheses. ¹ Reference group: Female. ² Reference group: Democrats

Web Appendix R: Robustness' Check Subsample Logistic Regression of CEO

Communication (N=323)

	Model 1		Model 2		Model 3		Model 4	
	Coefficient	OR	Coefficient	OR	Coefficient	OR	Coefficient	OR
Independent variables								
CEO communication	-.451 (.250)	.637	.119 (.371)	1.126	.451 (.250)	1.571	.933 (.344)	2.542
Other-framing	-1.040*** (.251)	.354	-1.558*** (.362)	.211				
Self-framing					1.040*** (.251)	2.829	1.558*** (.362)	4.750
Interactions								
CEO X other-framing			1.052* (.506)	2.863				
CEO X self-framing							-1.052* (.506)	.349
Control variables								
Gender¹	.335 (.249)	1.398	.348 (.251)	1.416	.335 (.249)	1.398	.348 (.251)	1.416
Politics-republican²	-.744* (.364)	.475	-.831* (.370)	.435	-.744* (.364)	.475	-.831* (.370)	.435
Politics-independent²	-.635* (.286)	.530	-.593* (.289)	.553	-.635* (.286)	.530	-.593* (.289)	.553
Politics-no political affiliation²	-1.235* (.593)	.291	-1.205* (.591)	.300	-1.235* (.593)	.291	-1.205* (.591)	.300
Diagnostics								
(Constant)	1.592*** (.288)	4.912	1.301*** (.309)	3.672	.100 (.271)	1.106	-.139 (.296)	.870
X²	32.461***	(df=6)	36.823***	(df=7)	32.461***	(df=6)	36.823***	(df=7)
N	323	323	323	323	323	323	323	323

Notes. Dependent variable: Public activism. Significant coefficients *p < .05, **p < .01, ***p < .001. Standard errors are in parentheses. ¹ Reference group: Female. ² Reference group: Democrats

Author Accepted Manuscript

Web Appendix S: Robustness' Check Multicollinearity (VIF) of CEO Communication

	Model 1	Model 2	Model 3	Model 4
Independent variables				
CEO communication	1.017	2.050	1.017	2.001
Other-framing	1.004	1.944		
Self-framing			1.004	1.944
Interactions				
CEO communication X other-framing		2.907		
CEO communication X self-framing				3.003
Control variables				
Gender ¹	1.009	1.009	1.009	1.009
Politics-republican ²	1.112	1.112	1.112	1.112
Politics-independent ²	1.116	1.121	1.116	1.121
Politics-no political affiliation ²	1.043	1.044	1.043	1.044
N	608	608	608	608

Note. Dependent variable: Public activism. ¹ Reference group: Female. ² Reference group: Democrats

References

- Devlin, Jacob, Ming-Wei Chang, Kenton Lee, and Kristina Toutanova (2018). Bert: Pre-training of deep bidirectional transformers for language understanding. arXiv preprint arXiv:1810.04805.
- Dhaoui, Chedia and Cynthia M. Webster (2021). Brand and consumer engagement behaviors on Facebook brand pages: Let's have a (positive) conversation. *International Journal of Research in Marketing*, 38(1), 155-175.
- Grootendorst, Maarten (2022). BERTopic: Neural topic modeling with a class-based TF-IDF procedure. arXiv preprint arXiv:2203.05794.
- Jin, Chang-Hyun and Jung-Yong Lee (2019). The halo effect of CSR activity: Types of CSR activity and negative information effects. *Sustainability*, 11(7), 2067.
- Kim, Taeyeon and Yongjun Sung (2021). CEOs' self-disclosure on Instagram and consumer-brand relationships: the moderating effect of relationship norms. *International Journal of Advertising*, 40(6), 897-921.
- MacInnis, Deborah J. and Whan Park C. (1991). The differential role of characteristics of music on high-and low-involvement consumers' processing of ads. *Journal of Consumer Research*, 18(2), 161-173.
- Muehling, Darrel D. (1987). An investigation of factors underlying attitude-toward-advertising-in-general. *Journal of Advertising*, 16(1), 32-40.
- Xu, Weiai Wayne, Jean Marie Tshimula, Ève Dubé, Janice E. Graham, Devon Greyson, Noni MacDonald, and Samantha Meyer B. (2022). Unmasking the Twitter Discourses on Masks During the COVID-19 Pandemic: User Cluster-Based BERT Topic Modeling Approach. *Jmir Infodemiology*, 2(2), e41198.
- Zhou, Ce, Qian Li, Chen Li, Jun Yu, Yixin Liu, Guangjing Wang, Kai Zhang, Cheng Ji, Qiben Yan, Lifang He, Hao Peng, Jianxin Li, Jia Wu, Ziwei Liu, Pengtao Xie, Caiming Xiong, Jian Pei, Philip S. Yu, and Lichao Sun (2023). A comprehensive survey on pretrained foundation models: A history from bert to chatgpt. arXiv preprint arXiv:2302.09419.