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# Migration misinformation in Spanish-language Tweets during a pandemic

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## Introduction

In the early twenty-first century, international migration has become a highly politicized issue that, together with rapid developments in digital technology, including increased self-publishing opportunities online, have facilitated the spread of misinformation. With social media platforms being today's prime medium for sharing instant and unmonitored information, social media data can offer important insights about misinformation related to migrants and migration. Kreis (2017) describes how race-based notions of nationalism are embedded in Twitter narratives about immigrants and refugees, including that they are criminals, job stealers, invaders and out-group members. Bakamo Public (2019) describes national origin variation in the content of social media conversations in Europe. In Hungary and Poland, the emphasis is on security whereas, in France and Spain, it is on humanitarianism. In Turkey, refugee discourse expressed in the hashtag, #IDontWantSyriansInMyCountry, constructs refugees as a dangerous out-group and aids in facilitating a collective Turkish in-group identity (Erdogan-Ozturk and Isik-Guler, 2020).

Migration misinformation often spreads from political leaders into Twitter conversations and it can have serious consequences. Hernandez (2018) documents a rise in online conversations and specific hashtags, such as migrants being "bad hombres," during the 2016 United States presidential election. Bozdağ (2019) notes how xenophobic and anti-refugee tweets in Turkey grew after President Erdoğan announced that he would grant citizenship to Syrian refugees. Donato et al. (2021) reveal structural shifts in Twitter conversation about COVID-19 border restrictions before and after Venezuelan President Maduro announced the implementation of other contradictory policies. Urquhart's (2021) analysis of Facebook posts in Bangladesh and Malaysia suggests misinformation about Rohingya refugees helped fuel hostility against them.

In this paper, we build on prior studies of migration misinformation by analysing Twitter conversations in Spanish, the fourth most widespread language in the world (Statista, 2021a).<sup>1</sup> We assess the prevalence of different types of misinformation about migrants and migration in Spanish-language tweets and examine whether and how migration misinformation varies by location and shifts in the spread of this misinformation. To understand the context for the analysis, we briefly review Venezuelan displacement and the mobility restrictions implemented beginning in late March 2020 after the onset of the COVID-19 pandemic. We follow with a discussion of the data and methods used, and then report our findings and discuss their implications.

## The Venezuelan diaspora and mobility restrictions in the COVID-19 pandemic

Since President Chavez's death in 2013, the Bolivarian Republic of Venezuela has experienced economic collapse, hyperinflation and a political crisis (Duddy, 2015; Viscidi, 2016). International debt and hyperinflation, combined with the collapse of the oil and gas industry that supported the economy for decades, increased poverty and inequality and led to the emergence of a currency black market (Monaldi, 2018). Secondary impacts emerged, such as extreme food, gas and medicine shortages; a failed medical system; very high unemployment; and decaying infrastructure plagued by regularly occurring power outages. Amid the turmoil, a 2017 constitutional crisis led to a contested 2018 presidential election, when the incumbent President Maduro and challenger Juan Guaidó both declared victory (International Crisis Group, 2020). Although Guaidó was recognized as Venezuela's official president by many countries, including the United States of America, President Maduro continues as the country's leader.

<sup>1</sup> In this paper, we focus on the volume of conversation about misinformation topics and do not distinguish between conversations that support or refute the misinformation. The goal is to understand how pervasive these themes are and whether conversation volume changes over time.

One consequence of the political and economic crisis is the exodus of five million Venezuelans (UNHCR, 2020). Wealthier Venezuelans left first, resettling in neighbouring countries like Colombia, Brazil, Peru, Chile and Ecuador (Castilla and Sørensen, 2019). Almost two million Venezuelans settled in Colombia alone, with those who could not afford air transportation crossing the border by foot.<sup>2</sup> Almost 500,000 Venezuelans settled near the Colombian border because they could not afford to resettle in urban settings (International Crisis Group, 2020). Informal settlements and financial strains on public resources in border towns grew, creating labour tensions and xenophobia (ibid.). Many Venezuelans had no running water and/or were unable to obtain adequate medical attention (Project Hope, 2021).

Amid the crisis of four years of limited resources and a growing number of displaced, the COVID-19 pandemic hit, leading to border closures and shutdowns throughout the Americas. In mid-March 2020, the Bolivarian Republic of Venezuela's land borders with Colombia and Brazil closed to manage the spread of the virus (International Crisis Group, 2020). Yet despite border closures, many Venezuelans living abroad re-entered the Bolivarian Republic of Venezuela after the COVID-19 pandemic began (Méndez-Triviño, 2020). As a result, Venezuelan officials imposed additional border restrictions in June 2020. During the second half of 2020 and into the beginning of 2021, the Bolivarian Republic of Venezuela allowed 200 people per day to re-enter across the Simón Bolívar Bridge, the largest border crossing point between Colombia and the Bolivarian Republic of Venezuela, and another 100 per day to enter at the crossing between Arauca and Apure (International Crisis Group, 2020). Colombia maintained a closed border to Venezuelans throughout the pandemic, though the Government estimated that about 200 people crossed into Colombia from the Bolivarian Republic of Venezuela daily through irregular crossings (*El Tiempo*, 2020).

With poor economic conditions including rising unemployment in Brazil, Colombia and other places, some Venezuelans who fled earlier returned to the Bolivarian Republic of Venezuela during the pandemic to reoccupy their houses or stay with family members. Colombian officials estimated that more than 100,000 left Colombia for the Bolivarian Republic of Venezuela in the first months of the pandemic (Méndez-Triviño, 2020). However, as the Colombian economy reopened in fall 2020, the migration flow reversed and once again Venezuelans left their homes. One official of the Venezuelan state Táchira, located on the Colombian border, estimated that 3,000 Venezuelans crossed the border into Colombia in November 2020 alone (International Crisis Group, 2020). By March 2021, Migración Colombia estimated there were 1.7 million Venezuelan migrants living in Colombia, the highest number in the previous 6 months (*El Tiempo*, 2021a). On 2 June 2021, Colombia officially reopened its border with the Bolivarian Republic of Venezuela (*Reuters*, 2021).

Venezuelan migrants and refugees have been the subject of xenophobia and anti-immigrant misinformation across the region. In receiving countries like Colombia, Peru and Ecuador, there has been a surge of xenophobia targeted toward Venezuelans, who are often referred to by offensive terms such as *venecos* (*El Tiempo*, 2021b). The Venezuelan Government, in turn, has expressed anti-immigrant sentiment both against foreign nationals entering the country as well as against Venezuelan return migrants. President Maduro has promoted an ongoing military campaign to secure the border and stop the entry of *trocheros*, migrants irregularly crossing from Colombia (Mazo4f, 2020). In mid-July, President Maduro and the Venezuelan military launched a campaign against migrants crossing through unauthorized channels, denouncing them as bioterrorists carrying biological weapons that can infect Venezuelans (Pardo, 2020; *Associated Press*, 2020). Human rights organizations reported that return migrants were being held in unsanitary quarantine detention facilities for more than a month, exceeding the World Health

<sup>2</sup> Some crossed at one of the seven authorized border sites, but others crossed in unauthorized locations.

Organization's 14-day quarantine protocol (HRW, 2020; Kurmanaev et al., 2020). At the same time, President Maduro gave contradictory speeches that encouraged Venezuelan migrants to return, promising to treat returnees equally with "love" and "dignity" (VTV Canal 8, 2020).

Overall, since March 2020, fewer people have been on the move. International flight travel was down 92 per cent in April and May of 2020 compared to the previous year, and the European Union border patrol recorded an all-time low number of border crossings (Benton et al., 2021). A major migration policy response to COVID-19 was border closure (Newland, 2020; Benton et al., 2021; IOM, 2021). Benton et al. (2021) counted 43,300 travel restrictions imposed by national governments, and every country in the world was subject to at least 70 travel bans.

While most countries in the world imposed major travel restrictions for non-citizens, national government responses to the pandemic varied. In the United States of America, the Centers for Disease Control and Prevention and the Department of Homeland Security restricted non-essential travel at the southern and northern borders, as well as entry from countries overseas (ibid.). Further, asylum seekers and refugees were barred from entry. In contrast, the Mexican Government did not impose restrictions from other countries in March 2020. In July 2020, it began health screening airport arrivals; in October 2020, it changed the requirement to a health declaration. Countries across South America closed the borders to non-citizens, and even some citizens received contradictory information about returning to their home countries (ibid.). European countries like Italy and Spain saw particularly high numbers of confirmed cases at the beginning of the pandemic and imposed major travel restrictions to slow the spread of disease, both within the European Union as well as from arrivals outside the European Union.

Countries began phased border reopening in summer and fall 2020, implementing various health screening measures and COVID-19 testing requirements. Some countries reopened to tourism with an attempt to restart their economies; air travel restrictions were largely lifted before land and maritime border restrictions (ibid.). By summer 2021, some regions like the European Union eased border restrictions for entry with proof of vaccination and South American countries eased land border restrictions across the region (Stevis-Gridneff, 2021). At the same time, other countries like Australia and New Zealand maintained more stringent policies as viral variants continued to spread and vaccination rates remained inconsistent.

## Data and Methods

In this paper, we ask three questions. First, are migration misinformation themes salient in Spanish conversations on Twitter, and if so, what are their sources? Second, how does this misinformation vary spatially? Third, how does the spread of migration information shift over time? To answer these, we analyse tweets from 1 August 2020 to 31 March 2021. The tweets are collected using the Twitter Decahose Application Programming Interface, a 10 per cent random sample of all daily tweets.<sup>3</sup> We focus our analysis on the subset that have been labelled by Twitter as Spanish-language. In total, we analyse approximately 745 million tweets.

Using this sample of Spanish-language tweets, we create two universes of conversation streams. The first is about migrants and consists of tweets that contain migration-related words such as migrants, immigrants, refugees, and asylum seekers. The second is about Venezuelans and consists of tweets that contain mentions of Venezuelans and *venecos*, a derogatory term for Venezuelans often used on Twitter.<sup>4</sup> For both universes, we also consider subsets that mention specific locations in South America. We examine these trends in the six Spanish-speaking countries with

<sup>3</sup> We use "tweet" to refer to tweets, retweets, and quotes shared on the Twitter platform.

<sup>4</sup> We constructed the universes independent of each other, which means there is some overlap in the two universes.

the largest Venezuelan migrant populations in the region – Colombia, Chile, Peru, Argentina, and Ecuador – and the Bolivarian Republic of Venezuela (UNHCR, 2021a).<sup>5</sup>

We begin by examining how specific forms of misinformation about migrants and refugees gain traction on social media. We identify the most common, salient and dangerous Spanish-language stereotypes about migrants discussed online and in media coverage of migration. Beginning with a list of frequently occurring Spanish words and two-word phrases, we hand-curated a dictionary of words and phrases to capture discussion of specific misinformation topics.<sup>6</sup> These terms included phrases like “take our jobs,” “lower my salary,” “threaten our safety,” “gang member” and “bring disease.” We categorized each of these words and phrases into six misinformation topics (see below). Appendix A summarizes the terms used for each topic.

We pre-process both the dictionary and the tweets by removing stopwords and punctuation, standardizing capitalization and stemming words. Using these pre-processed dictionaries to identify tweets that contained any of the misinformation topics in our dictionaries, we generated a frequency variable representing the daily volume of each of the six misinformation topics: terrorism and crime; invasion/attack; jobs; other resources; disease; and bioterrorism. Although the topics are conceptually and theoretically related, we constructed them exclusive to each other for clarity of analysis. Terrorism and crime include topics such as migrants are terrorists, rapists, murderers and delinquents. Invasion and attack include migrant invasions, migrant caravans, “illegal” entry and migrants attacking the country. Jobs includes conversation about migrants taking jobs, unemployment and losing one’s job. Resources consists of tweets about migrants draining resources, migrants being parasites, lowering wages and taking social benefits. Disease consists of tweets that mention migrants bringing diseases into the country, and bioterrorism includes mentions of migrants as bioterrorists and biological weapons. After categorizing the six topics, we then classified them into three high-level themes: safety threats (criminals/invasion), health threats (diseases/bioterrorism) and economic threats (drain resources/jobs).

To understand whether and how misinformation prevalence varies by location, we compare misinformation conversation volume in countries with the largest Venezuelan populations by using tweets that mention a city location in one of the countries of interest and then examining frequencies of themes in those subsets of tweets. To complement this analysis, we also study the types of information-sharing taking place in our Twitter streams. We do this by conducting a frequency analysis of the URLs shared, which offers insights about the types of information being shared and the source type from which the information is derived, e.g. news sources, social media and video platforms. The goal is to understand the sources of information being shared and assess if the sources are of high or low quality. For this reason, we focus on URLs that do not include twitter.com<sup>7</sup> or URL shortening sites like tinyurl.<sup>8</sup>

We classify URL types into seven categories: local news, national news, international news, state-sponsored media, social media, video platforms and other. Local news focuses on coverage in a specific city or town; national news is headquartered in one country and covers one national context; international news has more global coverage and reach. State-sponsored includes links to television, radio and newspaper content produced by governments. Social media includes links to sources like Instagram, while video platforms include sites like YouTube.

<sup>5</sup> Because we analyse Spanish-language tweets, we do not separately consider Brazil in the analysis below. Although it hosts more displaced Venezuelans than Argentina, displaced Venezuelans do not usually seek long-term settlement in Brazil (UNHCR, 2021b).

<sup>6</sup> Hand-curation privileges precision more than coverage, using phrases that have high accuracy to identify topics. This reduced coverage because conversation using relevant phrases not in our dictionary and words used in multiple contexts are not included. In future work, we will use natural language processing techniques to improve coverage without significant impact on accuracy.

<sup>7</sup> Internal links shared on Twitter often link to photos and images; this is beyond the scope of analysis for this present study.

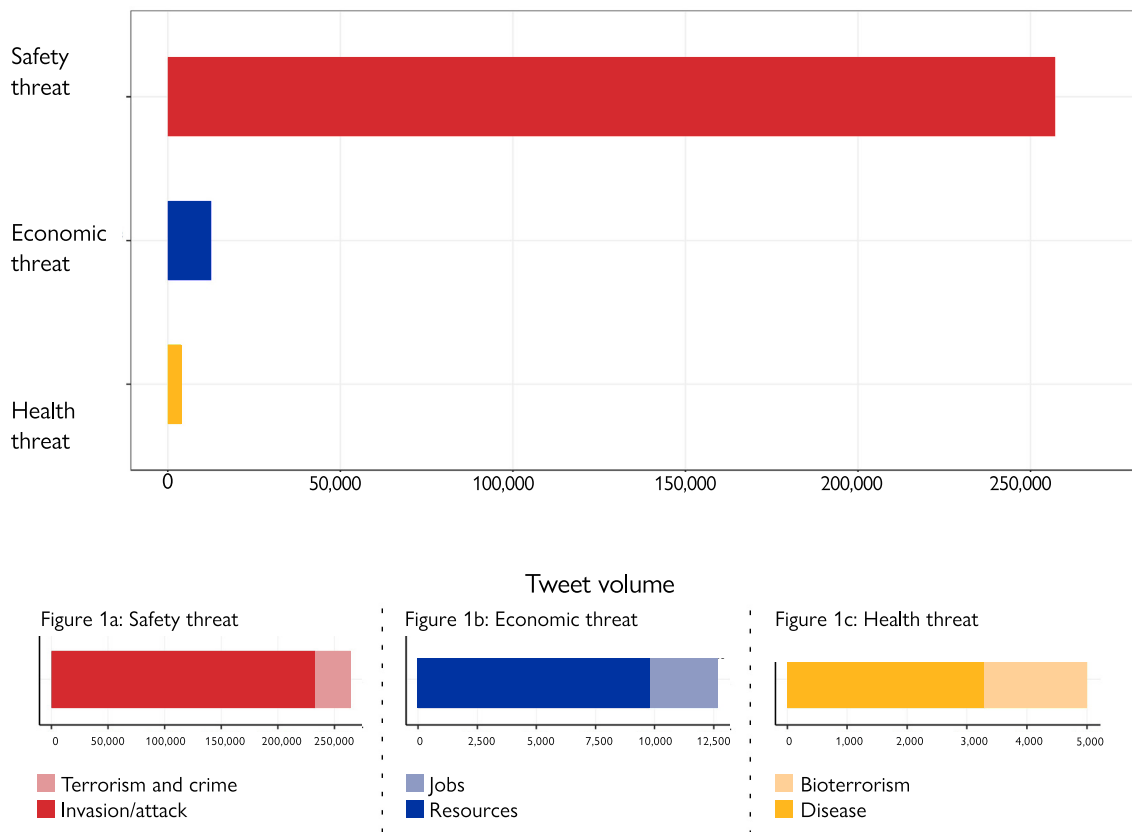
<sup>8</sup> We expand URLs linked from bit.ly and include them in the overall count of external links. In a subanalysis of link expansion from bit.ly, we find shortened URLs largely link to the same types of sites (news, social media and video content) as the external links and, therefore, do not include them in the subanalysis below.

# Findings

## What migration misinformation is most salient?

Misinformation related to migrants as safety threats was, by far, the most prevalent topic on Twitter between 1 August 2020 and 31 March 2021. Figure 1 shows approximately 220,000 misinformation tweets were about migrants, describing them as invaders and attackers. An additional 20,000 tweets contained misinformation claiming migrants are terrorists or other types of criminals. By contrast, migrant misinformation related to economic or health threats appeared far less often. We see approximately 12,500 mentions of misinformation that described migrants as threats to resources, and to a lesser extent, to jobs. Another 5,000 mentions of misinformation described migrants as health threats who carry disease or are bioterrorists.

Figure 1. Migration misinformation themes by type



Source: Authors' own elaboration based on Twitter data collected for the "migrant universe", August 2020–March 2021.

In addition to types of migration misinformation, we also assess the types of sources shared in Twitter conversations about migrants by analysing the URL links shared in tweets. Of the 273,526 misinformation tweets in the migrant universe, 26,951 (10%) include a URL link to an external website. Tables 1 and 2 describe the top 10 domains in these tweets, and the distribution of types of sources for the URLs, such as local, national or international news, State-sponsored news and social media.



Table 1. Top 10 domains for tweets

Domain	Share of external URLs (N=26,951)	Source type
okdiario.com	16%	National news
mazo4f.com	6%	State-sponsored media
youtu.be	5%	Video platform
eldiario.es	5%	National news
ver.abc.es	4%	International news
publico.es	3%	National news
elpais.com	3%	National news
elmundo.es	3%	National news
meganoticias.cl	2%	National news
abc.es	2%	International news

Source: Data collected by authors for the “migrant universe”, August 2020–March 2021.

Table 2. Distribution of source types in top 100 domains

Source type	Share of external URLs (N=18,673)	Number of domains
National news	50%	37
Local news	20%	27
International news	11%	8
State-sponsored media	10%	8
Video platform	6%	3
Social media	2%	4
Other	1%	1

Source: Data collected by authors for the “migrant universe”, August 2020–March 2021.

Table 1 presents the top 10 domains of the shared URLs, ranked from high to low in terms of the share of total URLs in migrant misinformation tweets. The links reflect a diverse range of sites that are not concentrated in a single source. Six of the top ten URL domains are national news sources, ranging across the political spectrum from conservative to centrist to progressive. The Venezuelan State-sponsored media source, mazo4f.com, is also widely shared. At least one link from two of the largest sites, okdiario.com and mazo4f.com, were shared nearly every day, fuelling online conversation related to migration misinformation.<sup>9</sup> *OkDiario* is a widely-read right-wing Spanish newspaper with poor ratings for communications accuracy (Universidad de Valencia, 2017), and *Mazo4f* is a Venezuelan State-run media site.

Table 2 describes the distribution of source types in the top 100 most frequently shared web domains and includes the share of tweets linked to the domains of each URL and the count of unique domains by source type. We see that external links to news sources are prevalent, especially national and local sources. State-sponsored media, especially Venezuelan-run sources, comprise 10 per cent of the tweets containing a URL. Video platforms such as YouTube and other types of social media content, such as from Instagram, are important domains for content sharing. When looking at the count of the domains of the shared URLs by type, Table 2 shows that national and local news source types draw from the widest number of different sources. This indicates that a single news outlet does not dominate the conversation and national and

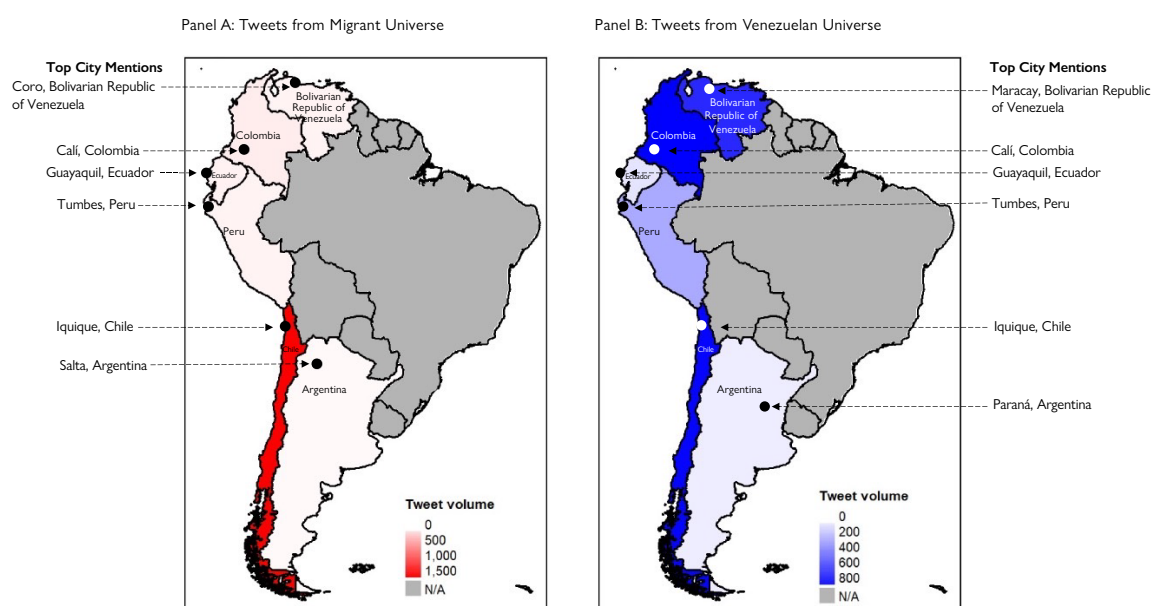
<sup>9</sup> In future work, we will analyse the content of these URLs.

local news shared on Twitter draw from multiple perspectives, although it might also suggest that lesser known or less reliable sources are being shared widely. In contrast, tweets sharing articles from international news (such as *CNN* and *BBC World Service*) and state-sponsored media (such as *Mazo4f*) are more concentrated among a few sources.

### How does migration misinformation vary by location?

Figure 2 presents the spatial distributions of tweets that mention migration misinformation and locations in the six South American countries that house large numbers of displaced Venezuelans and in the Bolivarian Republic of Venezuela.<sup>10</sup> Panel A maps Twitter mentions using tweets from the migrant universe and Panel B maps Twitter mentions from the Venezuelan universe. Relying on tweets from the migrant universe, we see that Iquique, Chile – a tourist destination just south of the Peruvian border – has the highest tweet volume, followed by Coro in the Bolivarian Republic of Venezuela, Cali in Colombia, Guayaquil in Ecuador, Tumbes in Peru, and Salta in Argentina. Using the Venezuelan universe of tweets, the spatial distribution differs somewhat. Tweet volume was highest in three cities/countries: Iquique in Chile, Maracay in the Bolivarian Republic of Venezuela, and Cali in Colombia, while somewhat lower in Tumbes, Peru, followed by Guayaquil, Ecuador, and Paraná, Argentina. Panel B also shows that that misinformation about migration is most prevalent in Twitter conversations that mention Colombia, the Bolivarian Republic of Venezuela and Chile. Many of the top cities shown in Panel B and mentioned in the Venezuelan universe are the same as in Panel A with two exceptions: Maracay and Paraná have the highest volumes in their respective countries (the Bolivarian Republic of Venezuela and Argentina).

Figure 2. Distribution of migration misinformation themes in South America



Source: Authors' own elaboration based on data collected for the "migrant universe" and "Venezuelan universe", August 2020–March 2021.

Note: This map is for illustration purposes only. The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the International Organization for Migration.

<sup>10</sup> Because we are analysing Spanish language tweets, we do not include Brazil.

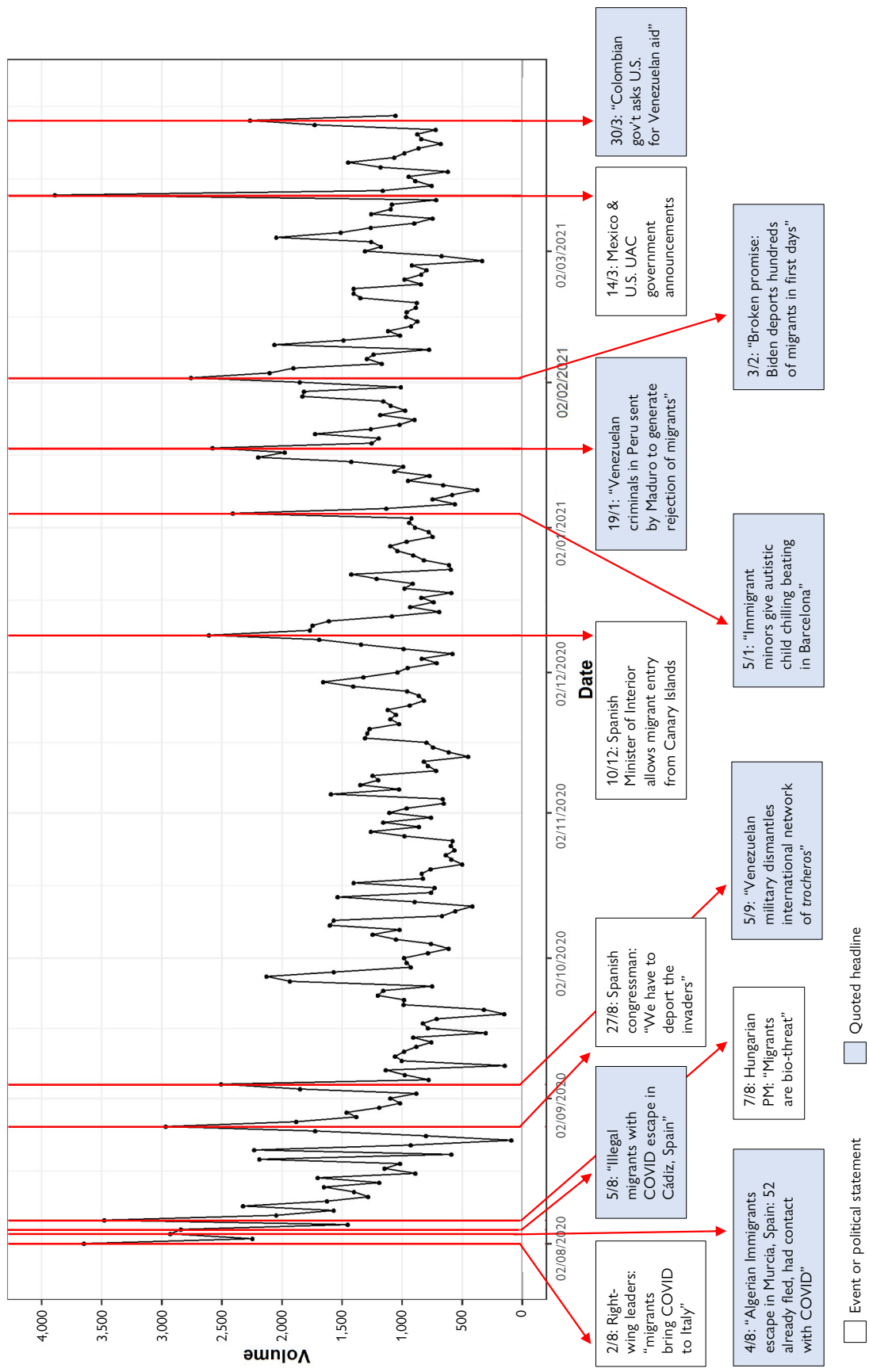
Although high tweet volume in Colombia is to be expected given that it houses the largest population of Venezuelans in South America, the volume of migration misinformation in Twitter conversations in Iquique in Chile is surprising. In addition, mentions in Twitter conversation about migration misinformation occur in large cities such as Guayaquil in Ecuador and Cali in Colombia, and in smaller cities such as Tumbes in Peru and Salta and Paraná in Argentina. In fact, most mentions of migration misinformation occur in smaller South American cities and not in those housing the largest numbers of Venezuelans. Together these findings suggest that migration misinformation in Spanish has a distinct spatial distribution.

### *How does migration misinformation spread?*

Figure 3 describes the spread of migration misinformation between 1 August 2020 and 31 March 2021. To consider how the spread is associated to specific events and news stories, we identify the most shared link for the 12 days during this period with the highest daily tweet volume.<sup>11</sup> We categorize these links into events or statements made by politicians/leaders, or specific headlines appearing in news outlets, which spark misinformation conversation. Note that the content of Spanish tweets can refer to all world regions – not only to Central and South America.

<sup>11</sup> See appendix B. Somewhat smaller spikes occur on 10, 20 and 22 August. Yet, although the volume of URL sharing on these days was lower than on other days, the news story on two of the three days was largely the same: migrants entering illegally with COVID-19. In contrast, on 10 August the top news story focused on a corruption scandal in Valencia, Spain.

Figure 3. Daily tweet volume of migration misinformation



Source: Authors' own elaboration based on data collected for the "migrant universe", August 2020–March 2021.

The first finding is about the spread itself. Although there are some fluctuations, migration misinformation is relatively persistent in Twitter conversation. On an average day, the overall volume is around 1,110 tweets related to migration misinformation, and this volume rarely drops below 500 daily tweets. In addition, we see that anti-immigrant statements made by politicians and governments are widely shared. For example, on 2 August 2020, when COVID-19 began a second spike and threatened a second lockdown in Italy, Italian right-wing leaders emphasized a new wave of thousands of migrant arrivals and warned that “migrants bring COVID to Italy.” A similar story on 7 August described a statement by the Hungarian Prime Minister who said he wanted to prohibit the entry of all immigrants because they are “biothreat.” On 27 August, a member of Spain’s Congress argued that migrants were invaders who had to be deported.

In addition to statements made by politicians, news stories also spread false and/or misleading information about migrant influxes, “illegal” crossings, criminal activity and health threats. On 4 August and 5 August, two separate headlines described how Algerian and Moroccan immigrants escaped into Murcia and Cádiz, Spain and speculated that many had COVID-19 contact. On 5 September, another headline described how the Venezuelan military dismantled an international network of smugglers and bioterrorists. In early 2021, headlines also featured migration misinformation reporting that migrant children beat a child with autism in Barcelona, and another described how President Maduro sent Venezuelan “criminals” to Peru to generate xenophobic sentiment against displaced Venezuelans. In early February, the key headline was that President Biden broke his promise and deported hundreds of people in his first days in office.

Specific announcements made by the Mexican and United States Governments regarding the treatment of unaccompanied migrant children appears associated with spikes in the conversation in March 2021. On 14 March, immediately before the public release of monthly numbers of apprehensions at the United States’ southern border, both countries released separate statements that reaffirmed their commitments to uphold the best interests of unaccompanied children and allocated additional resources to support these commitments.<sup>12</sup>

Interestingly, not all events that involved migration misinformation resonated on Twitter. For example, conversation about migration misinformation in Spanish-language tweets did not increase in early November 2020, when United States President Trump emphasized anti-immigrant rhetoric and false migration facts during his campaign for re-election. In addition, humanitarian announcements such as that by Colombian President Duque on 9 February to grant temporary status to approximately one million displaced Venezuelans in Colombia did not fuel migration misinformation immediately afterward.

## Discussion

In this paper, we examine the prevalence and location of misinformation about migration, and how it shifts over time. We identify three key findings.

First, between 1 August 2020 and 31 March 2021, migration misinformation is overwhelmingly about safety threats, suggesting a broad reach of misinformation on this theme, although to a lesser extent migration misinformation also captures economic and health threats. Together the three threats are likely to reinforce negative perceptions of migration and displacement.

<sup>12</sup> For more information on the announcements, see “Información sobre menores migrantes no acompañados” and “Biden Administration Directs FEMA to Help Shelter Migrant Children.”

Second, migration misinformation is global. Spanish tweets are spatially distributed across key countries that are home to the Venezuelan diaspora in South America, and they are also linked to migration misinformation sources in Europe, the United States and Mexico. Furthermore, given that sharing URLs of news sources is quite common, misinformation is regularly appearing in traditional news outlets. The global distribution and spread suggests a relationship between what is said about migration and migrants in one context and how they are perceived in another context. Thus, the persistence of xenophobia and remarkably similar narratives in different national contexts are likely reinforcing each other.

Third, with respect to the time series of migration misinformation, we observe spikes on the same days when news headlines and official announcements about migration occur. These trends illustrate when migration misinformation is resonating more and when it is resonating less. In addition to the ebbs and flows in the time series, migration misinformation appears to be fairly consistent. Thus, despite a small hum of misinformation sustained over time, some events and news stories also gain short-lived traction. Because prior studies show short-lived re-appearing misinformation may cumulate to construct a broad overarching misinformation narrative (Cheng et al., 2014; Kwon et al., 2013; Shin et al., 2018), our observed findings may represent an early stage of development before a larger wave of migration misinformation takes hold.

As with other studies that utilize social media data, our findings must be interpreted within the existing Internet landscape in South America, a world region in which smartphone ownership and Internet usage continues to grow, especially among younger users (Poushter, 2016). Yet, this is also a region in which the numbers of Twitter users vary. As of January 2021, Colombia had approximately 3.35 million active Twitter users, compared to 5 million in Argentina, 2.25 million in Chile, 1.55 million in Peru, 1.35 million in the Bolivarian Republic of Venezuela and 1.15 million in Ecuador (Statista, 2021b). Twitter usage is also in part related to Internet freedom in countries across the continent (Freedom House, 2020). For example, Argentina and Chile rank “free” on indicators of Internet freedom, compared to Colombia, Peru and Ecuador which rank “partly free,” and the Bolivarian Republic of Venezuela which ranks “not free.” The Venezuelan Government has, at times, blocked communications platforms like Facebook, Instagram and Twitter, which may explain why we find fewer links to social media than other news sources in that country (see Tables 1 and 2). Thus, suppression in social media platforms in the Bolivarian Republic of Venezuela translates into a greater reliance on State-sponsored news, and less overall usage than in other countries.

Our analysis focuses on capturing broad dynamics in misinformation conversation on Twitter. Future research must also analyse stance in different misinformation topics, e.g. the extent to which a tweet supports or challenges the misinformation shared. It could also analyse the sentiment and emotions expressed in tweets about migration misinformation given that emotions are central motivators of behaviours and perceptions. Finally, future work broadening the period of observation can offer insight into how migration misinformation dynamics shift across different pandemic-specific contexts.

## Appendix A. Summary of themes and phrases

Economic threat	Example phrases
Jobs	"Took my job"; "steal my job"; "cause unemployment"; "native labour shortage"
Resources	"Resource shortage"; "social benefits shortage"; "steal benefits"; "use my tax dollars"; "lower my salary"
Physical threat	Example phrases
Terrorism and crime	"Terrorists"; "criminals"; "delinquents"; "narcotraffickers"; "murderers"; "feel less safe"; "they traffic drugs"
Invasion/attack	"Influx of migrants"; "migrant caravan"; "illegal migrants"; "go back to your country"; #fueramigrantes <sup>1</sup> ; "they're overrunning our country"
Health threat	Example phrases
Disease	"Arrive infected"; "bring sickness;" "they come to contaminate us"; "threaten our health"
Bioterrorism	"Bioterrorists"; "bioweapons"; #denunciealbioterrorista <sup>2</sup>

Note: All input terms were in Spanish; this table reports translated equivalents. Specific hashtags are translated below.

<sup>1</sup> Migrants out.

<sup>2</sup> Hashtag promoted by Venezuelan military to promote "migrants are bioterrorists" campaign; translates to "denounce bioterrorists".

## Appendix B. Most shared URLs on top 12 days with largest Tweet volume in migrant universe

### ABC España

2020 Nueva fuga de inmigrantes en Cartagena: ya son 52 los huidos. [New immigrant escape in Cartagena: 52 have now fled.] *ABC España*, 4 August. Available at [www.abc.es/espana/abci-nueva-fuga-inmigrantes-cartagena-52-huidos-202008041038\\_noticia.html#vca=rrss&vmc=abc-es&vso=tw&vli=cm-general&\\_tcode=bW03c24x](http://www.abc.es/espana/abci-nueva-fuga-inmigrantes-cartagena-52-huidos-202008041038_noticia.html#vca=rrss&vmc=abc-es&vso=tw&vli=cm-general&_tcode=bW03c24x).

### FrontNieuws

2020 Illegale migranten overspoelen Italië – 11.000 in een enkele week. [Illegal migrants flood Italy, 11,000 in a single week.] *FrontNieuws*, 2 August. Available at [www.frontnieuws.com/illegale-migranten-overspoelen-italie-11-000-in-een-enkele-week/](http://www.frontnieuws.com/illegale-migranten-overspoelen-italie-11-000-in-een-enkele-week/).

### InfoBae

2021 EEUU pidió ayuda a una agencia de emergencias para atender el aumento de niños migrantes. [The United States asked an emergency agency for help to attend to the rise in migrant children.] *InfoBae*, 14 March. Available at [www.infobae.com/america/eeuu/2021/03/14/eeuu-pidio-ayuda-a-una-agencia-de-emergencias-para-atender-el-aumento-de-ninos-migrantes/](http://www.infobae.com/america/eeuu/2021/03/14/eeuu-pidio-ayuda-a-una-agencia-de-emergencias-para-atender-el-aumento-de-ninos-migrantes/).

### Mazo4f

2020 Desmantelan red internacional de trocheros en el estado Bolívar. [International trocheros network dismantled in Bolivar state.] *Mazo4f*, 5 September. Available at <https://mazo4f.com/desmantelan-red-internacional-de-trocheros-en-el-estado-bolivar>.

- 2021 Gobierno de Colombia pide a EEUU el dinero venezolano en el exterior para atender a migrantes. [The Colombian Government asks the United States for Venezuelan funds abroad to attend to migrants.] *Mazo4f*, 28 March. Available at <https://mazo4f.com/gobierno-de-colombia-pide-a-eeuu-el-dinero-venezolano-en-el-exterior-para-atender-a-migrantes>.

#### *OkDiario*

- 2020a Fuga de inmigrantes ilegales con síntomas de Covid-19 de un centro de acogida en Cádiz. [Escape of illegal immigrants with COVID-19 symptoms from a reception center in Cadiz.] *OkDiario*, 5 August. Available at [https://okdiario.com/andalucia/fuga-inmigrantes-ilegales-sintomas-covid-19-centro-acogida-cadiz-5985234?utm\\_term=Autofeed&utm\\_campaign=ok&utm\\_medium=Social&utm\\_source=Twitter#Echobox=1596622892](https://okdiario.com/andalucia/fuga-inmigrantes-ilegales-sintomas-covid-19-centro-acogida-cadiz-5985234?utm_term=Autofeed&utm_campaign=ok&utm_medium=Social&utm_source=Twitter#Echobox=1596622892).
- 2020b La prueba definitiva del traslado de ilegales: OKDIARIO accede a las órdenes de Marlaska a la Policía. [Definitive proof of transfers of illegals: OKDIARIO accesses the orders from Marlaska to the Police.] *OkDiario*, 10 December. Available at <https://okdiario.com/espana/prueba-definitiva-del-traslado-ilegales-okdiario-accede-ordenes-marlaska-policia-6556879>.
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- 2021 Criminales venezolanos en Perú fueron enviados por Maduro para generar rechazo en migrantes. [Venezuelan criminals in Peru were sent by Maduro to generate rejection of migrants.] 19 January. *Primer Informe*, Available at <https://primerinforme.com/2021/01/19/criminales-venezolanos-en-peru-fueron-enviados-por-maduro-para-generar-rechazo-en-migrantes/>.

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- 2020 Abascal, tras el violento motín de inmigrantes en Melilla: 'Hay que deportar a los invasores'. [Abascal, following the violent rally of immigrants in Melilla: "We must deport the invaders".] *Rebelión en la granja*, 26 August. Available at <https://rebelionenlagranja.com/noticias/espana/abascal-tras-el-violento-motin-de-inmigrantes-en-melilla-hay-que-deportar-a-los-invasores-20200826>.

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- 2021 Nota Informativa Conjunta. [Joint informative note.] Mexican Government, Secretaría de Relaciones Exteriores, 14 March. Available at [www.gob.mx/sre/documentos/nota-informativa-conjunta-gobernacion-relaciones-exteriores-inm-sndif?idiom=es](http://www.gob.mx/sre/documentos/nota-informativa-conjunta-gobernacion-relaciones-exteriores-inm-sndif?idiom=es).

#### *SinLínea*

- 2021 Promesa incumplida: Biden deporta cientos de migrantes en sus primeros días de mandato. [Promise not kept: Biden deports hundreds of migrants in his first days in office.] *SinLínea*, 2 February. Available at <https://sinlineamx.com/promesa-incumplida-biden-deporta-cientos-de-migrantes-en-sus-primeros-dias-de-mandato/>.



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