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The relationship between humanitarian NGO communication and user engagement on Twitter

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Abstract

One of the few actors whose mission is to provide support and advocacy for refugee communities with limited access to information and services are humanitarian non-governmental organizations (NGOs). This study examines the narratives produced by the leading humanitarian NGOs on one of the most popular social media platforms today—namely, Twitter. The study investigates which narratives are most popular among global NGOs and whether the way they frame the refugee issue is related to Twitter engagement. The findings contribute to scholarship on online communication and user engagement, and also inform humanitarian NGO practices and policy discussions regarding media and migration.

Keywords

Message framing, migration, NGO communication, refugees, Twitter, user engagement

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Introduction

“If Europe fails on the question of refugees, then it won’t be the Europe we wished for.” This is former German Chancellor Angela Merkel’s famous statement made back in 2015 at the height of the so-called “European refugee crisis.” While a few years have passed since then, the challenges facing migrants and refugees around the world today remain. According to UNHCR (2021), there are 26.4 million refugees worldwide today. As a vulnerable group, they cannot return safely to their countries of origin and possess limited resources in terms of finding information and services as well as advocating for their rights. One of the few actors whose mission is to provide support and services to refugee communities are humanitarian non-governmental organizations (NGOs). This study explores how the leading humanitarian NGOs provide a voice and advocate on behalf of refugees worldwide. Utilizing data from one of the most popular online platforms, namely, Twitter, this research incorporates current literature about the role of social media communication as an integral part of public discourse on this topic (e.g. Blevins et al., 2019; Siapera et al., 2018) and a new global channel for NGO communication (e.g. Chouliaraki and Vestergaard, 2021; Saffer et al., 2019). Specifically, the study investigates how leading international NGOs use Twitter to communicate about the refugee issue and analyzes what types of frames contribute to higher online engagement. This is an important area of investigation since the goal of humanitarian NGOs is to offer assistance, relief, and prevention of suffering caused by crises, and their work, while independent of governments, relies on creating a favorable public opinion. In the case of refugees, the acceptance and possible integration of migrants in the community at large remain dependent upon dominant public discourse, especially on social media (Atouba and Shumate, 2020; Barisione et al., 2019; Siapera et al., 2018). Thus, the findings of this research have important implications not only for global NGOs but also for local governments and policymakers in the country of residence.

The study also makes a theoretical contribution to academic literature on media framing of migration and the role of issue framing in online user engagement, thus enhancing our knowledge base of how leading humanitarian NGO utilize issue frames on one of the leading social media platforms. By looking at the reactions to NGO communication on Twitter, this study goes beyond descriptive analyses of how the refugee issue has been framed on social media, however. It demonstrates not only what types of messages are most commonly used by the leading humanitarian NGOs, but also shows which message frames lead to more Twitter engagement. Thus, this research contributes to a better understanding of how different types of social media messages about refugees elicit reactions from the audience, which allows both academics and nonprofits to learn more about the effectiveness of online messages in promoting social change.

Theoretical background

The process of globalization has no doubt fostered new forms of transnationalism and brought to the fore the importance of the nonprofit sector in the global human rights movement (Brysk, 2004; Geddes, 2021; Powers, 2018). As Brysk (2004: 7) notes, “the oldest tradition of humanitarian advocacy speaks for victims who cannot speak for

themselves . . . This has been especially important for introducing new claimants who lack agency or recognition to the human rights agenda.” Increasingly, humanitarian work involves engaging in communication campaigns not only to demonstrate results, but also to engage global and local publics with refugee acceptance, integration, and legal rights (see Bradley, 2016: for an overview).

While there is consensus in the scholarly literature about the need to examine the role of communication in international development, research has pointed out the conflicting goals between “doing good” and “looking good” (Engel and Noske-Turner, 2018), reflecting the dual purpose of global NGOs (Budabin and Pruce, 2018). This dual mission sometimes leads to tensions and a general dilemma whether to communicate *for* or *about* development and often results in hybrid practices. Engel and Noske-Turner (2018) further point out that this distinction may represent a false dichotomy and emphasize the fact that communication is “a powerful tool that can be administered to lead to ever positive results in the quest for social change” (p. 4).

Dominant media narratives

Research has shown that public opinion as well as policy decisions are strongly affected by how a political issue is collectively understood by both policymakers and the public at large, regardless of whether the issue is war, elections, immigration, or European Union integration (see Baumgartner and Mahoney, 2008; Eberl et al., 2018; Iyengar and Kinder, 1987; Stone, 1989). The way the media portray or frame issues and events has considerable impact on policymaking and public opinion.

Conceptually, framing is defined as highlighting certain aspects of an issue at the expense of others, through the emphasis of specific words, phrases, metaphors, or visuals (see Entman, 1993, for the most widely cited definition). Although framing is sometimes referred to as a “fractured” paradigm, framing scholars ground their analyses in the notion that different ways of framing reality may lead to different audience perceptions or policy preferences (Baumgartner and Mahoney, 2008; D’Angelo, 2018; Iyengar and Kinder, 2010). Issue framing by different actors is achieved through salience and the inclusion of certain framing devices in the media text (Entman, 1993). Frames can be detected by what is manifested in the media content, which, by definition, implies that certain aspects of an issue may be missing or excluded (Scheufele, 1999).

NGO advocacy and communication

One of the few institutional actors that can produce their own narratives, in addition to traditional media, are NGOs. In the case of the humanitarian sector, such organizations are tasked with offering humanitarian services to different segments of the population, for example, women or youth, and increasingly engage in external communication (Bradley, 2016; Powers, 2014). The term NGO is often linked to the concept of civil society where multiple actors work together to effect social change (Barisone et al., 2019; Butler, 2017). In the humanitarian field, we can distinguish broadly between two types of NGOs: First, operational (service-based) NGOs that focus primarily on providing services in the field, relying on extensive external support and often bound by certain

restrictions within countries when it comes to their public communication. Second, advocacy NGOs that focus on promoting and advocating for different humanitarian causes. Most international NGOs today, however, encompass both types since they recognize the crucial link between messaging and field operations (Dubois, 2003).

As one of the few actors who can openly advocate on behalf of refugees, NGOs play a critical role in impacting the dominant narrative on migration. International NGOs in particular have the opportunity to shape not only global public opinion but also national policy and government action since they are generally less constrained by local political or economic pressures (Butler, 2017; Powers, 2014). Such NGOs are uniquely positioned to effect policy change by swaying public opinion and ensuring that national governments keep their obligations and follow international treaties (Powers, 2018).

The shifting scope of NGO work has been paralleled by an unprecedented transformation of the media environment. That transformation, as Kyriakidou (2021) notes, has important implications for humanitarian work:

As humanitarian crises increasingly become “polymedia events,” played out in different media platforms and through different and often diverging narratives, it is important to investigate how audiences navigate within these multiple platforms and framings to create meaning and understand the situation at hand.

Depending on the scope of NGO work and the effectiveness of their communication messages, certain campaigns may bring about social change while others may fall of “deaf ears.” Audience mobilization and engagement are at least partially dependent upon current events as well as type of communication campaigns.

Social media use by humanitarian NGOs

Social media can be a powerful agent for social change and lead to substantial shifts in public opinion (Barisone et al., 2019; Blevins et al., 2019). Indeed, social media channels provide a new tool for NGO advocacy (one of the main international Budabin and Pruce, 2018). As Thrall et al. (2014: 136) aptly observe, “Thanks to the Internet and the rapid emergence of new and social media platforms, NGOs have more tools at their disposal than ever to sound the alarm and generate international awareness.” Prior research has looked at how NGOs use social media to promote their goals and enact social change (e.g. Guo and Saxton, 2013). Examining education NGOs in Malaysia, for example, Raja-Yusof et al. (2016) identified several social media affordances: promoting, training, fundraising, knowledge sharing, and problem solving online. The authors note, however, that these may not be directly applicable to all types of NGOs. Focusing specifically on human rights NGOs, Thrall et al. (2014) concluded that while social media channels offer a wider toolkit for global information campaigns, most global NGOs lack the organizational resources to significantly influence traditional media coverage or public opinion. The challenges related to individual attention spans and scarcity of news media time remain acute, despite the potential of social media campaigning. Additional insights regarding how NGOs use social media networks can be found in the work of Guo and Saxton (2013) who suggest that organizations use

Twitter as a tool for public education, also noting that this social media channel has the potential to be used even more for grassroots lobbying and disseminating information about “foreign” issues to local publics.

Published research confirms that social media channels enable NGOs to engage in at least three different functions when it comes to global information campaigns: raise awareness about issues and disseminate information to the broader public; frame and reframe the issue at hand; and engage in lobbying and encourage action by the public, the government, or both (Guo and Saxton, 2013; Thrall et al., 2014). Unlike traditional media, social media are unique in the sense that they allow users to engage in unfiltered discourse.

Social media channels also enable direct contact with the individual user and can create online pressure as well as excitement around certain issues (Blevins et al., 2019). A good example here is the notorious Kony 2012 campaign, which went viral, even without much contextualization about the crisis, and successfully engaged global audiences. This campaign serves as an example of the effectiveness of social media and suggests that social networks may be better suited than traditional media for mobilizing support, encouraging donations, and potentially shifting public opinion (Barisione et al., 2019). Indeed, such social media characteristics are especially relevant to the refugee issue, which remains “distant” for most people who have not had direct contact with a refugee and rely on online networks, in addition to traditional media channels, to form their opinions (Powers, 2018).

But how likely is it for humanitarian NGOs to rely on social media for advancing their causes? Looking at the refugee discourse on Twitter, Siapera and colleagues (2018) found that NGOs were among the most prominent actors in the Twittersphere. When discussing the refugee issue on Twitter in general, they found that NGOs were referenced frequently under relevant hashtags. While that study presents a good snapshot of the Twitter debate surrounding the refugee issue, it did not focus specifically on NGO communication. Rather, it examined how the issue of refugees was portrayed in the general Twitter discourse. In contrast, the present study focuses specifically on the tweets produced by the leading humanitarian NGOs that work with refugees to gauge how NGOs frame the issue and see whether certain types of tweets lead to higher public engagement.

Migration portrayals in the media

When applied to the migration domain, there is a rich body of research that has already documented how refugees and migrants are presented in media narratives (see Chouliaraki, 2006; Chouliaraki and Vestergaard, 2021). This research typically analyzes media texts such as newspaper articles, television broadcasts, magazine feature stories, or photographs (Vestergaard, 2021). Extant research has established that potentially controversial issues such as migration and the refugee issue are prone to be framed in widely divergent ways within different national contexts (Berry et al., 2016; Dimitrova et al., 2018; Eberl et al., 2018).

In her classic book, Chouliaraki (2006) interrogated the notion of distant suffering displayed in TV images for Western audiences. She identified three modes of reporting—“adventure,” “emergency” and “ecstatic” new—and argued that audiences tend to engage

and support humanitarian causes when they feel emotionally involved. Other authors have coined the term “spectatorship” when it comes to mediated suffering. Even if informed by different theoretical propositions and fields of study, they all agree that there is over-saturation of images of humanitarian disasters. Chouliaraki (2006) concludes that media portrayals of suffering function as a prerequisite for action on the part of the viewer.

A more recent review of European media discourse on immigration showed that news coverage is often negative, and migrants tend to be represented in stereotypical ways such as criminals or delinquents (Eberl et al., 2018). A cross-cultural analysis of media coverage of refugees in Turkey and Bulgaria identified five major frames: the threat frame, victim frame, administrative frame, humanitarian frame, and diversity frame (Dimitrova et al., 2018). The analysis concluded that media coverage is consistent with the dominant socio-political environment in each country. Another study comparing the coverage of the refugee crisis across five European nations, namely, Spain, Italy, Germany, the United Kingdom, and Sweden, found major differences in national coverage, not only in terms of sources used, but also in the language they employed, and the causes and solutions they suggested (Berry et al., 2016). In addition, humanitarian themes were more commonly used in Italian coverage while threat frames were more prevalent in Italy, Spain, and Britain. This study was commissioned by United Nations High Commissioner for Refugees (UNHCR) since humanitarian organizations want to find out how the issue has been framed on traditional media channels to be able to produce their own message framing on social media.

NGO advocacy, issue framing, and social media engagement

While migration NGOs constitute only a small part of the global NGO community, they are critical players in the field and one of the few institutional actors that can dedicate resources to social media campaigns on behalf of their beneficiaries. Although there is a rich body of research documenting how traditional media portray the issue of migration, studies investigating how NGO frame the issue remain rare. Conceptually grounding our study in the media framing paradigm and utilizing published research on humanitarian communication and refugee portrayals in traditional media, we pose our first research question:

Research Question 1. What are the dominant frames used by leading humanitarian NGOs in their Twitter communication?

While many studies have documented how global nonprofits use social media, there is no consensus on what type of message characteristics lead to higher engagement. A recent report commissioned by the European Programme on Integration and Migration (EPIM) documents that the most resonant narratives are based on solidarity and reciprocity (Field, 2019: 38–42). These two categories also emphasize shared humanity and shared prosperity narratives that are conceptually connected to the humanitarian and diversity frames used by traditional media. Emotional journeys or “conversion” narratives that focus on personal stories of children or families, while commonly used, are criticized for taking away the agency of the individual (Brysk, 2004; Vestergaard, 2021). These organizations

agree that audience-centered work on narratives is critically important and underscore the need for narrative development and message testing (Field, 2019).

While there is no consensus in the literature on what types of online messages are more engaging for the public, certain types of frames are seen as less desirable from a normative standpoint and have been criticized as taking away the agency, such as the victim frame, for example. Issue salience may also influence public opinion shifts online, indicating that the time period during which a message is issued may be an important factor to consider (Barisone et al., 2019). Therefore, scholars should take into account not only the dominant frame of NGO communication messages but also on the particular point in time they are sent out and overall issue salience. Thus, we pose our second research question:

Research Question 2. What message frames elicit higher online user engagement, in terms of tweet favorites and retweets?

Methodology

Data and sample

Twitter is a platform widely used in the nonprofit sector since it has the potential to mobilize the public and bring about social change (Barisone et al., 2019; Blevins et al., 2019) and is also easily accessible to users around the world. According to Statista (2019), Twitter has more than 330 million active users per month worldwide. Hence, this study focuses on the use of Twitter by the global NGOs. The goal of the study was to examine NGO communication by the most influential nonprofit organizations in the migration space. According to Thrall et al. (2014), the top 10–20% of NGOs have the vast majority of Twitter followers and tend to shape the online debate about refugees specifically, as Siapera et al. (2018) show.

Several sources were consulted to select the leading humanitarian organizations that work in the area of migration, based on several rankings. These include the *Top 100 World NGOs* ranking from the NGO Advisor database (2020) and the *Top 27 Refugee NGOs* provided by Raptim.org (n.d.). Cross-referencing these sources, we took a purposive sample approach to select the following NGOs for analysis: CARE, DRC, HIAS, Karam Foundation, Mercy Corps, ORAM, Refugees International, Refugee One, UNHCR, and World Relief.¹ The Twitter handles for these top 10 NGOs were retrieved and saved. We also documented the number of followers for each account as well as the number of accounts they were following, the location of the NGOs headquarters and their ambit (see Table 1). As shown by previous studies, the range of popularity across accounts is related to organizational size and scope as well as resources available (Powers, 2018). A cut-off point of a minimum of 2000 Twitter followers was established for the NGOs selected here.

A Python script was developed to capture all tweets from the 10 organizations via the open Twitter Application Programming Interface (API). We relied on five Twitter REST API (<https://developer.twitter.com/en/docs>) accounts to speed up the scraping rate and used Tweepy (<https://www.tweepy.org/>) as the wrapper. The script collected all original tweets as well as retweets as of Dec. 20, 2019, following the limitation of 3200 tweets

Table 1. NGO selection.

NGO name	Twitter handle	Followers	Following	Headquarters	Primary scope
Refugees International	RefugeesIntl	305,300	2571	Washington, DC, USA	International
UNHCR	Refugees	2.6M	1956	Geneva, Switzerland	International
ORAM	ORAMrefugee	2180	1810	Minneapolis, MN, USA	International
Danish Refugee Council	DRC_ngo	15,800	591	Copenhagen, Denmark	International
World Relief	WorldRelief	20,300	6464	Baltimore, MD, USA	International
Refugee One	Refugee_One	2010	204	Chicago, IL, USA	US / International
HIAS	HIASrefugees	29,600	2189	New York, NY, USA	US / International
Karam Foundation	karamfoundation	94,300	855	Lake Forest, IL, USA	Turkey, Jordan, US
Mercy Corps	mercycorps	224,800	1516	Portland, OR, USA	International
CARE	CARE	1.2M	1902	Atlanta, GA, USA	International

that can be collected backwards for each Twitter handle. Using this procedure, a total of 27,137 tweets were collected and stored into a local MySQL database. The data were checked to ensure there are no duplicate tweets for each Twitter handle based on *tweet_id* as a unique identifier. Only original tweets sent out by the NGO were considered for analysis (total of 19,528 tweets).

Variables of interest

Conceptually, we define the dominant frame of a tweet as the overarching theme present in the message (Entman, 1993). While the frames used in prior research on the media coverage of refugees vary somewhat, there is considerable overlap. Building on the work of Dimitrova et al. (2018), we capture the following dominant frames: *administrative*, *diversity*, *humanitarian*, and *victim* frames². Broadly, the *administrative frame* refers to discussion of local/ national bureaucracy, legal paperwork, settlement, reception, and distribution numbers as well as general statistics about migration flow, such as the number of registered refugees (see Table 2). The *diversity frame* encompasses tweets that highlight the contributions made by refugees and migrants, including cultural contributions to diversity or enrichment to society, as the second exemplary tweet for this frame in Table 2 shows, as well as economic contributions. The *humanitarian frame* focuses on humanitarian ideals relevant to refugees and asylum seekers, emphasizing solidarity, tolerance, and mutual understanding and the need to help migrants as human beings, for instance in the context of medical aid, as can be seen in the exemplary tweets in Table 2. Finally, the *victim frame* refers to the social suffering of refugees, including poor living conditions, lack of basic amenities within camps, medical problems, or challenges while on the move, including actions of smugglers, accidents, or suffering (see last row in Table 2).

The four message frames constitute our independent variables. Since we aimed to annotate the frames in a large dataset, we utilized automated content analysis, which allows for a resource efficient identification of frames within large datasets. A dictionary approach was applied since it offers an intuitive and reliable method (Grimmer and Stewart, 2013). This approach assumes that frames can be detected through emphasis on certain aspects of an issue that manifest in the meaning of words and can thus be measured by the occurrence of words or word patterns (see Van der Meer, 2016). A dictionary approach is based on the selection of common keywords and phrases within the data that are used to annotate each frame. Since existing dictionaries did not capture the frames we were interested in, or did not apply directly to social media platforms like Twitter, we developed our own dictionaries from scratch.

The construction of each dictionary required extensive effort and included multiple steps. The first step involved the keyword selection process, led by media scholars experienced in the area of migration research who collected words and phrases indicating the respective frame. The second step included the manual annotation of a subset of the Twitter data to create a human coded “gold standard” to refine the dictionaries and eventually compare with the automated approach to achieve valid and reliable results. To this end, two independent coders were provided with a codebook containing detailed definitions and examples of tweets for each frame and trained to complete the coding of 1103 tweets. To ensure variability across organizations, an equal amount of tweets

Table 2. Exemplary tweets.

Frame	Tweet
Administrative	Trump administration to turn away far more #asylumseekers at the border under new guidance, which also applies to refugee applicants—#immigrants seeking similar protections in the US who are still abroad. #Refugees #Asylum #BorderCrisis 940,131 #Syrian #refugees registered according to [MENTION] without counting the 4 mill. internally displaced people!
Diversity	After leaving #Mosul, Khalil now teaches #music to local young people and #refugees at a Mercy Corps youth center. “The kids are building strong #friendships with each other. If they have any problems they can solve it together.” Last year, author and artist [MENTION] volunteered her time at Karam House in Reyhanli, Turkey to paint these amazing murals of inspiring artists, writers, and leader on the walls, including #NelsonMandela.
Humanitarian	What’s PFA? Psychological First Aid critical work in any humanitarian response. CARE is supporting women with PFA in #Syria now. Thanks to [MENTION], we’ve been working w/ clinics in #Gaza to improve systems & make sure those in need get the right treatment, right away. A healthy future is a hopeful one. Share to show your support for #US #humanitarian aid making a difference!
Victim	Almost half a million children have been deprived of #education in the #Sahel region due to schools being forced to shut down—a number that has doubled since 2017. #Africa The nightmare began in June, when armed groups started to stage brutal killings, to rape, to abduct. Six months later, many among the 300,000 people displaced in Democratic Republic of Congo wake up every day fearing it could be their last.

Note. URLs and mentions are excluded.

was randomly selected from each NGO. Intercoder reliability testing yielded acceptable levels of agreement for each frame (average percentage agreement was 83%). As a third step, we split up the manually coded data into a subset to refine the dictionaries and a subset to validate the dictionaries. While the first subset was used to adapt and refine the dictionaries in an iterative process, the validation subset remained untouched to test the performance of the eventual dictionaries and make sure the tools were not overfitted to the first subset. Comparing the annotations yielded from the dictionaries with the validation set, we obtain satisfactory performance considering the *Precision*, *Recall*, and *F1*³ measures, with an *F1* score above 0.7 for all four dictionaries. More precisely, for the administrative frame we reached *Precision*=0.75, *Recall*=0.79, and *F1*=0.77, for the diversity frame 0.7/0.71/0.7, for the humanitarian frame 0.69/0.7/0.7, and for the victim frame 0.79/0.71/0.75. Finally, the dictionaries were applied to the whole dataset, annotating the four frames whenever at least one keyword was detected.

Since one of our research goals was to examine how the different frames affect user engagement, we defined reactions from Twitter users (i.e. engagement) as the dependent variable. This variable consists of two dimensions: one is to “favorite” a tweet, expressing

a positive reaction symbolized by a heart beneath the content; the other is to “retweet” a message, meaning to share the content through one’s own Twitter account. Purposefully excluding replies, we acknowledge that we do not consider the entirety of possible reactions to a tweet. While some studies also include the number of replies in their analyses (e.g. Bonsón et al., 2019), we restrict the dependent variable to “favorites” and “retweets” since they can be seen as distinctly different reaction types, compared with replies, when it comes to user commitment (e.g. Salgado and Bobba, 2019; Ziegele et al., 2018). Favoriting and retweeting can be performed only once, which makes them less prone to distortion by heavy users (see Heidenreich and Eberl, 2021). In turn, replies may spark a discussion and many subsequent replies from the same users, not necessarily increasing the reach (i.e. virality) on the platform, but overestimating the reactions from a few single users.

The count for both reactions was gathered during the data collection process through the Twitter API. To test the hypotheses and still provide a more fine-grained understanding of user engagement with NGO communication, we decided to include three different measures in our analysis. First, a combined measure of favorites and retweets reflecting the overall user engagement that might increase a Tweets reach on the platform. Second, since there may be different dynamics when it comes to individual user reactions to Tweets from NGOs, we include the number of favorites as well as the number of retweets.

Analytical strategy

Since our dependent variable (i.e. the number of favorites and retweets) is a count variable exhibiting overly dispersed Poisson distribution with the variance much larger than the mean (see Figure 1), we rely on an analytical strategy involving negative binomial regression models. The models were estimated using Bayesian methods with flat priors to essentially produce parameter estimates with their mode identical to maximum likelihood estimation (MLE) point estimates (Gelman et al., 2014). Taking advantage of the Stan probabilistic programming language within the environment of the R package brms (Bürkner, 2017), hierarchical negative binomial models with varying intercepts were calculated. Furthermore, we applied clustering on the level of the individual Twitter accounts (i.e. NGO organizations) to consider organizational differences in regard to the number of followers. As favorites and retweets might not be independent of each other, models for those counts were calculated simultaneously, allowing their level intercepts to be intercorrelated.

In addition, several control variables were included to account for other factors affecting user engagement of the individual tweet. First, we introduced a variable considering the different phases of global refugee movements, as research shows that external events might affect public discourse (e.g. Heidenreich et al., 2019). Here, we take the annual difference in worldwide refugees based on UNHCR data (2008–2019) and use that as a proxy variable for increase in global refugee flows. On the tweet level, controls include content type (i.e. whether a tweet contains only text, a picture, or a video), the number of hashtags, and mentions used, as well as the length of a tweet, incorporated as the log of the word count since prior studies indicate the relevance of these aspects for user engagement (e.g. Ince et al., 2017; Pancer and Poole, 2016). The models converged with Gelman-Rubin convergence diagnostic never exceeding 1 (Gelman and Rubin, 1992)

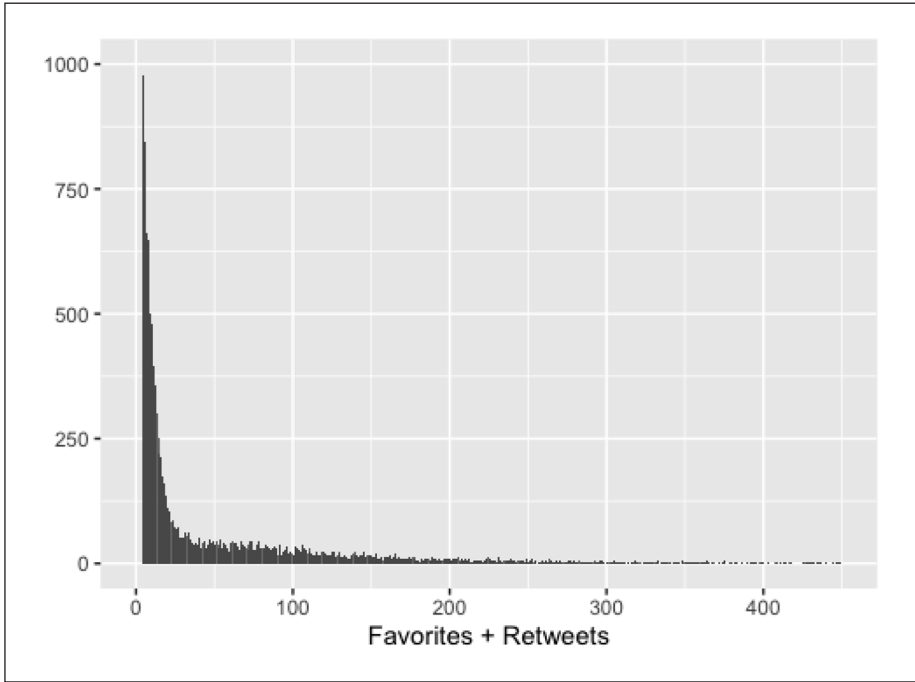


Figure 1. Distribution of total engagement variable.

Note. To better illustrate the distribution, both axes are limited. The dataset contains more than 1000 tweets with both zero favorites and zero retweets as well as tweets with more than 450 favorites and retweets.

with trace plots indicating a good mixture of the four Markov Chains (see Markov Chain Monte Carlo [MCMC] trace plots in Figure 3 in Online Appendix).

Results

The first research question focused on the dominant frames used by leading humanitarian NGOs in their Twitter communication. Considering the distribution of frames across all tweets, we see that NGOs clearly emphasize humanitarian aspects of the issue, as almost 23% of the tweets contain this frame (see Table 3). The messages often discuss humanitarian assistance provided to refugee groups and also efforts by the NGOs regarding their own humanitarian projects. Drawing attention to the conditions migrants face in their home countries or during their journey, the victim frame emerges as the second most prominent frame, present in about 16% of all tweets. Less prominent in the NGO Twitter communication are the administrative frame and the diversity frame, which appear in 12% and 10% of the tweets, respectively. The higher focus on humanitarian and victim frames seems consistent with the primary mission of humanitarian type organizations, as we discuss in the next section.

The second research question investigated whether certain types of message frames lead to higher online engagement, both in terms of tweet likes and retweets. To

Table 3. Frame frequencies in Twitter communication of top 10 humanitarian NGOs.

Frame	Frequency (percent)
Administrative frame	2301 (11.78)
Diversity frame	2028 (10.39)
Humanitarian frame	4411 (22.59)
Victim frame	3075 (15.75)

Note. $N = 19,528$. Part of the sample did not contain any of the four frames measured.

examine the user engagement elicited by one of the four frames, we calculated a series of negative binomial regression models. The fixed-effects coefficients for tweet favorites and retweets as separate dependent variables are plotted in Figure 2 and visually display the dynamics of user engagement within the migration NGOs communication on Twitter. All coefficients presented in Table 4 are expressed as the expected log count difference and, therefore, exponentiated coefficients are treated as multiplicative. Looking at tweet favorites, for example, means that the administrative frame with a coefficient of $\beta = .04$ can be interpreted as a multiplication of the favorite count by $e^{.04} = 1.04$ (i.e. an increase of 4.08%) when the frame is present. This constitutes the only positive coefficient in Model 1, indicating that all other frames, except for the administrative frame, are associated with a decrease in the number of favorites, with the largest negative association observed for the victim frame and the number of favorites ($\beta = -.12$).

The second model looked at the influence of message frames on retweets. The results here show that both the administrative and victim frame elicit more retweets. The victim frame sticks out compared with the model on favorites as it leads to 5.13% more retweets when present ($\beta = .05$). The administrative frame, however, exhibits the strongest effect when it comes to retweets, being associated with 18.53% more retweets when the frame is present ($\beta = .17$). Interestingly, decreased user engagement is observed when it comes to retweets for messages containing the diversity ($\beta = -.29$) and the humanitarian ($\beta = -.03$) frame.

The final model (Model 3 in Table 4) combined favorites and retweets into one dependent variable to capture overall user engagement. The only frame that has a significant effect on total engagement is the administrative frame. The positive regression parameter ($\beta = .10$) shows that its presence increases engagement by 10.52%.

Considering other variables that affect overall user engagement, we observe that several content-level factors have an important influence (see Model 3). While the type of content generally matters, incorporating videos elicits the most user engagement ($\beta = .93$; 153.45% increase). The use of hashtags and mentions does not seem to be much of a factor whereas tweet length has a significant effect on user reactions, showing that longer tweets elicit more engagement. Finally, the results show that changes in migration numbers, captured by the annual difference in refugee numbers as proxy variable, are of importance. Our results show that user reactions increase in years of heightened refugee movement ($\beta = .2$; 22.14% increase) when the migration issue is likely more salient on the global agenda.

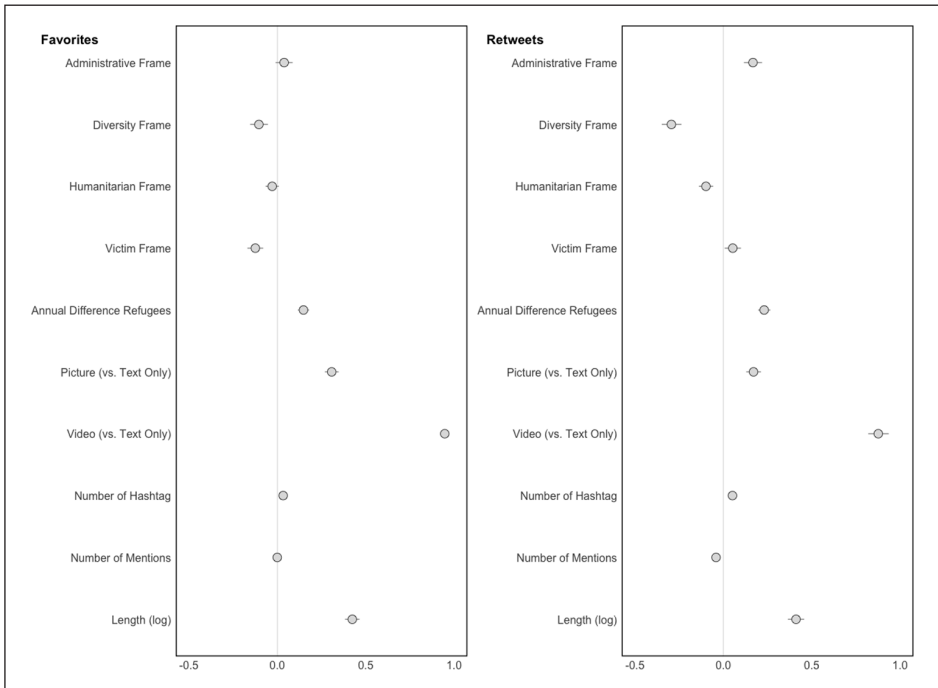


Figure 2. Estimated posterior fixed-effects parameters.

Note. Estimated posterior fixed-effects parameters for the models considering the number of favorites (left) and retweets (right). Thin lines represent 95% confidence intervals (CIs).

Discussion

As global migration flows continue to rise, the challenges that refugees, and migrants face remain more than relevant. One of the global actors who can openly communicate about and influence public opinion toward this vulnerable population are humanitarian NGOs (Vestergaard, 2021). This study was designed to investigate, first, how global nonprofits frame the refugee issue on Twitter, and, second, gauge what type of Twitter messages are associated with higher levels of public engagement. Using a large dataset from the top 10 global NGOs in the migration space, several noteworthy findings emerged in this analysis.

First, looking at the totality of the NGO communication, one can conclude that the online narrative of the leading NGO actors is relatively diverse when it comes to the four frames of interest: administrative, humanitarian, diversity, and victim frames. The most prominent frame used was the humanitarian frame, which appeared in almost a quarter of the tweets. This is consistent with the dominant mission of the NGOs under examination and indicates that their online communication has a higher focus on humanitarian aspects.

The second most prevalent frame was the victim frame, which inevitably portrays refugees in dire conditions, struggling with different aspects of their journey—from housing and food to gender-based violence. This finding is consistent with the evolution

Table 4. Estimated fixed-effects parameters on Twitter engagement.

	Model 1: Favorites	Model 2: Retweets	Model 3: Total engagement
Intercept	-.03 [-1.05, .99]	-.46 [-1.31, .36]	.38 [-.64, 1.39]
Administrative frame	.04 [-.01, .09]	.17 [.12, .22]	.10 [.05, .15]
Diversity frame	-.10 [-.15, -.59]	-.29 [-.35, -.24]	-.16 [-.21, -.11]
Humanitarian frame	-.03 [-.07, .01]	-.10 [-.14, -.06]	-.06 [-.09, -.02]
Victim frame	-.12 [-.17, -.08]	.05 [.01, .10]	-.05 [-.1, -.01]
Annual refugee increase	.15 [.12, .18]	.23 [.2, .27]	.20 [.17, .23]
Picture (vs text only)	.31 [.27, .35]	.23 [.2, .27]	.27 [.23, .31]
Video (vs text only)	.95 [.89, 1]	.88 [.82, .94]	.93 [.87, .98]
Hashtag count	.03 [.02, .05]	.05 [.04, .07]	.04 [.03, .05]
Mentions count	.00 [-.02, .02]	-.04 [-.06, -.02]	-.01 [-.03, .01]
Tweet length (log)	.42 [.38, .46]	.41 [.36, .46]	.44 [.4, .48]
Varying intercept			
Account level (SD)	1.55 [.98, 2.61]	1.29 [.81, 2.19]	1.53 [.95, 2.62]
NB shape parameter (ϕ)	1 [.98, 1.02]	.9 [.88, .93]	.99 [.97, 1.01]

Note. $N = 9569$. All parameters are estimated based on 8000 MCMC posterior draws. Modes of parameter distributions and 95% CIs (square brackets) are reposted. Flat priors are used throughout; therefore, parameter estimates are equivalent to MLE parameters.

of humanitarian advocacy as a field (Bradley, 2016; Brysk, 2004; Vestergaard, 2021). The NGO messages examined here were less likely to discuss administrative aspects and least likely to incorporate the diversity frame in their online communication. This might be related to the fact that there are fewer examples of integration and cultural contributions of refugees compared with the vast number of challenges they face *en route* or as outsiders in their new countries of residence (Özdora-Akşak and Dimitrova, 2021).

When it comes to audience engagement, there was no consensus in extant literature regarding what type of online messages trigger more user reactions. Our statistical analysis identified several interesting trends. Perhaps not surprisingly, we found that people are less likely to “favorite” victim-framed messages while at the same time seem more likely to retweet those types of messages. This fits with the findings of the EPIM report and other research on refugees that emotional stories of personal journey and transformation are created to trigger compassion or indignation, and to encourage individuals to use their own social media channels as a megaphone for social justice (Barisone et al., 2019; Field, 2019). It also supports Kyriakidou’s argument that in order for “distant suffering” to become meaningful, individuals need to compare it with their own personal experiences and, in a way, “domesticate” the narrative relative to their community. As she (2021, p. 95) notes, “the visualisation and personalisation of suffering are central in nourishing the viewers’ moral imagination and establishing emotional connections between spectators and sufferers.”

In addition to the victim frame, it was the administrative frame rather than the more positive frames of diversity and humanitarianism that increased Twitter engagement. One possible reason why is that administrative tweets tend to contain specific data as

well as information regarding legal developments and petitions, which makes them more appealing from a mobilization standpoint if one is trying to raise awareness about latest statistics, or rally against migrant quotas or other restrictions. This was consistent with a closer look at the tweets classified under the administrative frame. A number of these tweets contained a specific call to action—for instance, to sign an online petition or to share the information about an upcoming event. From a psychological standpoint, these tweets might elicit higher user engagement since this is where change is perceived as possible. Of course, such calls to action are limited to the typical Twitter user and cannot be seen as a full representation of global public opinion but rather as a reflection of educated, wealthy, and liberal-leaning publics, both locally and globally.

It is also feasible that, for certain individuals, liking or retweeting a positive message clearly supportive of refugees may be seen as too political in the current polarized environment while sharing a tweet that is more “factual” and less “valenced” may be perceived as less controversial and thus more acceptable. For individuals whose family members or friends oppose immigration or side with populist parties, for instance, sharing neutral information may be seen as a safe choice. Yet another possibility is that people may be ambivalent about speaking out about controversial issues in an open public forum, considering the increasing number of trolling and cyber harassment cases (Lumsden and Morgan, 2017).

Looking beyond message framing, several control variables used in the analysis exert significant influence on online engagement. In particular, the increase in refugee numbers worldwide is positively related to user reactions on Twitter. This finding suggests that when the refugee issue is high on the public agenda, we are more likely to see increased social media engagement, as Barisione et al. (2019) found.

Furthermore, structural characteristics of the message seem to impact popularity. For example, longer tweets and including any type of multimedia element, such as photos or videos, significantly increase engagement. From a conceptual standpoint, this is consistent with the Integrated Model of Activism (Chon and Park, 2020), which postulates that social media efficacy is a key factor in online user engagement. According to this model, individuals are more motivated to engage in communication behaviors in the social media environment when they possess higher social media efficacy.

The importance of structural characteristics of messages on Twitter is also supported by media richness theory (Daft and Lengel, 1986), which postulates that certain media channels are richer than others. Studies utilizing this theory have specifically looked at Twitter affordances and their role in contributing to media richness (e.g. Tanupabrungsun and Hemsley, 2018). In the same way that body language and tone of voice combined generate richer face-to-face communication, the simultaneous use of multimedia content, hashtags, and text potentially increases the informativeness and appeal of online messages. While multimedia tweets may be perceived as more engaging, there are a number of factors that might make a tweet “rich” in the current domain of NGO communication. Thus, it is also important for both scholars and practitioners to keep in mind that different types of Twitter campaigns may serve different purposes and perhaps have different outcomes.

Additional consideration might include the role of social media influencers who could promote NGO tweets or be tagged in the online message. While our study shows the different types of message frames lead to different levels of audience engagement, it also demonstrates the need to incorporate additional message characteristics such as

hashtags, multimedia use, and structure in general, and in future studies of this social media channel.

The present analysis of almost 20,000 tweets from the top 10 NGO accounts provides a comprehensive picture of NGO communication about migration as a global issue. Consistent with the mission of humanitarian NGOs, we find that they tend to frame the migration issue from a humanitarian perspective first and foremost. However, despite normative recommendations from the NGO field, a large number of tweets focus on victim frames while under-stating the contributions of refugees and migrants to cultural diversity. The analysis also highlights the fact that, relative to the other message frames, administrative discussions of legal status and paperwork, resettlement, reception numbers, and general statistics about migration elicit high levels of social media engagement.

Implications and future research

The analysis is based on creating frame dictionaries to identify the dominant frames in each tweet. While dictionary approaches have been successfully used in prior studies, it is important to recognize the conceptual distinction between keywords and phrases and overarching frames (e.g. Lawlor and Tolley, 2017; Lind et al., 2019). Furthermore, while our results show that multimedia increases engagement, the study did not investigate whether the visual frames are congruent with the textual frames in the tweet. This might be a fruitful avenue for future research.

The study was based on a purposive sample approach so its external validity may be limited. In other words, our findings apply to the leading humanitarian organizations in the area of migration but may not be generalizable to other types of NGOs. Furthermore, scholars need to be careful not to equate the social media presence of an NGO with the official organizational stance or the views of its beneficiaries and to be aware that different types of NGOs may choose to employ different communication strategies, keeping in mind their dual function of “doing good” versus “looking good.”

Even within the specific subgroup of organizations we analyzed, there is considerable variety in terms of capacity and scope. The different size budgets and staff as well as their diverse organizational history and culture would naturally affect the types of communication campaigns that each organization engages in, as shown in previous work (Bradley, 2016; Budabin and Pruce, 2018; Geddes, 2021).

In addition, we need to acknowledge that Twitter users are not representative of the general world population. According to 2022 data, the typical Twitter user is mostly male, younger, wealthy, and well educated (Omnicores Agency, 2022). By extension, the NGO tweets analyzed here have a specific target audience and cohort of receivers. While we cannot directly assess the impact of NGO communication on global or national audiences, we can extrapolate that the effects would be mostly applicable to those more elite user demographics.

It is also important to underscore that this study cannot capture causal relationships. Our results demonstrate significant associations between certain tweet characteristics and user engagement but cannot explain what exact factors lead to higher engagement. Therefore, future research should combine studies of content with research about the


supply side as well as studies of the audience to better gauge user motivations. To that end, asking NGO communicators about the reasons behind the narrative strategies they employ or surveying Twitter users about their reasons for liking or sharing certain messages will provide a more comprehensive picture of the communication processes surrounding contentious issues in the social media domain.


This study has several important practical implications. Since audiences seem more likely to engage online when the refugee issue is high on the public agenda, NGOs will benefit from launching their campaigns during times of increased migration flows. Another practical contribution for NGO communicators is to incorporate more text, photos, and videos in their Twitter campaigns since those clearly elicit higher levels of user engagement. Better online communication campaigns can give humanitarian organizations wider visibility of their work and show their donors and other target publics the specific outcomes of their projects as well as counteract any potential misperceptions about the effectiveness of their work on behalf of refugees and migrants.

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Notes

1. UNHCR is not an NGO per say, but an intergovernmental organization. As a leading actor in refugee communication, however, it is critical to incorporate their Twitter discourse in the analysis.
2. For better understanding of each frame, exemplary tweets containing one of the four frames are provided in Table 2.
3. Precision indicates the number of relevant documents among the retrieved documents whereas recall denotes the relevant documents retrieved. The harmonized *F1* reflects the overall performance and is calculated as follows: $F1 = (2 \times \text{recall} \times \text{precision}) / \text{recall} + \text{precision}$.

Supplemental material

Supplemental material for this article is available online.

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