2° Tortuga-Edge report

The relationship between LGBTQIA+ inclusion and local economic development

The Italian and European framework

TORTUGA

EDGE
LGBTI+ LEADERS FOR CHANGE

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THE AUTHOR: TORTUGA

Founded in 2015, Tortuga is Italy's first think tank of researchers, graduates and young professionals specialising in economics and public policy. We draft articles and reports on diverse policy issues, collaborate with institutions and policymakers, and strive to develop forward-thinking policy proposals.

We write analyses to delve into the national and international problems with an independent and rigorous style, yet accessible to everyone. We provide professional research and policy-making support to public institutions, companies and private entities or individual policy makers.

EDGE | LGBTI+ Leaders for change

EDGE is a non-profit organisation bringing together key people from the Italian LGBTQIA+ community and their allies – entrepreneurs, managers, professionals. We collaborate with like-minded and similar-purpose organisations globally.

An Action Tank, EDGE promotes researching activities to inform companies' and policy makers' work towards grater diversity and inclusion.

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PREFACE

Ms. Irene Tinagli

Chairwoman of the Economic and Monetary Affairs Committee, European Parliament

I am pleased that Tortuga and EDGE, with the support of an important institution such as the SACE Group, decided to resume and deepen the research on the relationship between LGBTQIA+ inclusion and local economic development.

The academic literature that explores the socio-cultural dimensions related to economic growth is now well established: since I began to investigate, the importance of the mechanisms of social innovation, creativity and talent attraction for a sustainable, long-term development of economies and societies with Professor Richard Florida, a great deal of progress has been made both in terms of understanding the phenomena and translating them into concrete policy guidelines.

Economies that grow sustainably, bringing widespread prosperity, are those capable of including and enabling as many people as possible to participate in social and economic life. This is why civil rights and economic growth are interrelated, mutually reinforcing.

From this perspective, the inclusion of a minority is important for society as a whole: it is by making each and every person feel fully integrated in the life of a community, by valuing diversity instead of repressing it, that we all feel motivated and encouraged to do our best, ensuring dynamism and growth in the contexts in which we operate.

The data and trends in this Report remind us that continuous efforts to promote the inclusion of minorities and the respect of fundamental rights are needed: active, conscious and tenacious work is needed to ensure progress and development.

This research complements the European Commission's LGBTIQ Strategy 2020-25, emphasizing concrete actions for minority rights and fostering systematic dialogue with Member States. This research work complements the efforts of the European Commission, which with its LGBTIQ Strategy 2020-25.

With academic rigour and a diligent analytical approach, this Report underscores the importance of minority inclusion and provides us with new tools for reading societyies, while acknowledging and appreciating regional differences.

EXECUTIVE SUMMARY

This report delves into the relationship between LGBTQIA+[1] inclusion and socio-economic development, drawing insights from ISTAT data and the European Social Survey. It highlights a significant inclusion divide in Italy and underscores a robust correlation between LGBTQIA+ inclusion and the development of both Italian and European regions. Additionally, it suggests that more inclusive territories tend to enjoy a premium in terms of attractiveness, all else being equal.

Recent data, analyzed in this second version of the report, fortifies and expands upon previous findings. Four years since the initial report and eight years since the introduction of civil unions in Italy, this edition incorporates sentiment analysis to deepen our understanding of online discourse, augmenting our insight into LGBTQIA+ inclusion within Italian territories.

The innovative contribution of this Report in the study of LGBTQIA+ inclusion in Italy

The relationship between minority inclusion and economic development has been studied in economics and the social sciences since Becker's seminal contribution (1971). Over the years, numerous researches have investigated both the dynamics of inclusion per se, focusing on various minorities, and the interaction between inclusion, tolerance, creativity and the socio-economic development of companies and territories (in this regard, the research by Tinagli & Florida, 2004; 2005, has been particularly relevant).

This Report focuses on LGBTQIA+ people and Italian territories, providing an important innovative contribution:

1. Developing an **index of LGBTQIA+ inclusion** in Italian territories based on civil union distribution, providing a more granular and robust measurement of inclusion;
2. Enriching the geographical analysis by using ISTAT's **Local Market Areas** (LMAs), which offer a more nuanced understanding of adjacent but diverse territories in terms of LGBTQIA+ inclusion;
3. Integrating the economic analysis with a ***sentiment analysis*** of online discourse, providing insights into areas where public sentiment towards LGBTQIA+ individuals is more positive or negative.

The Report thus provides an accurate, granular and particularly in-depth snapshot of the degree of LGBTQIA+ inclusion in Italian territories.

In this latest analysis we observe a strengthening of trends that already emerged in the first study: there is an important ***inclusion divide*** between Northern, Central and Southern Italy and there is significant **heterogeneity between neighboring LMAs**, underscoring the importance of using this analytical unit over provincial or regional levels.

LGBTQIA+ inclusion, socio-economic development of Italian territories and their attractiveness

[1]Acronym used as a collective term to refer to Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, Asexual people and those generally belonging to minorities related to gender identity and sexual and affective orientation.

There is a **clear correlation** between LGBTQIA+ inclusion and socio-economic development indicators:

1. The largest positive coefficient is between inclusion and **income**. Moreover, the most inclusive territories are those with the least inequality;
2. As for the demographic variables, a negative correlation emerges between inclusion and the rate of young people part of a household;
3. Finally, LGBTQIA+ inclusion is positively correlated with **activity rate** and **employment rate**, negatively with unemployment.

Residual analysis is conducted to supplement the analysis, as correlations do not imply causality. This technique isolates the attractiveness component from socio-economic variables, allowing for a more specific examination of the relationship between LGBTQIA+ inclusion and **territory attractiveness**.

The analysis confirms an **attractiveness premium** for the most LGBTQIA+ inclusive territories, independent of other socio-economic factors. Moreover, the significance of this premium has more than doubled since 2017.

Relationship between LGBTQIA+ inclusion and socio-economic development at European level

The positive correlation between socio-economic development found in the Italian data is confirmed also at the European level, looking at **historical trends** from 2002 to present days:

1. Central Europe and Northern Europe are the most LGBTQIA+ inclusive areas;
2. In southern Europe, Spain, Portugal and Greece show an upward trend in inclusion; Italy is more stable;
3. In a European perspective, Italian macro-regions have similar levels of inclusion which are among the lowest in Europe;
4. Poland and Hungary stand out for a particularly low levels and trends of inclusion.

The analysis of European data **confirms the correlation** between LGBTQIA+ inclusion and socio-economic development and reinforces the Report's evidence, thanks to a pan-European and longitudinal analysis.

1. Introduction and methodological approach

LGBTQIA+ **inclusion**[2] is a **catalyst for development** and **attractiveness of** a territory: this is the result of the first edition of this Report, on the relationship between LGBTQIA+ inclusion and socio-economic development.

In Italy and in Europe there is a positive correlation between LGBTQIA+ inclusion and various economic variables. Furthermore, LGBTQIA+ inclusion in Italy guarantees a "premium" of attractiveness for an area, additional to economic dynamics.

The evidence of the first edition of the Report is now updated and expanded in this **second edition**, exploiting an extended historical series that allows us to carry out more robust and innovative analyses.

In this second edition, the economic analysis is accompanied by a ***sentiment analysis***, i.e. a social survey aimed at capturing the tone and emotions present in the public discourse regarding issues of interest to LGBTQIA+ people. This gives us a new perspective of the heterogeneity that characterizes local contexts in terms of LGBTQIA+ inclusion.

This Report is part of the field of research initiated by Becker's (1971) seminal contribution on economic discrimination against minorities, particularly in the labor market; it updates and expands on Tinagli and Florida's analysis of the interaction between tolerance and development in Italy and Europe (Tinagli & Florida, 2004; 2005).

The paper begins with a literature review (par. 2), subsequently delving into the Italian case (par. 3) and the European context (par. 4). In the examination of the Italian scenario, emphasis is placed on devising a metric for LGBTQIA+ inclusivity (par. 3.1) within Local Market Areas (par. 3.2), complemented by an analysis of public discourse utilizing data from the social media platform "X" (formerly Twitter, par. 3.4).

2. Literature Review

The nexus between inclusion, rights, and economic development has garnered considerable attention in scholarly discourse, with seminal contributions such as Becker (1971) and Bove & Elia (2017) serving as foundational references. This literature review directs its focus specifically towards investigations concerning LGBTQIA+ inclusion.

The studies first investigate the **cultural and legislative context**. In 2015, the International Lesbian, Gay, Bisexual, Trans and Intersex Association (ILGA) mapped the legislative environment globally (Carroll & Itaborahy, 2015), providing valuable insight into the heterogeneous level of openness and protection in different contexts, between criminalization and recognition. An updated version of the study updated to 2020 is available online. ILGA also furnishes insights into the status of LGBTQIA+ individuals regarding their rights and societal acceptance in its annual publication, "Annual review of the human rights situation of lesbian, gay, bisexual, trans and intersex people" (Ilga-Europe, 2013 and subsequent annual versions).

[2] Acronym used as a collective term to refer to Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, Asexual and generally belonging to minorities related to gender identity and sexual and affective orientation

Moreover, in 2019 the Organisation for Economic Cooperation and Development OECD published the report 'Society at a glance' (OECD, 2019), offering an overview of LGBTQIA+ inclusion and discrimination in member countries, investigating in particular the level of tolerance(declared and perceived) towards LGBTQIA+ minorities. The Ipsos Institute's 'LGBT+ Pride 2023' report delves into public opinion openness across 30 countries concerning issues such as marriage equality, adoption rights, and anti-discrimination safeguards for LGBTQIA+ minorities (Ipsos, 2023).

In 2022, the Italian National Institute of Statistics (Istat) published in 2022 a survey on discrimination against LGBTQIA+ people in the workplace (Istat, 2022): conducted in the two-year period 2020-2021, the study involved over 21,000 Italian residents in a civil union, examining their experiences of discrimination in the workplace. Prior to this study, a quantification of the degree of discrimination against LGBTQIA+ people had been carried out by Botti and D'Ippoliti (2014): using data from the Bank of Italy, they found a lower level of social inclusion of gay couples due to forms of discrimination. Patacchina et al. (2012), on the other hand, found a lower likelihood (around 30%) for LGBTQIA+ candidates to be called for an interview compared to non-LGBTQIA+ candidates, despite equivalent levels.

The economic literature then links **inclusion to economic development**. In this regard, we identify two categories of research: those that focus on companies or individual economic sectors, thus at a more disaggregated level, and those that explore impacts on regions and countries, thus at a more aggregated level.

The former category encompasses studies delving into workplace diversity and inclusion (Hunt et al., 2015; Rock & Grant, 2016), as well as those specifically addressing LGBTQIA+ inclusion and discrimination within the workforce (Fidas et al., 2014). These studies offer concordant evidence about the benefits of adopting inclusive policies, citing enhanced productivity, employee well-being, and organizational performance as notable benefits. Other research, also belonging to this first category, focuses on the increasingly prominent role of companies in promoting and protecting the rights of minorities, in line with the increasing adoption of corporate social responsibility practices by companies and heightened accountability concerning human rights protection. In this vein, numerous studies offer tools for companies to integrate diversity into corporate policies and practices, for example in personnel selection and the creation of an inclusive work environment (Amis, 2011; Mares, 2011; UN, 2017).

The second category, examining the ramifications of inclusion on regions and countries, holds paramount importance for this paper: in particular, the relationship between inclusion and economic development is explored, taking into consideration both GDP and several other indicators of socio-economic development.

Many studies point to a positive relationship between **minority inclusion** and economic development, typically captured by GDP (Ager & Brückner, 2013; Ottaviano & Peri, 2006). One mechanism emerges as fundamental in this relation: heterogeneity enriches societies, with positive repercussions on economic development (Bove & Elia, 2017).

This positive relationship emerges also in studies that focus on **LGBTQIA+ inclusion**. Flores et al. (2018) construct three indices that measure the level of inclusion in a country, taking into account

the legislative situation, in particular the degree of recognition of rights (Legal Count Index, Legal Environment Index), and the degree of openness of public opinion as measured by opinion polls (Global Acceptance Index). A positive correlation between the inclusion indices and GDP emerges.

Similarly, this positive relationship emerges in M. V. L. Badgett et al. (2014 and 2019), where other indicators of inclusion (GILRHO, the Transgender Rights Index and the Human Rights Index) are used, identifying a consistently positive relationship with GDP per capita and measures of well-being. In a recently published book (M. L. Badgett, 2020), the same author shows how LGBTQIA+ inclusion in companies increases profits and allows economies as a whole to prosper.

Moreover, economic literature accentuates innovation and human capital development as pivotal channels shaping this dynamic (Vu, 2022). Nations exhibiting greater LGBTQIA+ protections demonstrate heightened innovative capacities, whereas discrimination impedes the accumulation of quality human capital. Evidence suggests that fostering an inclusive environment for LGBTQIA+ individuals cultivates open-mindedness, diversity acceptance, and heightened creativity, thereby mitigating barriers to talent influx and innovation.

Of particular relevance in this discourse, albeit less recent, is the report 'Italy in the Creative Era' (Tinagli & Florida, 2005), particularly pertinent due to its focus on Italy. It juxtaposes Italian provinces through Florida's model, positing talent, technology, and tolerance as imperatives for economic competitiveness. Tinagli and Florida's work served as a foundational inspiration for the initial version of this report, subsequently updated and expanded herein..

3. The Italian case - LGBTQIA+ inclusion, development and mobility

We present an updated edition of our Report, enriched with a more extensive historical dataset enabling more rigorous analyses of the phenomena under scrutiny. Additionally, we propose a social survey to gauge the sentiments and attitudes prevailing in public discourse regarding LGBTQIA+ matters.

3.1 Civil unions as a measure of LGBTQIA+ inclusion

Law 76/2016 (the so-called Cirinnà law), passed in 2016, represented a significant step forward in the inclusion of the LGBTQIA+ community in Italy. It is of particular interest in this Report because it allowed us to measure LGBTQIA+ inclusion at the local level, overcoming some of the limitations of the measures that had been adopted previously.

Under the Cirinnà law, civil unions between persons of the same sex are recognised in the Italian legal system as 'formazioni sociali specifiche' (specific social institutions) that are constituted through a declaration before the civil registrar. Upon formation of the civil union, the parties acquire the same rights, assume the same duties and share the mutual obligation to moral and material assistance and cohabitation.

From a social point of view, the recognition of civil unions can have important repercussions on the inclusion of LGBTQIA+ people, influencing societal perceptions of LGBTQIA+ experiences and relationships, potentially encouraging more individuals within the LGBTQIA+ community to openly express their identities, and triggering positive reinforcing mechanisms.

In 2022, almost 3,000 civil unions were celebrated (Istat data; for comparison, 190,000 marriages were celebrated in the same year). Over the period from 2018 to 2022, with the exception of 2020, when around 1,500 unions were recorded, between 2,000 and 3,000 civil unions were celebrated annually. The lower number in 2020 is likely attributed to the COVID-19 pandemic.

Our updated Report now benefits from a more extensive historical dataset spanning from 2017 to 2021, allowing for a more comprehensive analysis compared to the earlier edition, which was based solely on data from 2016 and 2017.

As in the first edition, we use data on civil unions to construct our local-level inclusiveness index. This index represents the first important contribution of this Report in measuring LGBTQIA+ inclusion in Italy and its economic implications.

Previous studies have explored LGBTQIA+ inclusion in Italy, which we have already referred to in par. 2:

- US listed companies (Pichler et al., 2016)
- Families (Botti & D'Ippoliti, 2014)
- Online community of reference of the LGBTQIA+ community (Tinagli & Florida, 2005)

While valuable, these studies may be subject to limitations (which we have already explored in the first edition of the Report), including underestimation due to reticence stemming from discrimination and internalized homophobia[3]. In the case of the aforementioned study by Tinagli & Florida, there may also be a distortion linked to a 'selection bias', as the analysis was based on data collected from members of an online community (Gay.it, 2004 surveys) and not from the general population.

Our index addresses these limitations by analyzing a larger and more robust sample, weighted by population, and standardizing values from zero to one for easier interpretation. We anticipate that regions exhibiting greater inclusiveness will also demonstrate fewer disincentives for LGBTQIA+ individuals to openly express their identities and affections.

The expanded historical dataset in this edition enables us to overcome previous limitations, particularly in accurately capturing the evolution of relationships sanctioned through civil unions over time. The data from 2016-2017 were primarily characterized by pre-existing relationships, whereas more recent data is likely to reflect newer relationships and a greater willingness among individuals to publicly acknowledge their unions, offering a more accurate measure of current inclusion levels.

[3] Internalised homophobia, as defined by Meyer (1995), is the LGBTQIA+ person's internal projection of society's homophobic attitudes. As Newcomb and Mustanski (2001) explain, internalised homophobia can lead to discomfort in coming out and difficulties in bonding with the LGBTQIA+ community..

3.2 Local market areas

Consistent with our approach in the initial edition of the Report, we conduct an empirical analysis that closely reflects the local nuances of Italian territories.

Previous studies primarily examined provincial-level data. We consider this level to be excessively aggregated: we observe considerable heterogeneity in terms of inclusion even within the same provinces. This gives particular value to a more granular analysis.

For this reason, we use data on civil unions aggregated at the level of the so-called Local Market Areas. These systems represent a territorial grid defined by ISTAT, leveraging commuting patterns surveyed during the General Population and Housing Censuses. In the last census, 611 Local Market Areas were identified, with some modifications made in 2019 due to municipal mergers. Local Market Areas.

Each Local Market Area represents a hub where people reside and work; hence, they exercise most of their social and economic relations. This territorial subdivision therefore makes it possible to capture the most relevant dimensions of a local socio-economic ecosystem. The literature that defines and employs this logic of subdividing territories (so-called 'local labour markets') in national and international contexts is extensive (Anelli et al., 2019; Card, 2001; Manning & Petrongolo, 2017), including specifically in analyses on the topic of diversity (Suedekum et al., 2014).

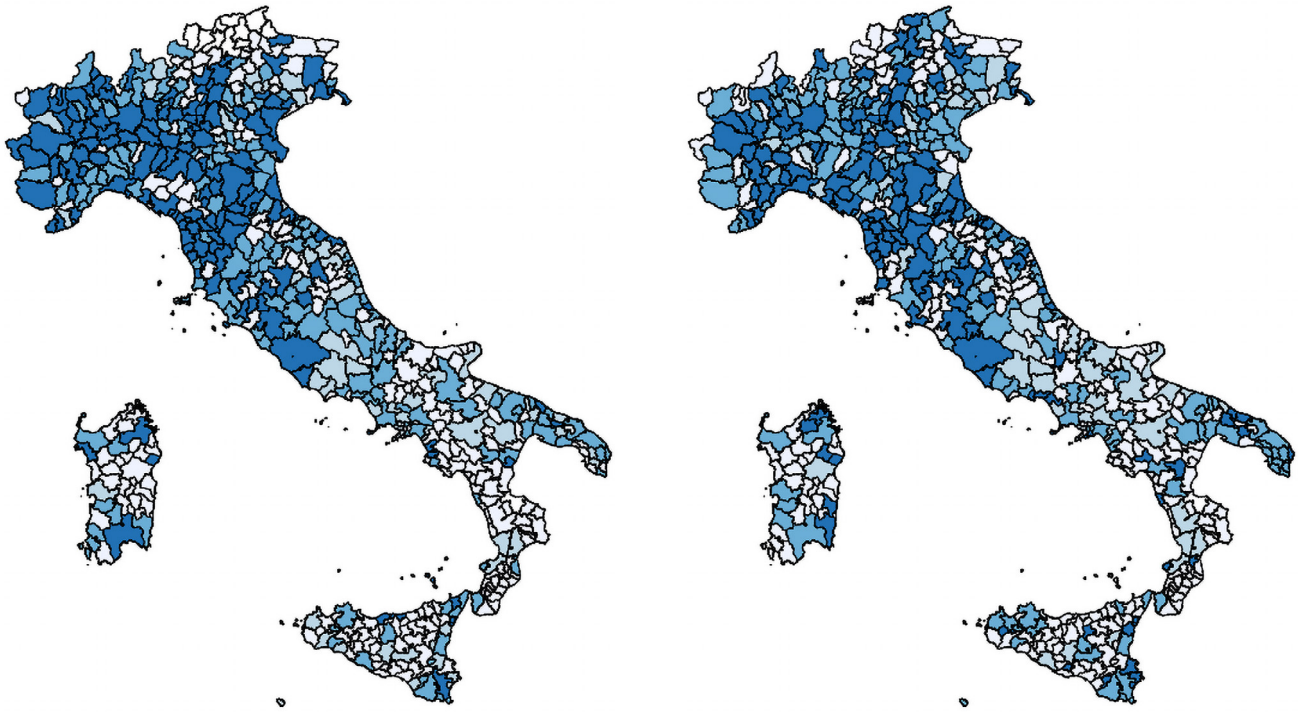
Figure 1 illustrates. Illustrates the relative distribution of our LGBTQIA+ inclusion measure across Italian territory. As anticipated, this measure is based on the number of civil unions relative to the population of each Local Labour System.

The darker areas correspond to areas with a higher incidence of civil unions, while the lighter areas correspond to areas with a lower incidence.

The 2021 snapshot reaffirms trends that already emerged from the 2016 data: there is an important inclusion divide between Northern, Central and Southern Italy, with the intensification of civil unions in the North-West and in the Centre-North. We also observe a persistent heterogeneity between neighbouring Local Market Areas, which confirms the importance of this measure with respect to aggregation at provincial level. Additionally, “marriage tourism", i.e. the choice of LGBTQIA+ couples to celebrate their civil unions in certain localities considered particularly attractive even if distant from their place of residence (in particular in some places in northern Sardinia, western Sicily, Apulia and Campania), also seems on the rise. This phenomenon, already present in the previous report, does not seem to compromise the effectiveness of the analysis.

The other data used in our analysis, particularly those pertaining to socio-economic variables other than LGBTQIA+ inclusion, were collected at municipal level, the most 'granular' administrative dimension available.

Figure 1: Civil unions in relation to resident population, in Italian Local Market Areas; 2016 (left) and 2021 (right)



3.3 The analysis

3.3.1 LGBTQIA+ inclusion and development: a correlational analysis

The first step of the analysis is to observe the correlation between LGBTQIA+ inclusion and selected variables related to socio-economic development.

For this correlational analysis, we define the LGBTQIA+ inclusion index as the average number of civil unions per capita between 2017 and 2021. To mitigate potential biases from the COVID-19 pandemic, we also establish a secondary LGBTQIA+ inclusion index, which includes civil unions only until 2019, enabling us to assess the robustness of correlations..

We then select the key interest variables to capture the socio-economic development of territories.

To measure the **wealth** of territories, we use taxable income per capita. The data are made available by the Ministry of Economy and Finance.

However, this data does not distinguish between communities with high income inequality and those with more equitable distribution. Therefore, we also analyze the correlation of the inclusion index with the Gini index, which measures the level of income **inequality** (a value of 0 means that all inhabitants in the area have exactly the same income; as the value rises towards 1, the community is characterized by greater inequality). The Gini index is calculated using data on income distribution also made available by the Ministry of Economy and Finance.

Other variables of interest from a socio-economic perspective are those related to **demography** and the **family**. We explore the relationship with the dependency ratio, i.e. the ratio of the population

over 65 to the working-age population. Additionally, we use the percentage of young people living in families and of young people living together. All these data are provided by ISTAT.

Lastly, we investigate the correlation with labor market variables, including the activity rate (ratio of active individuals to the total population), employment rate (ratio of employed individuals to the total population), and unemployment rate (ratio of unemployed individuals to active individuals).

Tabel 1: Correlation coefficients between LGBTQIA+ inclusion index and socio-economic variables, in Italian Local Market Areas

		First edition of the Report	Current issue of the Report	
Socio-economic category	**Variable**	**2017**	**2017 – 2019**	**2017 – 2021**
Wealth and inequality	Average Income Per Capita	0.56	0.54	0.54
	Gini index	-0.19	-0.25	-0.24
Demography and the family	Dependency rate	0.11	0.035	0.07
	Population rate in households	0.27	-0.45	-0.38
	Population rate in cohabitation	0.21	Data not available	Data not available
Labour Market labour market	Activity rate	0.36	0.38	0.37
	Employment rate	0.37	0.47	0.44
	Unemployment rate	-0.35	-0.39	-0.41

Comparing the data from the first edition of the Report (shown in the first column) with the most recent findings (second and third) allows us to verify the 'tightness' of the correlations and the robustness to the inclusion of data from the pandemic period.

The highest correlation coefficient is observed between inclusion and **income**: a higher degree of LGBTQIA+ inclusion is associated with greater prosperity. A negative correlation between inclusion and **inequality** is confirmed, which becomes more pronounced in this second edition of the Report suggesting that more inclusive territories exhibit lower levels of inequality.

Regarding demographic and family variables, we note nearly zero correlation between inclusion and dependency rates, contrasting with a positive correlation (0.11) observed in the first edition. A negative correlation emerges between inclusion and the rate of young people in families, while data on population rate i cohabitation are unavailable.

In terms of labor market variables, the activity and employment rates continue showing positive correlations with inclusion, while unemployment is negatively correlated with our index. These correlations strengthen with deeper time series data.

It is important to note that identified correlations do not imply causality; we cannot conclude whether greater LGBTQIA+ inclusion leads to increased income or vice versa. However, these

findings suggest a positive reciprocal feedback relationship between development and inclusion.

Further, correlations are not conditional. In the presence, therefore, of socio-economic variables that are linked (like per capita income and unemployment rate), the correlation between LGBTQIA+ inclusion and a specific socio-economic factor will 'overlap' with the correlation observed when relating inclusion to other socio-economic factors correlated with it.

To further enrich the analysis, aware of the difficulty of identifying causal links, we resort in the next section (par. 3.3.2) to an analysis of **residuals**.

Before delving into that, we relate the LGBTQIA+ inclusion index to historical wealth (average per capita income from 2000-2021) and changes in wealth (2000-2021 and 2008-2021 - we consider the latter period, as an alternative to 2000-2021, so as to exclude the immediate effects of the 2008 crisis).

LGBTQIA+ inclusion exhibits a strong correlation with historical wealth (0.50) and a significant negative correlation with changes in wealth (-0.38 for 2000-2021; 0.13 for 2008-2021).

As we already concluded in the first edition of the Report, these results seem to indicate that we are dealing with long-standing economic and cultural phenomena.

Undoubtedly, there is a strong current and historical correlation between inclusion and wealth. Yet, the analysis employing variation in wealth to suggest that differing levels of inclusion cannot be entirely explained by the fact that a growth in wealth makes the territory more inclusive, thus placing inclusion itself at the centre of the development dynamic.

3.3.2 LGBTQIA+ inclusion and attractiveness of territories: a residual study

It is very difficult to identify a causal relationship that would allow us to measure the impact of greater LGBTQIA+ inclusion on economic development. However, we can study in more detail the relationship between the level of LGBTQIA+ inclusion and the **attractiveness of an area**. This is because the literature (par. 2), suggests that inclusion fosters economic growth by promoting openness towards individuals from diverse backgrounds.

As in the first edition of the Report, we adopt residual analysis to analyse the correlation between the LGBTQIA+ inclusion index and the number of members of each Local Labour System. This correlation, unlike those in section par. 3.3.1, is **conditioned on a set of other socio-economic variables, namely** population, per capita income, public investment (allocated five years prior in areas such as environment, energy, production, real estate, research, training, and transportation), unemployment, and house prices. These variables, sourced from Andrienko and Guriev (2004) and various governmental agencies, help determine a territory's attractiveness. Data on income are from the Ministry of Economy and Finance, data on population and unemployment are from ISTAT, data on public investments are available on OpenCup and data on house prices are from the Observatory on the Real Estate Market of the Revenue Agency.

In our 'baseline' regression, which incorporates control variables, we include fixed effects for each year to mitigate the influence of transient phenomena limited to a single year. The 'baseline' regression equation is as follows:

$$ln(iscritti_{it}) = \beta ln(pop_{i,t-1}) + \gamma ln(redditopc_{it}) + \delta ln(investimenti_{i,t-5}) + \xi ln(prezzicase_{it}) + \eta ln(disoccupazione_{it}) + \theta_t + \varepsilon_{it}$$

The residuals of this regression, i.e. the portion of each observation that cannot be explained by the 'baseline' set of variables, are strongly correlated with the LGBTQIA+ inclusion index.

Tabel 3: Correlation between residuals and the LGBTQIA+ inclusion index

	Residues
Inclusiveness 2017	0,13
Inclusiveness 2017 - 2019	0,25
Inclusiveness 2017 - 2021	0,29

The correlation has **significantly increased since** the first edition of the Report and remains valid and significant including pandemic years.

As highlighted in the first edition of the Report, this finding holds significant implications for several reasons. Methodologically, it represents a statistically robust result. Substantively, while the effect size may seem modest at first glance, several key considerations should be taken into account:

- the model, captures **only the 'residual' component** and thus excludes mechanisms of interaction between wealth and inclusion (i.e. it measures the additional contribution of LGBTQIA+ inclusion to the correlation, already established with economic factors);
- The LGBTQIA+ population, being a minority, is relatively small in size. Although exact measurements of diversity in gender identity and sexual orientation are complex, the size of the reference population impacts the correlation's weight;
- The interpretation of results is based on the 'maximum' observable inclusion in Italy. However, as demonstrated in the following section, inclusion levels in Italy often lag behind those in the rest of Europe, structurally diminishing the maximum observable correlation.

These results allow us to confirm the conclusion of the first edition of the Report: LGBTQIA+ inclusion serves as a driver of attractiveness for a territory, alongside its economic performance.

3.4 Twitter, public discourse and inclusion

3.4.1 Public speech and hate speech

In recent years, the public discourse surrounding the LGBTQIA+ community has intensified, with social media platforms playing a crucial role as significant arenas for public discussion. In this second edition of the Report, we decided to use research methodologies from the field of *machine learning*[4], in particular *natural language processing*[5] (NLP), to analyze the public discourse on social media, more specifically Twitter.

We make use of **sentiment analysis**[6], a technique used to understand and evaluate the tone used and the emotions expressed in written texts, such as social media messages, product reviews or newspaper articles. Sentiment analysis helps determine whether expressions are positive, negative or neutral. This provides a deeper understanding of how people feel about certain topics or events, thus allowing researchers to identify trends in public opinion. Further details on the machine learning models that were employed in this report are given in the Appendix.

This methodology of analysis focuses on evaluating the tone and emotions conveyed by individuals participating in public discussions on LGBTQIA+ issues. Consequently, it provides a qualitative and contextual perspective, complementing the quantitative indicators presented in the rest of the Report. Additionally, it facilitates a dynamic and immediate comprehension of shifts in public opinion.

The first index developed, i.e. '**negative speech index**', measures the proportion of negative messages among the total number of tweets published. The second index, the 'hate speech index', quantifies the ratio of tweets containing hate speech to the overall number of tweets.

The difference between negative speech and hate speech lies mainly in the intensity and nature of the expression analyzed. Hate speech refers to expressions that aim to denigrate, defame or incite hatred towards a group or individual on the basis of characteristics such as ethnicity, religion, sexual orientation, gender, or other protected characteristics (Openpolis, 2022; Sellars, 2016); in our case, LGBTQIA+ people. Negative speech, on the other hand, qualifies expressions that are critical, hostile or unpleasant but not intended to denigrate, defame or incite hatred.

[4] Machine learning, a subset of artificial intelligence, focuses on creating algorithms and models that empower computers to learn from data and enhance their performance iteratively, without requiring explicit programming instructions.

[5] Natural Language Processing (NLP) represents a branch of artificial intelligence focused on enabling computers to comprehend, interpret, and generate human language. Machine learning methods are frequently utilized within NLP to construct models that can educate computers on understanding, analyzing, and communicating vast amounts of data across various languages.

[6] Sentiment refers to the contextual polarity of a text or document, i.e. the emotional effect that the text or document has on the reader or that the author wants to convey. It refers to a general attitude or opinion towards something, often classified as positive, negative or neutral, reflecting a general assessment without necessarily specifying particular emotions. Emotions, on the other hand, are more nuanced and detailed than sentiments, as they convey the complexity of human feelings. For example, emotion analysis of social media posts can reveal whether people express joy, frustration or sadness about a particular event. Sentiment, therefore, reflects a general attitude or opinion, while emotion refers to specific, identifiable feelings or states.

Geolocating tweets enabled us to develop indices at the provincial level, enhancing our understanding of the phenomenon and its societal implications across Italian territories. We utilized a dataset of tweets extracted in real-time from 2017 to 2022, obtained from the NLP laboratory at the University of Turin. Special thanks to Mirko Lai and Valerio Basile for granting access to this invaluable dataset.

The dataset in question contains billions of tweets in Italian each identified by a unique code and categorized according to the following distinctive features:

- ID: unique identifier of the tweet (in HASH format);
- Content: content of the tweet;
- Language: the language of the tweet;
- User_id: pseudonymised username (in HASH format);
- Screen_name: username as shown on the platform;
- Dates: date of publication of the tweet;
- Lat/Lon: coordinates from which the tweet was posted;
- Place_id: (approximate) location from which the tweet was posted;
- Is_retweet/is_reply/is_quote: significant dummy variables to understand whether the tweet is a retweet/reply/quote of a third tweet.

In order to have a relevant sample for the purposes of our analysis, we identified tweets concerning LGBTQIA+ issues, re-filtering the tweets by language to make sure we only had tweets in Italian, and selecting content containing words such as *LGBT, Civil Rights, Gay, Lesbic**, ... as proxies for the topic (for the full list, see Appendix). The dataset was finally anonymised, removing information on individual users.

We therefore took two approaches to geolocalize tweets:

- The first uses the **geographical coordinates** of users who share them, either at national or municipal level. The dataset obtained is 6852 tweets', thus rather limited;
- The second consists of identifying elements in the **content of the tweet or user's bio** that are useful for identifying the place from which it was published. In doing so, we greatly expanded the dataset to around 240,000 tweets.

We then identified tweets indicative of negative speech or hate speech.

For the **negative speech** index we used the FEEL-IT model developed on a dataset of tweets in Italian. FEEL-IT is able to classify tweets as positive or negative based on the presence of emotions discernible from the text, in particular joy (classified as positive) or anger, fear and sadness (classified as negative) (Bianchi et al., 2021).

The distinction between negative speech and hate speech is not always clear-cut (Hietanen et al., 2022). There are expressions that can contain both elements of criticism or dissent as well as content inciting hatred or discrimination. In order to identify **hate speech** specifically, it is necessary to capture the nuances of the language. To this purpose we employed the HATE-ITA model, trained on large datasets of Italian and English tweets, which outperforms other models for textual analysis in Italian (Nozza et al., 2022).

Below are some examples of how tweets were labeled according to the expressions present:

- *"gays like draghi and the green pass. prove me wrong"* - labelled **negative speech**, but not hate speech
- *"@madamea02 the #ddlzan defends the rights of the #lgbt galaxy, not caring if it infringes on those of Catholics, heterosexuals, those who believe in freedom of thought and education right to punish discrimination, but without introducing more!"* - labelled as **negative speech**, but not hate speech
- *"pride has nothing to do with homorelationship rather a cabaret made by pigs to be imprisoned for obscene acts!"* - labelled **hate speech**
- *"to me, these gays, in addition to disgust me, are starting to piss me off!"* - labelled as **hate speech**
- *"who was at pride on the pulpit? but, look, I would tell you more. We would like free people everywhere, not on the pulpit, free to be who they want to be and teaching freedom, everywhere."* - labelled **positive speech**

It is important to note that tweet labeling is probabilistic and subject to bias, especially when dealing with nuanced meanings.Additionally, longer tweets are typically easier to classify as positive or negative, hateful, or otherwise, compared to shorter ones. These factors should be taken into account when interpreting the findings.

3.4.2 Results

The analysis reveals a **marked predominance of tweets with negative** sentiment, amounting to 72% of the total (Figure 2). Among the four most prominent emotions, three are negative: anger, sadness and fear (Figure 3). The feeling of **anger is particularly relevant** (60%). 19% of the tweets take exhibit the characteristics of hate speech (Figure 4).

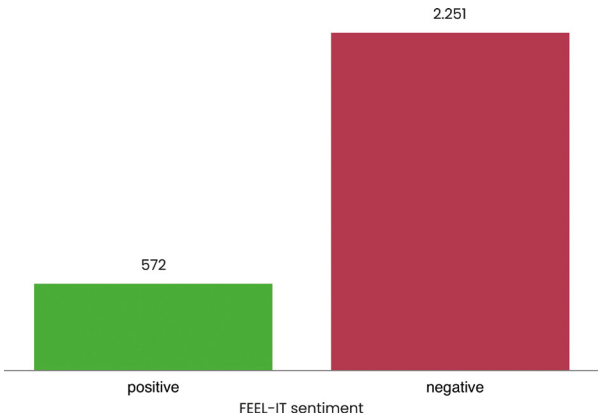


Figure 2: Tweets with positive or negative sentiment (k)

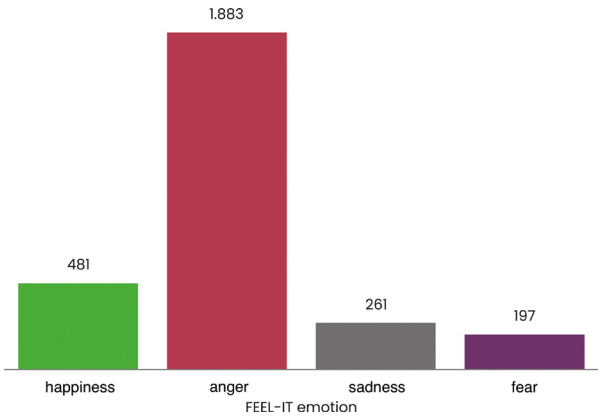


Figure 3: Emotions expressed in tweets (k)

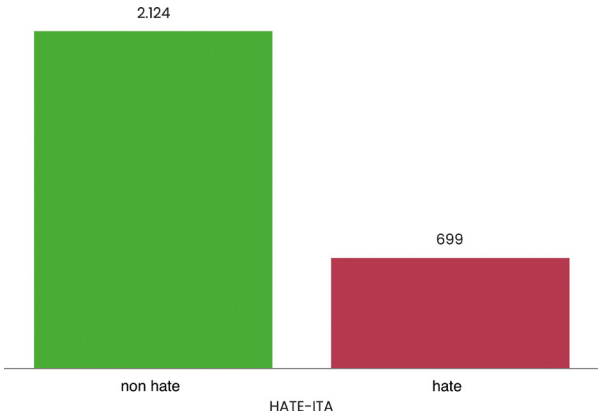


Figure 4: Tweets containing hate speech (k)

The geographical distribution of the tweets makes enables the identification of provinces characterized by more or less positive and more or less hateful debate against LGBTQIA+ individuals (Figures 5 e 6).

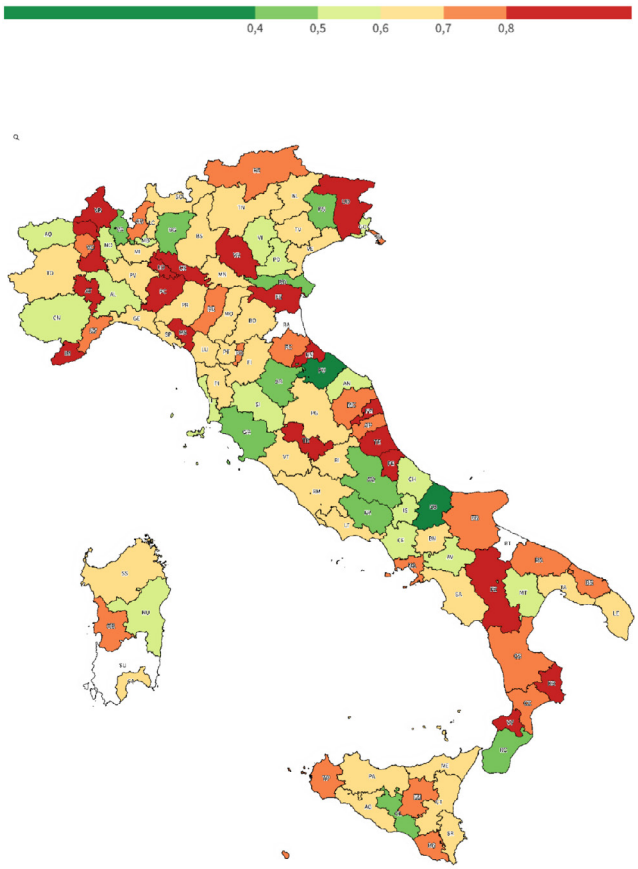


Figure 5: Provincial distribution of tweets labelled as *negative* sentiment

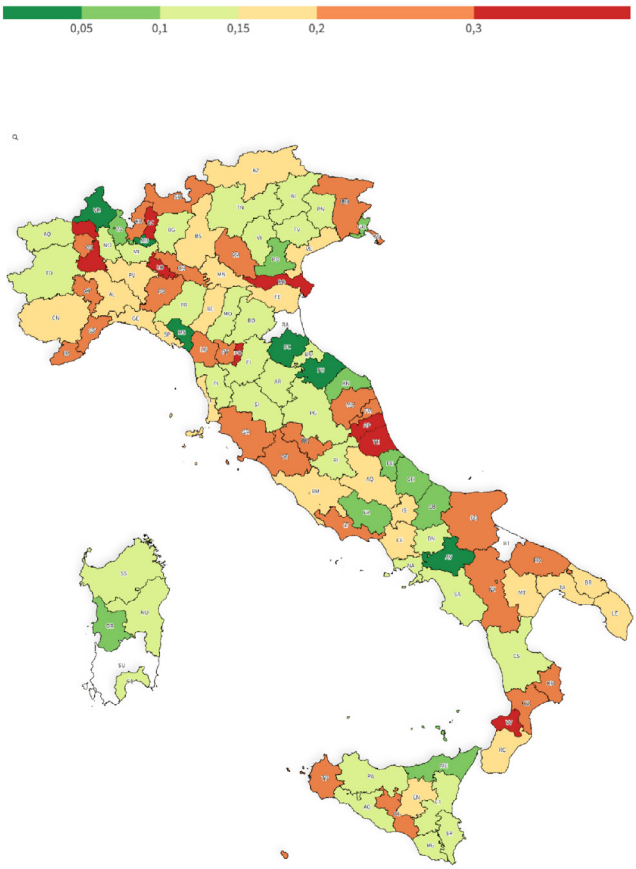


Figure 6: Provincial distribution of tweets labelled as *hate speech*

The inclusion divide between north and south found when using civil unions (see par. 3.2) does not emerge in this case. As in the case of civil unions, however, evidence is confirmed that neighbouring territories may show very different levels of LGBTQIA+ inclusion. This confirms the need for **granular approaches to analysis and policymaking**, that do not neglect the territorial dimension.

The observation that online discussions about LGBTQIA+ topics tend to be predominantly negative aligns with findings in broader academic literature. For instance, Schone et al. (2021) examined the prevailing sentiment of tweets related to significant public events, such as the 2014 protests in Ferguson, the 2015 US Supreme Court ruling on marriage equality, and the 2016 US presidential election. Their analysis revealed that negative tweets are more frequently shared compared to positive ones, regardless of whether the events themselves were positive or negative. This pattern appears consistent across various political subjects discussed online, including LGBTQIA+ issues.

4. The case European case

In this new edition of the Report we renew our interest in extending the analysis to the European level.

In this section, we create an LGBTQIA+ inclusion index and examine the phenomenon across various European regions. Our analysis spans from the 2000s to the present, utilizing data up to 2020. We replicate the empirical analysis conducted on Italian territories to identify correlations between LGBTQIA+ inclusion and socio-economic development variables.

4.1 The LGBTQIA+ Inclusion Index at European Level

The LGBTQIA+ inclusion index at the European level is derived from the European Social Survey dataset (ESS, 2020), which captures public opinion on various topics, including attitudes towards LGBTQIA+ individuals. Although this index is more qualitative compared to the civil union data available for Italy, it provides valuable insights into societal attitudes towards LGBTQIA+ people across Europe.

We selected three statements that are of particular interest for constructing the LGBTQIA+ inclusion index:

1. "Homosexual people must be free to live as they please.";
2. "I am ashamed if a close member of my family is homosexual";
3. "Homosexual persons have a full right to adopt a child".

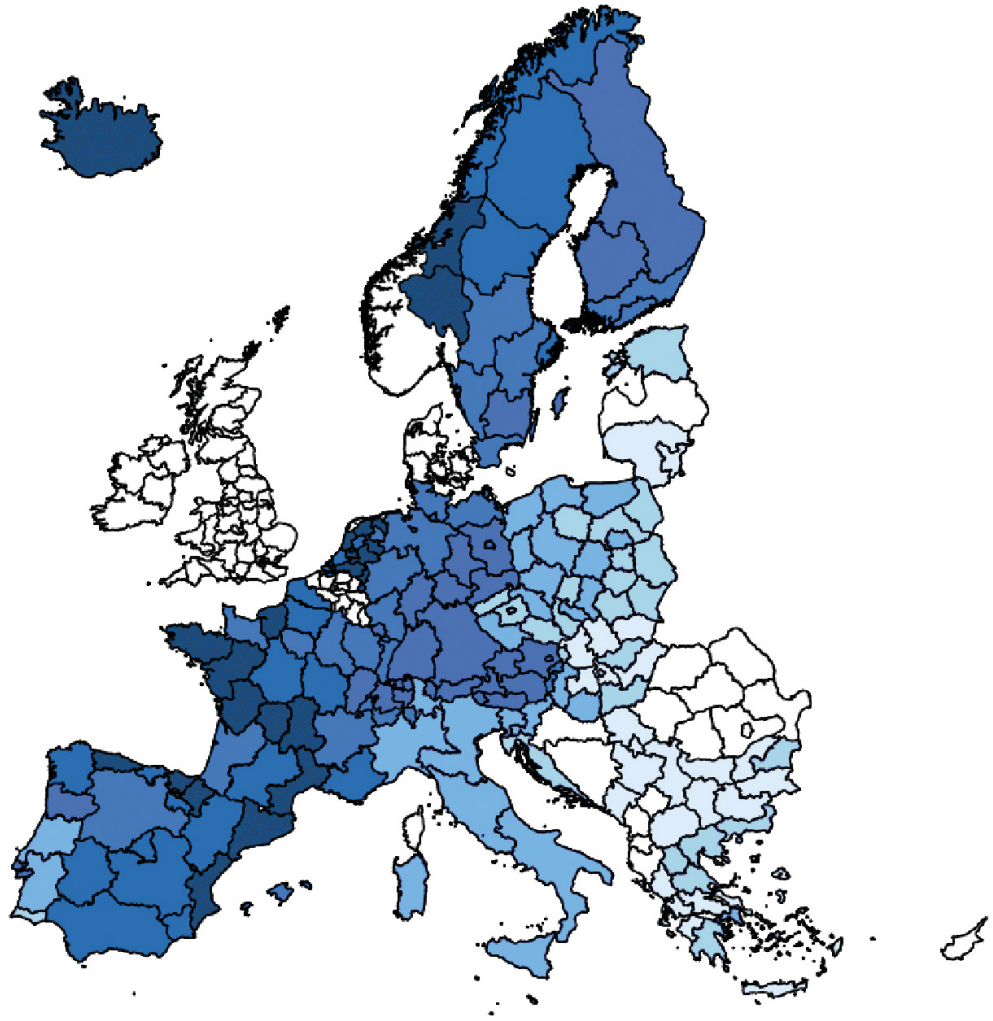
SSE participants express their degree of agreement/disagreement with these statements, which we then combine into a single index.

The choice of these three statements is justified by the economic and sociological literature by, among others, Kite and Whitley (1996). The authors identify three dimensions of intolerance towards LGBTQIA+ people (in their studies, they focus on attitudes towards diversity of sexual orientation, male and female): intolerance towards the behavior of homosexual people, intolerance towards homosexual individuals, and intolerance towards the civil rights of homosexual people. These three dimensions seem effectively captured by the three statements we have selected, suggesting that our analysis is effective and sufficiently comprehensive.

The index is aggregated at the level of the European region 'NUTS2', which broadly corresponds to Italian regional divisions. However, the latest ESS observations for Italy are only available at the 'NUTS1' level, representing macro-regions. While this is less granular than the Local Market Area view used for Italy, it still allows for a detailed analysis given the lack of comparable data at lower territorial levels across Europe.

Figure 7 Illustrates the distribution of the European LGBTQIA+ inclusion index, based on ESS data updated to 2020. Dark red areas indicate the most inclusive regions, while light yellow areas represent the least inclusive ones. White areas indicate missing data.

Figure 7: Distribution of the European LGBTQIA+ Inclusion Index (2020)



The outcome is similar to the analysis carried out in the first edition of the Report:

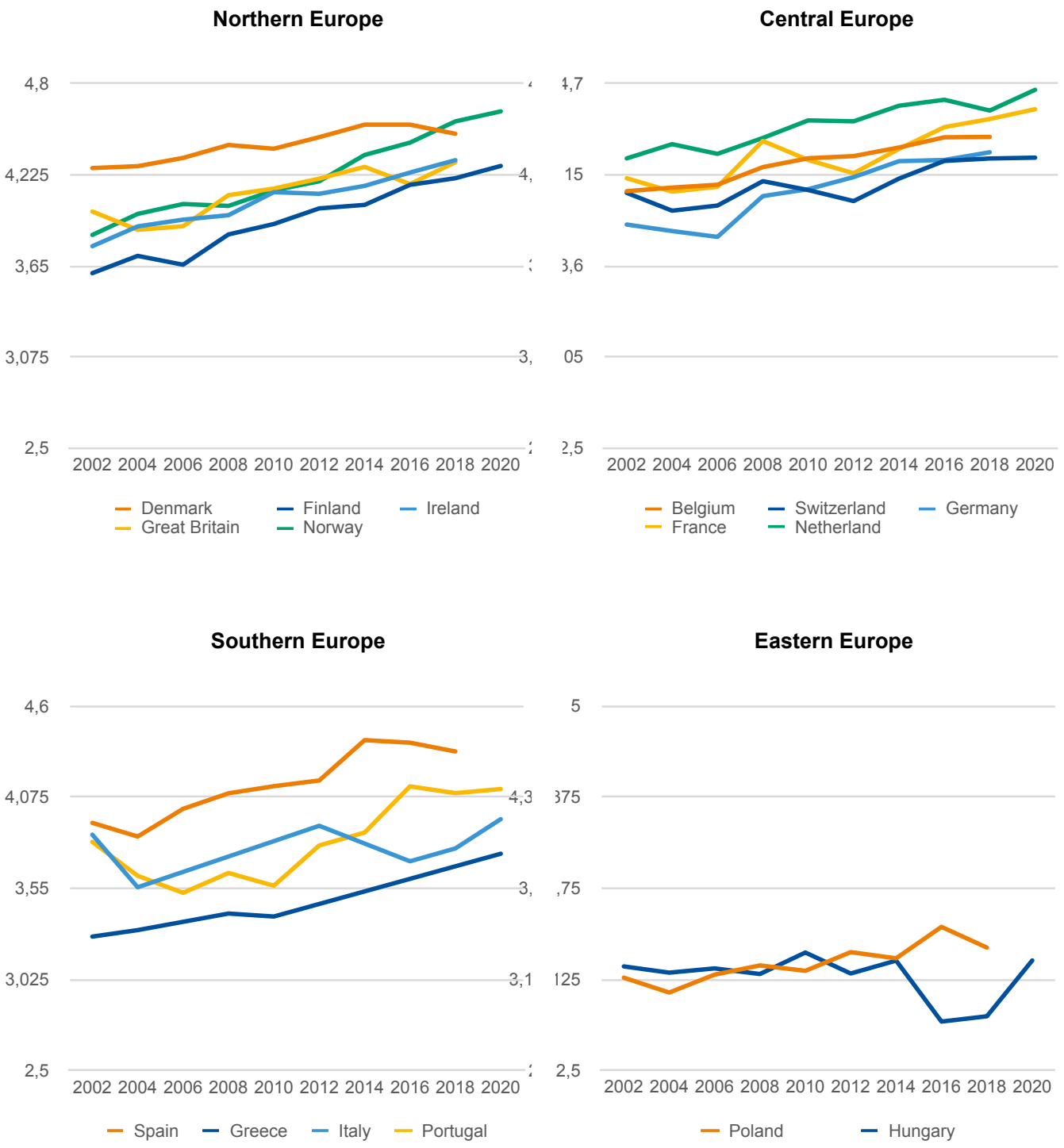
- Iceland, Spain, France, parts of Germany, Luxembourg, the Netherlands and the Scandinavian countries (Finland, Sweden and Norway) are the most LGBTQIA+ inclusive countries;
- Portugal, Italy, Poland, Greece and the Baltic Republics emerge as the least inclusive countries;
- The Italian macro-regions, which exhibit the inclusion divide described in section 3.3.1 appear to align with each other and demonstrate relatively low levels of inclusion compared to other European regions.

Compared to the first edition of the Report, we do not have data for Ireland, the UK and Belgium.

The ESS data provides insights into the temporal evolution of LGBTQIA+ inclusion in the European countries, although with some limitations. Figure 8 displays trends from 2002 to 2020.
Following the relevant literature, we group Northern, Southern, Western and Eastern European countries together[7].

[7] It is only possible to observe the temporal development for the answers to the question 'Homosexual persons should be free to live as they please'. Some observations are missing: for those missing between 2003 and 2019, we have assumed that, in the year not available, the index took an average value between the previous and the following year.

Figure 8: Evolution of the European LGBBTQAI+ inclusion index in Northern, Central, Eastern and Southern Europe



On average, we observe a positive trend across all areas, except for Eastern Europe (ESS provides data for Hungary and Poland).

In **Northern Europe**, Norway and Denmark have been leading in LGBTQIA+ inclusion, although Denmark has seen a decline in recent years. Finland has notably caught up, starting from a lower level than Italy in 2002 to nearly matching Denmark, Great Britain, and Ireland by 2020.

In **Central Europe** a positive trend can be observed, but less marked than in the Nordic countries: the Netherlands is the most inclusive, reaching similar levels as Denmark in 2020. Switzerland, on the other hand, has remained relatively stable in its inclusion index from 2002 to 2020.

Southern Europe exhibits greater diversity among countries, with Spain emerging as the most inclusive. Portugal has shown significant growth, particularly between 2012 and 2020. Greece, although the least inclusive initially, has shown consistent improvement. Italy, however, has seen minimal improvement, maintaining a stable index value between 3.8 and 4, with notable drops in 2002-2004 and after 2012, only recovering in 2016 with the enactment of the Cirinnà Law.

Eastern Europe, i.e. Poland and Hungary, is an unicum. Both countries stand out with lower levels of LGBTQIA+ inclusion compared to other European countries. Until 2014, both countries remained stable, but Hungary experienced a sharp decline afterward, reaching historic lows. Poland, however, has shown some improvement, with a return to previous average levels observed in Hungary by 2020.

4.2 The analysis

Having described the long-term trends of LGBTQIA+ inclusion in Europe, let us return to our original research question: what does greater inclusion of LGBTQIA+ people look like?

We relate the index constructed on ESS data by correlating it with socio-economic development variables.

First we define a **trust index**, obtained by combining several trust variables expressed at the individual level. In the economic literature and in the social sciences, trust in others and in institutions is often used as an approximation of the development of a region or a country and its level of social capital, i.e. the quality of the relationships and relations between people belonging to the same network (Dearmon & Grier, 2009). In particular, the literature has identified social capital as one of the factors that best explain economic growth (Helliwell & Putnam, 1995; Putnam, 1993). Further, trust between individuals is among the variables that best explain social capital (Putnam, 1993). Moreover, trust can also have a direct effect on growth through a reduction in transaction costs and facilitation of negotiations between individuals in the same group (Arrow, 1972), increased information sharing (Fafchamps, 2006) and an increase in the efficiency of the human capital that is created (J. S. Coleman, 1988).

We then select other variables of interest:

- **GDP per capita**, to summarize the level of wealth of a region;
- the **crude net migration rate**, an approximation of the attractiveness of the territory;

- the percentage of the **population** in **education or training** and the percentage of **researchers** in the total workforce, which can capture the level of investment in human and social capital.

Compared to the first edition of the Report, we have added an additional variable, namely the employment rate in high-tech sectors, a measure of the technological and general economic development of a region.

Table 4: Correlation coefficients between European LGBTQIA+ inclusion index and socio-economic development variables.

	Inclusion Index - First Edition (2002-2016)	**Inclusion Index - updated (2018-2020)**
Trust Index	0.47	0.22
GDP per capita	0.58	0.67
Crude net migration rate	0.38	0.34
% pop in training/training	0.49	0.70
% researchers (out of total workers)	0.38	0.28
Employment rate in high-tech sectors	Not available	0.04

In continuity with the results of the first version of the Report we find consistent **positive** coefficients, indicating that regions with greater LGBTQIA+ inclusion also tend to exhibit higher levels of socio-economic development. However, it's important to reiterate that these are correlations, and establishing a causal link in either direction remains elusive.

Compared to the first edition of this study, we observe an increased significance in indicators such as GDP per capita and the percentage of the population engaged in education or training. A lower, though still strongly positive correlation is seen between the inclusion index and the trust index, the percentage of researchers and the rate of net migration (the correlation with the latter variable is plausibly affected by the mobility restrictions imposed by the Covid-19 pandemic, with data referring to the year 2020). The new variable, the employment rate in high-tech sectors, does exhibit significant correlation.

Continuing the approach from the initial version of the Report, we utilize the longitudinal nature of the data to explore correlations between inclusiveness and wealth over time. This enables us to investigate how changes in LGBTQIA+ inclusion may be associated with shifts in economic prosperity across various regions and time periods.

Focusing on the period from 2008 to 2020 and considering only the statement 'Homosexual people should be free to live as they choose' due to data constraints, we define a model to examine whether an increase in the acceptance index in a specific region and year corresponds to subsequent growth in wealth, as measured by GDP per capita, within that same region and year. This analysis provides valuable insights into the potential economic implications of LGBTQIA+ inclusion over time across different geographic areas.. The geographical unit of analysis is NUTS2 in most cases, replaced by NUTS1 in cases where data at a more granular level are not available.

Our model thus seeks to observe whether an increase in the acceptance index in NUTS2 region i in year t is matched by an increase in wealth, expressed as GDP per capita, also in region i in year t.

$$PILprocapite_{it} = \alpha_{it} + \beta * accettazione_{it} + \gamma_t + \delta_c + \epsilon_{it}$$

The parameters γt and δc capture temporal trends and idiosyncratic country characteristics, respectively, and thus allow us to analyse the correlations between acceptance and GDP per capita without these being influenced by fixed, unobservable temporal or geographical characteristics. Both variables of interest were standardized in order to facilitate interpretation of the results.

In a second specification of the model we also include the trust index as an independent variable. This addition allows us to observe the correlation between acceptance and wealth while treating the trust index as a constant, given its correlation with wealth.

	GDP per capita	
	First specification	**Second specification**
Acceptance Index	0.086	0.263
Confidence Index	No	Sì

In both specifications, the correlation between acceptance and GDP per capita is positive and significant at 10%[8]. Again, the analysis identifies a mere correlation and does not explore causal links.

In the model treating the effect of the confidence index as constant, the **correlation increases from 0.125 (in the first edition of the study) to 0.263**. Without considering this adjustment, the correlation remains positive but slightly lower at 0.086.

[8] That is, there is a 10% or lower probability that the observed correlation between two variables is due to chance or randomness.

CONCLUSIONS

In the second edition of the Report, our analysis at both the Italian and European levels reinforces the significance of LGBTQIA+ inclusion as a catalyst for territorial development.

At the Italian level, our LGBTQIA+ inclusion index, derived from civil union data between 2017 and 2021, showed positive correlations with average income and various demographic and labor market development indicators, while displaying a negative correlation with levels of inequality. Additionally, our analysis revealed a positive relationship between LGBTQIA+ inclusion and the attractiveness of territories, irrespective of their economic fundamentals.

The inclusion of an analysis capturing the tone and emotions of public discourse on LGBTQIA+ issues further enriched our understanding of the state of minority inclusion across different Italian territories.

Expanding our analysis to the European level, we integrated 2020 data from the European Social Survey with our inclusion index, uncovering a general improvement in LGBTQIA+ inclusion across Europe, albeit with notable differences in trends among countries. Furthermore, we confirmed a positive correlation between inclusion and socio-economic development indicators at the European level.

These findings underscore the importance of advocating for LGBTQIA+ inclusion to drive territorial development while emphasizing the necessity of monitoring public discourse to better comprehend and analyze the social and political dynamics surrounding minority inclusion.

BIBLIOGRAPHY

Ager, P. & Brückner, M. (2013). Cultural diversity and economic growth: Evidence from the US during the age of mass migration. European Economic Review, 64, 76-97.

Amis, L. (2011). A Guide for Business: How to develop a human rights Policy. New York: United Nations, 2015.

Andrienko, Y. & Guriev, S. (2004). Determinants of interregional mobility in Russia: Evidence from panel data. Economics of Transition, 12(1), 1-27.

Anelli, M., Basso, G., Ippedico, G. & Peri, G. (2019). Youth drain, entrepreneurship and innovation (Tech. rep.). National Bureau of Economic Research.

Arrow, K. J. (1972). Models of job discrimination. Racial discrimination in economic life, 83.

Badgett, M. V. L., Nezhad, S., Waaldijk, C., Meulen, R. Y. Et al. (2014). The relationship between LGBT inclusion and economic development: An analysis of emerging economies.

Badgett, M. L. (2020). The Economic Case for LGBT Equality: Why Fair and Equal Treatment Benefits Us All. Beacon Press.

Becker, G. (1971). The Economics of Discrimination (2nd ed.). University of Chicago Press.

Bianchi, F., Nozza, D., & Hovy, D. (2021). FEEL-IT: Emotion and sentiment classification for the Italian language. In Proceedings of the eleventh workshop on computational approaches to subjectivity, sentiment and social media analysis. Association for Computational Linguistics.

Botti, F. & D'Ippoliti, C. (2014). Don't ask don't tell (that you're poor). Sexual orientation and social exclusion in Italy. Journal of Behavioral and Experimental Economics, 49, 8-25.

Bove, V. & Elia, L. (2017). Migration, diversity, and economic growth. World Development, 89, 227-239.

Card, D. (2001). Immigrant inflows, native outflows, and the local labor market impacts of higher immigration. Journal of Labor Economics, 19(1), 22-64.

Carroll, A. & Itaborahy, L. P. (2015). International Lesbian, Gay, Bisexual, Trans and Intersex Association. State Sponsored Homophobia 2015: A World Survey of Laws: Criminalisation, Protection, and Recognition of Same-Sex Love.

Coleman, J. S. (1988). Social capital in the creation of human capital. American journal of sociology, 94, S95-S120.

Dearmon, J. & Grier, K. (2009). Trust and development. Journal of Economic Behavior & Organization, 71(2), 210-220.

ESS. (2016). ESS Round 8: European Social Survey Round 8 Data (2016).

ESS. (2020). ESS Round 10: European Social Survey Round 10 Data (2020).

Fafchamps, M. (2006). Development and social capital. The Journal of Development Studies, 42(7), 1180-1198.

Fidas, D., Cooper, L. & Raspanti, J. (2014). The cost of the closet and the rewards of inclusion: Why the workplace environment for LGBT people matters to employers. Human Rights Campaign Foundation, 1-25.

Flores, A., Park, A. & Badgett, M. (2018). New measures of LGBT acceptance and inclusion worldwide. Los Angeles: the Williams Institute.
Hietanen, M., & Eddebo, J. (2023). Towards a definition of hate speech-with a focus on online contexts. Journal of communication Inquiry, 47(4), 440-458.

IPSOS. (2023). LGBT+ Pride 2023: A 30-Country Ipsos Global Advisor Survey.

ISTAT. (2022). The ISTAT-UNAR survey on employment discrimination against LGBT+ people (in a civil union or already in a union).

Kite, M. E. & Whitley, B. E. (1996). Sex differences in attitudes toward homosexual persons, behaviors, and civil rights a meta-analysis. Personality and Social Psychology Bulletin, 22(4), 336-353.

Manning, A. & Petrongolo, B. (2017). How local are labour markets? Evidence from a spatial job search model. American Economic Review, 107(10), 2877-2907.

Mares, R. (2011). The UN guiding principles on business and human rights: foundations and implementation. Martinus Nijhoff Publishers.

Meyer, I. H. (1995). Minority stress and mental health in gay men. Journal of health and social behaviour, 38-56.

Moscati, M. F. (2010). Trajectory of reform: catholicism, the state and the civil society in the development of LGBT rights [Number: 1 Publisher: Springer Verlag]. Liverpool Law Review, 31(1), 51-68.

Newcomb, M. E., & Mustanski, B. (2010). Internalized homophobia and internalizing mental health problems: A meta-analytic review. Clinical psychology review, 30(8), 1019-1029.

Nozza, D., Bianchi, F., & Attanasio, G. (2022). HATE-ITA: hate speech detection in Italian social media text. In Proceedings of the Sixth Workshop on Online Abuse and Harms (WOAH). Association for Computational Linguistics.

OECD. (2019). Society at glance 2019. OECD Publishing.

OECD, ILO & The World Bank. (2015). The contribution of Labour Mobility to Economic Growth. Turkey G20., (September), 3-4.
Openpolis (2022). What hate speech is and how it is regulated.

Ottaviano, G. I. & Peri, G. (2006). The economic value of cultural diversity: evidence from US cities. Journal of Economic geography, 6(1), 9-44.

Patacchina, E., Ragusa, G. & Zenou, Y. (2012). Unexplored Dimensions of Discrimination in Europe: Homosexuality and Physical Appearance.

Pichler, S., Blazovich, J. L., Cook, K. A., Huston, J. M. & Strawser, W. R. (2016). Do LGBTsupportive Corporate Policies Enhance Firm Performance? Human Resource Management.

Putnam, R. (1993). Making democracy work Princeton University Press. Princeton NJ.

Rock, D. & Grant, H. (2016). Why diverse teams are smarter. Harvard Business Review, 4(4), 2-5.

Schöne J.P., Parkinson B., Goldenberg A. (2021) Negativity Spreads More than Positivity on Twitter After Both Positive and Negative Political Situations. Affect Sci. 12;2(4):379-390. PMID: 36043036; PMCID: PMC9383030.

Sellars, A. (2016). Defining hate speech. Berkman Klein Center Research Publication, (2016-20), 16-48.

Suedekum, J., Wolf, K. & Blien, U. (2014). Cultural diversity and local labour markets. Regional Studies, 48(1), 173-191.

Suler, J. (2004). The Online Disinhibition Effect. CyberPsychology & Behavior, 7(3), 321-326.

Tinagli, I. & Florida, R. L. (2004). Europe in the creative age. Carnegie Mellon Software Industry Center.

Tinagli, I. & Florida, R. L. (2005). Italy in the creative age. Creativity Group Europe Milan.

UN. (2017). Tackling Discrimination against Lesbian, Gay, Bi, Trans, Intersex People. UN Publications.

Vu, T.V. (2022). Linking LGBT inclusion and national innovative capacity. Soc Indic Res 159, 191-214 .

APPENDIX

Details of the NPL models used in the Repor

Natural Language Processing (NLP) is a branch of Deep Learning focused on training algorithms to understand, analyze and generate written and spoken language. Some of the many applications of these models are the recognition and generation of written language, the creation of chatbots (e.g. ChatGPT) and sentiment analysis, i.e. the analysis of sentiments expressed in a written text.

There are two models used in the report, both from the MilaNLProc research group.

The first is FEEL-IT, a sentiment and emotion analysis model derived from the BERT (Bidirectional Encoder Representations from Transformers) family of language models. FEEL-IT allows us to predict sentiments (a general attitude or opinion, classified as positive, neutral or negative) and emotions (specific and identifiable emotions, in this case anger, fear, joy and sadness) in texts by training prediction models on a corpus of tweets in Italian. This dataset was manually extracted by the researchers: 1,000 tweets were collected every day relating to trending topics on the social network, thus obtaining a very heterogeneous sample, with topics ranging from football to politics. Subsequently, the researchers manually annotated the tweets characterised by the expression of recognisable emotions, producing a dataset of 2,037 annotated tweets: 912 of **anger**, 103 of **fear**, 728 of **joy** and 294 of **sadness**, the four emotions of interest.

The second model is *HATE-ITA*, a hate speech detection model. The model is able to classify tweets in a binary way (hate/non-hate). The researchers used language-independent representations and functional tests, overcoming previous limitations by training on multiple languages. The model was refined using a large dataset of hate speech data in English and Italian, producing a set of techniques for hate speech detection in Italian (HATE-ITA). By using both English and Italian data, the model significantly improves performance compared to training on Italian-only data. For the training of the model, the researchers selected six attributes based on the type of discrimination: ethnic origin, gender identity, sexual orientation, religion and disability
Riportiamo di seguito alcuni esempi di emotion detection (FEEL-IT) e hate speech detection (HATE-ITA):

Below are some examples of emotion detection (FEEL-IT) and hate speech detection (HATE-ITA):

FEEL-IT:

Example	Emotion
Pagliacci ammaestrati dal Grillo parlante di Pinocchio *They are buffoons controlled by Pinocchio's Jiminy Cricket*	*anger*
Non ci sto dormendo la notte. #22Agosto #COVID19 *This does not make me sleep at night. #22August #COVID19*	*fear*
Adoro questa canzone, è una delle mie preferite STREAM ICARUS FALLS *I love this song, it's one of my favourite STREAM ICARUS FALLS*	*joy*
I brividi. Come si può spegnere una vita con così tanta facilità? Non ho parole.... *I got chills. How can you kill someone so easily? I do not know what to say....*	*sadness*

Table 2: Examples of FEEL-IT annotations. English translations are reported in italic.

Source: Bianchi, F., Nozza, D., & Hovy, D. (2021). FEEL-IT: Emotion and sentiment classification for the Italian language. In Proceedings of the eleventh workshop on computational approaches to subjectivity, sentiment and social media analysis. Association for Computational Linguistics.

The emotion, positive or negative, is shown in the table next to the examples.

HATE-ITA:

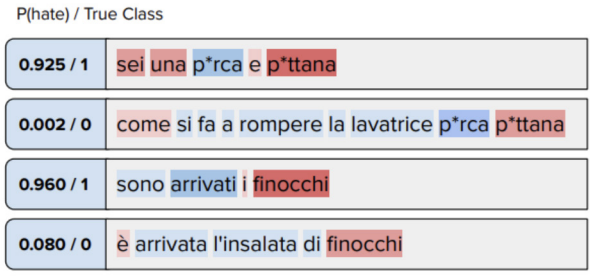


Figure 1: Examples of predictions with SHAP (Lundberg and Lee, 2017) contributions on a color scale; color scale: blue (not-hate), red (hate). Translation available in Appendix B.

Source: Nozza, D., Bianchi, F., & Attanasio, G. (2022). HATE-ITA: hate speech detection in Italian social media text. In Proceedings of the Sixth Workshop on Online Abuse and Harms (WOAH). Association for Computational Linguistics.

The model identifies the first and third as hate tweets while correctly excluding the second and fourth.

To select only hate tweets referring to the LGBT+ community, we kept the tweets containing the following terms:

'gay',	'genderqueer',	'polysexual',
'faggots*',	'fluid genre',	'homoromantic',
'faggots*',	'genderfluid',	'heteroromantic',
'invertit*',	'asexual',	'biromantic',
'ricchion*',	'asexuality',	'panromantic',
'sissy',	'pansex',	'aromantic',
'effeminate',	'pansexual',	'coming out',
'queer',	'intersex',	'transition',
'butthead',	'Interesting',	'gender bender',
'trumpet',	'gender non-conforming',	'ftm', # Female to Male
'soffiommo',	'androgynous',	'mtf', # Male to Female
'culandra',	'twospirit',	'pride',
'culander',	'two-spirit',	'gender inclusiveness',
'faggot',	'homophobia',	'dysphoria',
'lesbian',	'transphobia',	'dysphoria',
'bisexual',	'queerphobia',	'gender affirmation',
'transgender',	'bigender',	'Sexual reassignment surgery',
'transsexual',	'drag queen',	'hormone therapy',
'queer',	'drag king',	'gender diverse',
'homosexual',	'crossdresser',	'gender identity',
'lgbt',	'trans man',	'sexual orientation',
'lgbtq',	'trans woman',	'homogeny',
'lgbtq+',	'trans*',	'egalitarian marriage',
'lgbti',	'demisex',	'lgbt rights',
'lgbtia',	'demisexual',	'third sex',
'cisgender',	'agender',	
'non-binary',		
'non-binary',		

* The asterisk indicates all terms beginning with those letters regardless of the suffix.

Contacts

Tortuga
The first think-tank in Italy composed of young researchers and students from the world of economics and social sciences. At the service of citizens, enterprises and institutions.

EDGE
A non-profit organisation bringing together key people from the Italian LGBTQIA+ community and their allies – entrepreneurs, managers, professionals. An Action Tank.

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