

Supplementary File

Part A: Calculation of the Transnational Connectivity Score (TCS)

Calculation. The Transnational Connectivity Score (TCS) was designed to identify hashtags that achieved the greatest transnational adoption among the organizations in the sample. Accordingly, the geographic breadth (the number of countries in which a hashtag was used) is treated as the primary indicator, while also accounting for the breadth of organizational uptake. The TCS therefore combines two normalized components: country breadth, calculated as the number of countries in which a hashtag appeared divided by the number of countries represented in the sample that year, and account breadth, calculated as the number of distinct organizational accounts using the hashtag divided by the number of active accounts that year.

The two components are summed rather than multiplied. This reflects the premise that a hashtag adopted across more countries should be considered more transnational than one repeatedly used by many organizations within only a few countries. A multiplicative formulation would instead give greater influence to organizational intensity within countries and disproportionately penalize hashtags that are geographically widespread but adopted by relatively few organizations. No additional weighting of country breadth was introduced because the normalization already gives it greater influence on the final score, since country breadth ranges from 0.4 to 1, whereas the maximum observed account-breadth is approximately 0.35.

Robustness of the scoring approach. The empirical consequences of this scoring were assessed in two ways. First, rank-order correlation between country breadth and the final TCS is consistently moderate to strong across all years (Spearman's $\rho = 0.46\text{--}0.76$, $M = 0.67$), confirming that country breadth is the primary driver of hashtag ranking. Second, to assess whether account breadth could override geographic diffusion in practice, all hashtags within each year were compared against one another. A reversal was defined as a case in which a hashtag used in fewer countries received a higher TCS than a hashtag used in more countries. A reversal occurred in only 0.03% cases (8 of 31,017 pairs), all of which involve French hashtags tied to the “Manif pour tous” mobilization against same-sex marriage (#manifpourtous, #gpa) in 2013-14, reflecting a genuine period of intense national mobilization rather than an artifact of the scoring formula. Also, none of these reversals changed which hashtags entered the Top-10 selection used for the qualitative analysis; they only affected the relative ranking within the selection.

Robustness of excluding hashtag frequency. Per-actor hashtag frequency (i.e., how often individual accounts repeated a hashtag) was deliberately excluded from the TCS to avoid overrepresenting highly active accounts. To assess this choice, the Top-10 hashtags per year were recomputed with a normalized frequency term (total tweets per hashtag, relative to the most-tweeted hashtag that year) added to the score. The resulting rankings retained an average of 6.7 of 10 hashtags per year (range: 4–9). However, hashtags entering the ranking under the frequency-inclusive score were disproportionately associated with high tweets-per-actor ratios and were concentrated among country-specific campaign hashtags (e.g., #onlr, #restiamoliberi, #sentinelle), while broadly cross-national hashtags dropped out (e.g., #brexit, #trump, #lgbt). This supports the original rationale for excluding frequency: its inclusion would shift the ranking

toward hashtags driven by intensive repetition within a small number of highly active accounts in specific national contexts rather than breadth of cross-border adoption.

Part B: Glossary of Hashtags in Table 1 (Most Connective Hashtags per Year)

Hashtag	Explanation
#1	A numbering or list marker rather than a substantive hashtag.
#2	A numbering or list marker rather than a substantive hashtag.
#afghanistan	Reference to Afghanistan, associated around 2021 with the US military withdrawal and the Taliban takeover.
#alfieevans	Alfie Evans, a UK infant at the center of a right-to-life legal case.
#amorislaetitia	Pope Francis's post-synodal exhortation "Amoris Laetitia," addressing family life.
#apple	Reference to Apple Inc., sometimes tied to a specific corporate controversy or boycott campaign.
#barilla	The Barilla pasta company, referencing a boycott campaign over the company's remarks on homosexuality.
#blacklivesmatter	Hashtag associated with the Black Lives Matter racial-justice movement.
#brexit	The UK's 2016 referendum on EU withdrawal.
#charliegard / #charlie	Charlie Gard, a UK infant at the center of a right-to-life legal case.
#coronavirus / #covid / #covid19 / #covid2019	The COVID-19 pandemic.
#demofueralle / #demofüralle	"Demo für alle" (Demonstration for All), the German anti-marriage-equality and anti-gender-education movement.
#down	Likely references Down syndrome, tied to debates about prenatal testing and selective abortion.
#facebook	Reference to the social media platform Facebook, sometimes tied to a specific corporate controversy or boycott campaign.
#fakenews	Generic media-distrust discourse.
#familyday	"Family Day," a recurring anti-marriage-equality rally in Italy.
#femen	FEMEN, a feminist protest group.
#ff	"Follow Friday," a recurring Twitter convention for recommending accounts to follow.
#freespeechbus	CitizenGo's "Free Speech Bus" campaign, in which a bus toured the world spreading anti-gender messages.
#gay	Reference to homosexuality.
#gender	Reference to gender.
#gpa	"Gestation pour autrui" (French: surrogacy).
#islam	Reference to Islam.
#i	Reference unclear.
#la	Reference unclear.
#laudatosi	Pope Francis's 2015 encyclical "Laudato si'."
#lgbt	Generic reference to LGBT identities/rights.
#life	Reference to life, used in the context of anti-abortion messaging.
#lourdes	Lourdes, a city in France.

Hashtag	Explanation
#lunacek	Refers to the 2014 “Lunacek Report,” a European Parliament resolution (rapporteur Ulrike Lunacek) calling for an EU roadmap against homophobia and transphobia.
#macron	French President Emmanuel Macron.
#manifpourtous	“Manif pour tous” (Demonstration for All), the French mobilization against same-sex marriage.
#marchforlife	The annual US anti-abortion march; the hashtag is also used in other countries.
#matic	Refers to the “Matić Report,” a European Parliament resolution on sexual and reproductive health and rights (rapporteur Predrag Matić) that viewed abortion access as a human right.
#notredame	Notre-Dame Cathedral in Paris, France, used in the context of the 2019 fire.
#obama	US President Barack Obama.
#papa	Italian/Spanish for “Pope.”
#paris	Paris, France.
#pma	“Procréation médicalement assistée” (French: medically assisted reproduction).
#pmasanspère	“PMA sans père” (medically assisted reproduction without a father), French hashtag on assisted reproduction for single women/same-sex couples.
#prayforparis	Response to the November 2015 Paris terrorist attacks.
#prolife	Core anti-abortion movement label.
#roevswade / #roevwade	Variant spelling referencing “Roe v. Wade,” following the US Supreme Court’s 2022 reversal of federal abortion rights (Dobbs v. Jackson).
#trump	US President Donald Trump.
#twitter	Reference to Twitter.
#ukraine / #ukrainewar	Referencing Russia’s 2022 full-scale invasion of Ukraine.
#unplanned	“Unplanned,” a 2019 American anti-abortion film.
#usa	Reference to the United States as a country/actor.
#video	Generic tag marking a video post.
#vincentlambert	Vincent Lambert, a French man at the center of a prolonged euthanasia/right-to-life legal case.
#vita	Italian for “life,” used in the context of anti-abortion framing.
#zika	The Zika virus outbreak, which raised abortion-related debates due to associated birth-defect risk.