

D1.5

Data Clustering Report

Lessons from Media History



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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004488

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Document information

Grant Agreement #:	101004488
Project Title:	EUROPEAN MEDIA PLATFORMS: ASSESSING POSITIVE AND NEGATIVE EXTERNALITIES FOR EUROPEAN CULTURE
Project Acronym:	EUMEPLAT
Project Start Date:	01/03/2021
Related work package:	WP1 – Europeanisation: Lessons from Media History
Related task(s):	T1.5 – Data Clustering
Lead Organisation:	P8 – NUKA
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Status	Final
Submission date:	28/02/2022
Dissemination Level:	Public

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1 Introduction

Media geography, per se, is hardly a new idea. It has been repeatedly called for in the last decades, and the diffusion of the Internet has brought with it some attention for the patterns of global inequality and the cartography of the infrastructure. This notwithstanding, we have reason to believe that a proper understanding of media geography – and what geographical maps have really to tell – is yet to come. Here we will explain the main motivations and goals which have led us to concentrate our aggregate analysis and data clustering on this kind of visualization.

As odd as it may seem, media geography is commonly practiced, even at the highest levels of investigation, with no displaying of maps¹. Relevant publications whose title literally refers to geography, for instance, do not present any chart² – including a 300-page edited book, explicitly calling for a “spatial turn in media studies”³. Widening the lines of geo-cultural analysis beyond our usual horizon is a well-accepted statement – whether in terms of *internationalizing or de-westernizing media studies*⁴ – but it has come without a reflection on the main tool of geographic modeling. In the 1,600-page, three-volume foundational treaty on the network society, which is very much about global spatial patterns, there is only one map – a *diagram*, showing the multimodal connectivity in the region of the Pearl River Delta⁵. And it is a fact that in the whole macro-text of the platform society and economy – which is close to the field of infrastructure studies, as the spatial form plays an even major role – spatial visualizations are not used at all⁶.

¹ See, for instance, *The Ashgate Research Companion to Media Geography*, edited by P.C. Adams, J. Craine & J. Dittmer, London and New York, Routledge, 2014.

² K. Robins & A. Torchi, *Geografia dei media*, Bologna, Baskerville, 1993; A. Cole, *Distant Neighbours: the new geography of animated film production in Europe*, “Regional Studies”, 42, 6, 2008, 891-904; J. Finn & J. Palis, *Introduction: The medium, the message, and media geography in the 21st century*, “GeoJournal”, 80, 2015, 781-790; S. Zimmermann, *Media Geography: Always Part of the Game*, “Aether: The Journal of Media Geography”, 1, 2007, 59-62; R. Lobato, *Netflix Nations. The Geography of Digital Distribution*, New York, NYU Press, 2019; *Geographies of digital culture*, edited by T. Felgenhauer & K. Gäbler, New York, Routledge, 2018.

³ *Geographies of Communication: The Spatial Turn in Media Studies*, edited by J. Falkenheimer & A. Jansson, Göteborg, Nordicom, 2006, 29-44.

⁴ *De-Westernizing Media Studies*, edited by J. Curran & M. Park, London and New York, Routledge, 2000; *Internationalizing Media Studies*, edited by D.K. Thussu, London and New York, Routledge, 2009.

⁵ M. Castells, *The Rise of the Network Society*, Oxford, Blackwell, 1996, pp. 435-436.

⁶ I am referring to B. Bratton, *The Stack. On Software and Sovereignty*, Cambridge and London, MIT Press, 2015; M. De Reuver, C. Sorensen & M.H. Basole M. H., *The Digital Platform: A Research Agenda*, “Journal of Information Technology”, 33, 2, 2018, 124-135; T. Gillespie, *The politics of “platforms”*, “New Media & Society”, 12, 3, 2010, 347-364; T. Gillespie, *Custodians of the Internet: Platforms, Content Moderation, and the Hidden Decisions that Shape Social Media*, New Haven and London, Yale University Press, 2018;

A. Helmond, *The Platformization of the Web: Making Web Data Platform Ready*, “Social Media + Society”, 1, 2, 2015; M. Kenney & J. Zysman, *The Rise of the Platform Economy*, “Issues in Science and Technology”, Spring 2016, 61-69; J.-C. Plantin, C. Lagoze & P.N. Edwards, *Infrastructural Studies meet platform studies in the age of Google and Facebook*, “New Media & Society”, 20, 1, 2016, 293-310; N. Srnicek, *Platform capitalism*, London, Polity, 2017; J. Van Dijck, T. Poell & M. de Waal, *The Platform Society: Public Values in a Connective World*, New

If we go backward in media history, the approach defined by Hallin and Mancini has produced seminal results and opened a new field for comparative studies⁷: nonetheless, their notion of system relies on an abstract, even normative notion of spatiality, which has been seldom put to the test of grounded evidence (and, even in the most advanced cases, with no geographical patterns showed⁸). Even worst is the case of Siebert, Peterson, and Schramm's study of press systems - on which Mancini and Hallin's work is premised – in which there is no geographical sensibility at all, as it is even drenched in stereotypical ideas about non-Western countries⁹. Also based on an overview of the main contributions in this field – the applications of Mancini and Hallin's framework, and the EuroMedia research series – we can say that geographic charts did not catch the eye of media scholars. With the relevant exception of Franco Moretti's *Atlas of European Novel*, that we will mention again, cartography is also absent in the works from which we took inspiration for the EUMEPLAT project itself: at the divulgation level, Frédéric Martel's recognition on global communication trends¹⁰; at a more advanced level, Donald Sassoon's¹¹ and Jérôme Bourdon's¹² comparative analyses of European media and cultural markets. As absent as it is in geography of culture at large, the use of maps is more frequent in infrastructure studies, from Peter Hugill's history of the telegraph¹³ to the Internet geography advocated by the Oxford Internet Institute. Even in Mark Graham's production, though, maps are not as diriment as it might be expected – and in some cases not even present¹⁴.

York, Oxford University Press, 2018; S. Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. London, Public Affairs, 2019.

⁷ D. C. Hallin & P. Mancini, *Comparing Media Systems. Three Models of Media and Politics*, Cambridge, Cambridge University Press, 2004; *Comparing Media Systems Beyond the Western World*, edited by D.C. Hallin & P. Mancini, Cambridge, Cambridge University Press, 2012.

⁸ See M. Brüggermann E. Humprecht & S. Engesser S., *Hallin and Mancini revisited: Four empirical types of Western media systems*, "Journal of Communication", 64, 6, 2014, 1037-1065; L. Castro Herrero & others, *Rethinking Hallin and Mancini Beyond the West: An Analysis of Media Systems in Central and Eastern Europe*, "International Journal of Communication", 11, 2017; 4797–4823; B. Dobek-Ostrowska, *25 years after communism: Four models of media and politics in Central and Eastern Europe*, in *Democracy and Media in Eastern and Central Media 25 Years On*, edited by B. Dobek-Ostrowska & M. Glowacki, New York, Peter Lang, 2015, 11-45; Z. Peruško, D. Vozab & A. Čuvalo, *Digital Mediascape, Institutional Framework, and Audience Practices Across Europe*, "International Journal of Communication", 9, 2015, 342-364; Z. Peruško, D. Vozab & A. Čuvalo, *Comparing Post-Socialist Media Systems. The Case of Southeast Europe*, London and New York, Routledge, 2021.

⁹ F. S. Siebert, T. Peterson & W. Schramm, *Four Theories of the Press: The Authoritarian, Libertarian, Social Responsibility, and Soviet Communist Concepts of What the Press Should Be and Do*, Chicago, University of Illinois Press, 1963.

¹⁰ F. Martel, *Mainstream. Enquête sur la culture qui plaît à tout le monde*, Paris, Flammarion, 2010; F. Martel, *Smart. Ces internets qui nous rendent intelligent*, Paris, Flammarion, 2015.

¹¹ D. Sassoon, *The Culture of the Europeans. From 1800 to the Present*, London, Harper Collins, 2006.

¹² J. Bourdon, *Du service public à la télé-réalité. Une histoire culturelle des télévisions européennes 1950-2010*, Paris, INA, 2011.

¹³ P.J. Hugill, *Global Communications Since 1844: Geopolitics and Technology*, Baltimore, Johns Hopkins University Press, 1999.

¹⁴ For instance, M. Graham, *Warped Geographies of Development: The Internet and Theories of Economic Development*, "Geography Compass", 2, 3, 2008, 771-789; M. Graham, *Featured graphic: Digital Divide: The Geography of Internet Access*, "Environmental Planning", 44, 2012, 1009-1010; M. Graham, M. Stevens & S. Hale, *Featured graphic. Mapping the geoweb: a geography of Twitter*, "Environmental Planning", 44, 2013, 100-102; M. Graham [ed.], *Digital Economies at Global Margins*, Cambridge, MIT Press, 2019. Geographical mapping is used in H. Blank, M. Graham & C. Calvino, *Local Geographies of Digital Inequality*, "Social Science Computer Review",

One of the main challenges for our project is taking the knowledge to a next level. Here the use of geographical visualization can become productive, for the goal of coming out with analytical maps of different media markets. In the project proposal we mentioned what geographers call the “pattern analysis approach”: the drawing of area-class maps, showing the distribution of given factors in a specific spatial context, and with respect to a given set of variables¹⁵. These data-driven maps are used for measuring the dispersion of selected factors in contiguous geographic areas, and they can be applied to both the diffusion of technological devices and the distribution of cultural contents in different markets. Here we will provide a first assessment of this research strand.

1.1 The Need for Geographical Visualizations

Truth being spoken, there is a good reason not to use geographical maps: they often seem *pointless*, and they barely add anything to textual explanation. In terms of cognitive models, this may well be part of the conflict between *word* and *image* – with the first taking the center of the scene, and still, the latter not being reducible to the former. Even the postmodernist critiques of the power implications of the mapping, to just cite an example, often use words, without making any space for the visualization of the object itself¹⁶. As irresolvable as this dilemma can be, we will take a more pragmatic stand, by shortly discussing three maps that, to a different extent, come in handy exactly because they produce little or no improvement in knowledge. The first one is part of our dataset and shows the state of mobile broadband subscriptions in Europe; the second one, often used by Mark Graham (among many others), describes the world inequalities in the diffusion of the web; and the third is the already cited diagram of the infrastructures in Southern China, presented by Manuel Castells.

36, 1, 2018, 82-102 [at pp. 91-93 and 96-96]; M. Graham, *Internet Geographies: Data Shadows and Digital Divisions of Labour*, in *Society and the Internet: How Networks of Information and Communication are Changing our Lives*, edited by M. Graham and W. H. Dutton, Oxford, Oxford University Press, 2014, 99-116 [at pp. 110-116]; M. Graham, S. de Sabbata & M.A. Zook, *Towards a Study of information geographies: (im)mutable augmentations and a mapping of the geographies of information*, “Geography and Environment”, 2, 2015, 88-105 [at pp. 92-97, 99-101].

¹⁵ E.A. Williams & E. Wentz, *Pattern Analysis Based on Type, Orientation, Size, and Shape*, “Geographical Analysis”, 40, 2, 2008, 97-122.

¹⁶ For instance, J.B. Harley, *Deconstructing the Map*, “Cartographica”, 26, 2, 1989, 1-20.

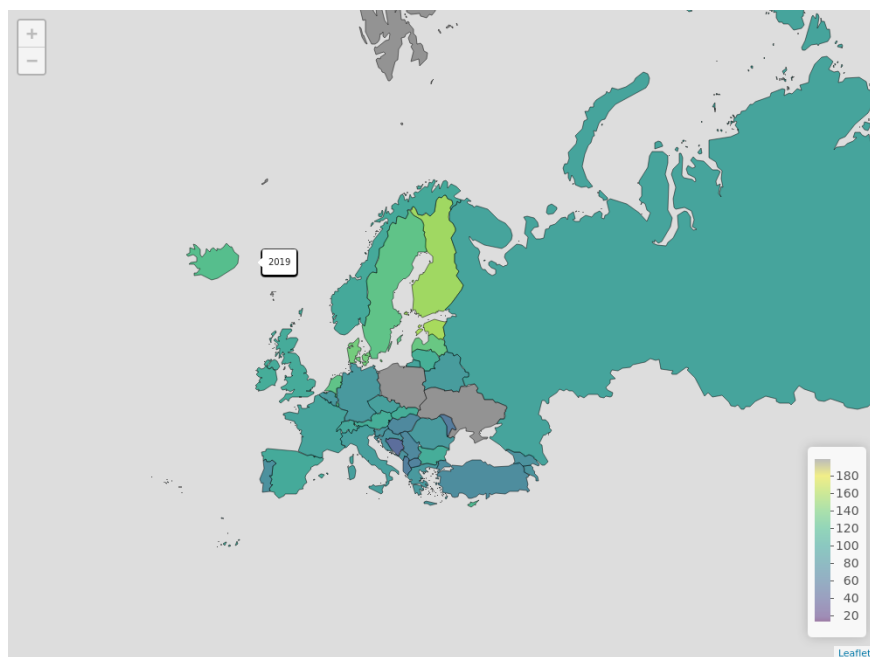


Figure 1. Broadband mobile connections in Europe, 2019.
Source: EUMEPLAT elaboration

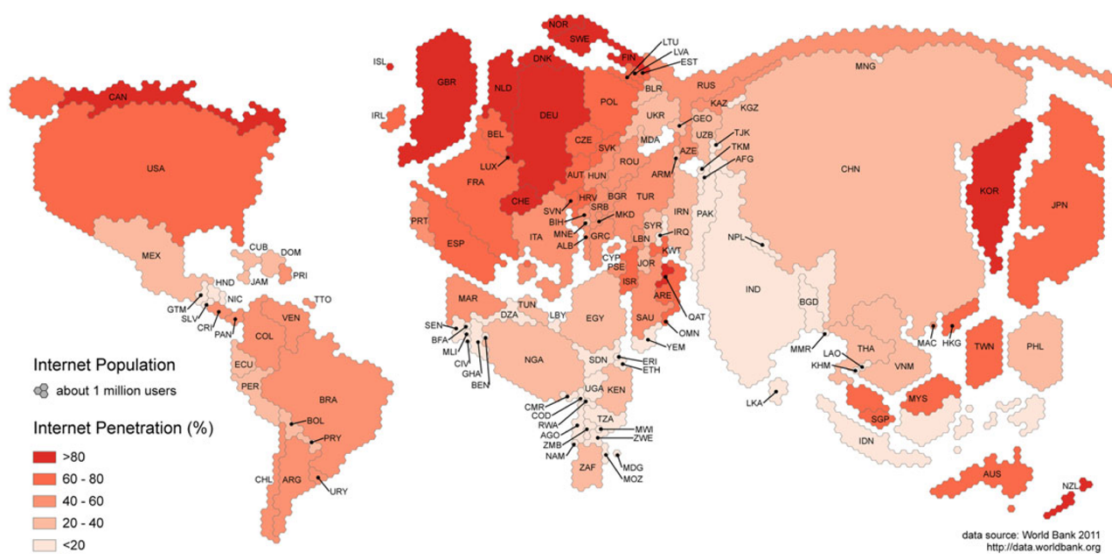


Figure 1 Internet users by country

Figure 2. The diffusion of the Web in 2011.
Source: Oxford Internet Institute

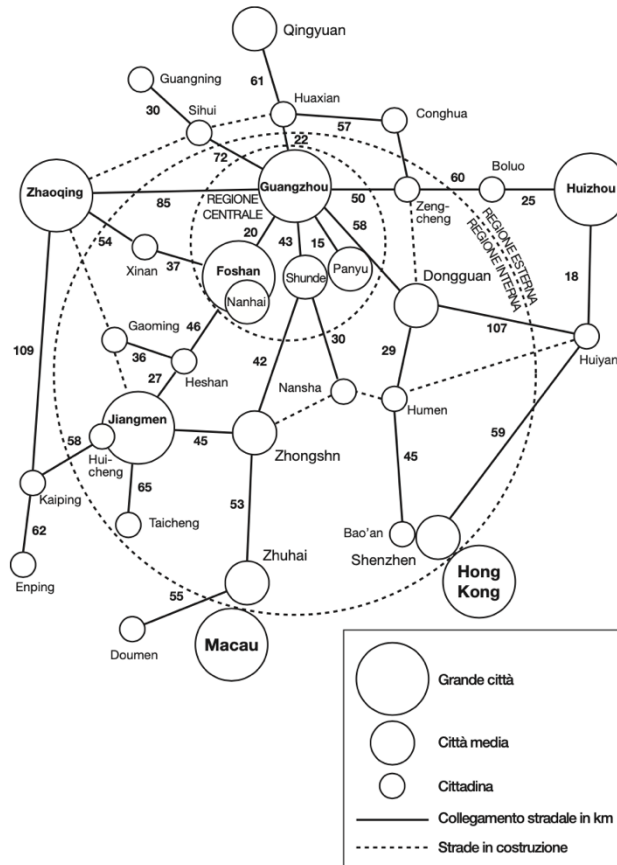


Figure 3. Integrated markets and infrastructures in the Pearl River Delta area in the 1990s.
Source: M. Castells, *The Rise of the Network Society*, 1996

The three charts are very different from each other, and those differences are relevant to our methodological inquiry. In the first case, we see Europe as it is – which means as it is conventionally *represented*. In the second case the world is taking an alternative shape, due to a common visualization technique: the dimensions of the countries are stretched or squeezed, proportionally to a given set of variables (here, the Internet diffusion). The third example takes it to the next level of abstraction, with the physical territory disappearing and being replaced by a diagram: more *geometry* than geography, as one can infer from its linearity and precision. In the first case, we have the common representation of the world, which is hardly carrying meaningful information: what we see is the universal success of mobile communication, along with the higher connectivity of the Nordics. In the other two cases, quite the opposite, the map is overwritten in order to *force* it to mean something – the plain existence of digital divide; or the fast development of the Chinese economy. A first problem arises, here, which has to do with the mapping procedure as such: shall we consider the chart as a static or as a dynamic object; as an *arrival* point or as a *starting* point? The second problem is rather common to the three charts, besides the technical details: in all cases, they basically provide a confirmation of what we expected. As a matter of fact, we put in those maps *what we already*

knew in advance: again, the spread of mobile communication; the digital divide; the Chinese way to infrastructures.

In looking for a solution, we can refer to the great model of historical geography, Fernand Braudel's *La Méditerranée*, whose method is based on two main assumptions. Firstly, combining geography and history requires the understanding of both natural and human factors: or the shift from the *environment* to the *milieu*, that is constantly shaped by social forces, rather than being given once for all. "Geographical inquiry", Braudel states, "has to scan-ray the whole thickness of social questions"¹⁷. Secondly, and for this goal, geography ceases to be and end in itself and becomes "a means to an end", starting with the detecting of world-system economic patterns¹⁸. This is what probably Franco Moretti had in mind, while observing that in the history of culture maps "are colorful appendixes, that don't intervene in the interpretive process"; rather, they usually appear "at the end of the text", and "when the discourse is over, done with". And then:

*Placing a literary phenomenon in its specific space – mapping it – is not the conclusion of the geographical work; it's the beginning. After which begins in fact the most challenging part of the whole enterprise: one look at the map, and thinks*¹⁹.

Moretti is probably right, here, as there is a likely risk of making a decorative use of geographical maps. Hence his work on the spatial patterns of modern literature, which takes for serious Braudel's (and Bourdieu's) idea of *milieu* and reflects on both the diffusion of the books in the real geography, and the symbolic geography of Europe as it has been redrawn by tragedies, novels, and tales²⁰ – on the form as "due to the action of force", according to his favorite quote from D'Arcy Thompson²¹.

This is probably the most frequent mistake in all exercises in geography of culture, including ours: considering the map as the final step, and putting there all ideas previously elaborated. More academically, a distinction is necessary between the map and the geographical visualization, which has been proposed by MacEachren and Taylor in their classical work. The map, properly speaking, reproduces something that is already known, for showing it to the final users – and it is therefore *public* in nature. The geographical visualization, on the other way, uses the map as a tool for discovering something unknown: it is firstly a *private* document, hence, as only researchers can access it and possibly make sense out of it²². With this category, therefore, we refer to

¹⁷ F. Braudel, *La géographie face aux sciences humaines*, "Annales", 6, 4, 1951, p. 491.

¹⁸ F. Braudel, *The Mediterranean and the Mediterranean World in the Age of Philip II* [1949], London, Fontana Press, 1972, p. 23.

¹⁹ F. Moretti, *Atlas of the European Novel 1800-1900*, London and New York, Verso, 1998, p. 7.

²⁰ See also F. Moretti, *Graphs Maps Trees. Abstract Models for a Literary Theory*, London and New York, Verso, 2005.

²¹ D.D. Thompson, *On Growth and Form*, Cambridge, Cambridge University Press, 1917, p.11

²² A.M. MacEachren, *Visualization in Modern Cartography: Setting the Agenda*, in *Visualization in Modern Cartography*, edited by A.M. MacEachren & D.R. Fraser Taylor, Oxford, Pergamon, 1994, p. 3.

“the ability of maps, graphics and images to make visible spatial relationships. As such one of its primary objectives is the very geographical desire to find spatial patterns in the data. To some extent, visualization is what cartographers have been doing all along in the sense of making aspects of the world visible, but there are important differences²³.”

What is more, geo-cultural maps can make new spatial relationships emerge: they can account for the possible reshaping of Europe due to cultural exchanges, rather than reproducing the way Europe used to be - in the age of national states, and classical cartography. As Emanuela Casti put it,

“institutions – notably the European Union – sanctioned the political role of landscape: its importance in creating a sense of belonging and in building an open and mobile citizenship (conveyed mainly by chora) against the birthplace-bound notion of the past (expressed mostly by topos)²⁴.”

Which result would eventually take shape is not easy to predict, though: at a first glance, in many cases no clear patterns appear. Movie attendance data, for instance [map 4], define a strange geography, with a bunch of countries above the EU average – Iceland, Ireland, UK, Norway, Spain, Denmark, and predictably France – and significantly less spectators in other countries, whether they are in Eastern, Southern, Central, or Northern Europe. What these figures will never show is the reason for such distribution: as a matter of fact, the relatively low movie attendance in Sweden would require a *different* explanation from the relatively low movie attendance in Italy – no matter how similar the data may be.

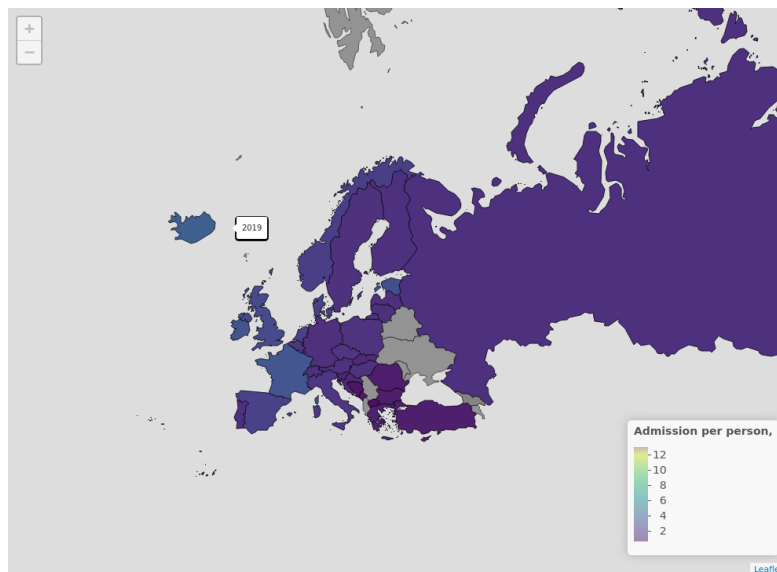


Figure 4. Movie admission per person, 2019.
Source: EUMEPLAT elaboration

²³ J.W. Crampton, *Maps as social constructions: power, communication and visualization*, “Progress in Human Geography”, 25, 2, 2001, p. 244.

²⁴ E. Casti, *Reflexive Cartography. A New Perspective on Mapping*, Amsterdam, Elsevier, 2015, p. 31.

Geography is a *means* to an end, rather than to the end in itself, according to Braudel; the map marks the *beginning* of theoretical investigation, in Moretti; and now, we see that its scope is to *make visible* some hidden patterns. But how to do so?

The move from geographical maps to geographical visualizations is the first step: after that, questions arise about which values are to be selected and screened. The idea is that of using very basic indicators: as Moretti put it, the success of the whole operation is “directly proportional to the simplicity and the abundance of the data”, as it relies on a preliminary effort of “abstraction and quantification”²⁵. We put the data on the chart, in other words, and we look for any pattern to emerge: once again, Braudel’s lesson comes to mind, which insists on geography being a means to an end, and a tool for non-geographical investigations. Or, in more contemporary words:

*Understanding and quantifying patterns also lends insight into spatial processes and changes in these processes that may have led to the existing patterns. Pattern analysis is commonly performed with a metric that describes the spatial distribution of a nonspatial variable of interest*²⁶.

Searching for patterns, in our case, requires a preliminary assumption: that Europe is a relatively homogenous area, at least in terms of technological equipment, and when compared to the global scale of other world-systems. Exactly for this reason, though, it is more necessary to pay attention to *inhomogeneity*, to the exceptions to the rule, which may reveal something about the overall organization of media markets.

1.2 The EUMEPLAT Interactive Dashboard

In this report, we show (geo)graphical representations extracted from the interactive dashboard publicly available at <https://eumeplat.shinyapps.io/EumeplatDashboard/>. It is possible to interact with maps and plots, selecting the year of interest and the country. In specific cases, the direct comparison of two countries is enabled. All the maps and plots can be also downloaded as static images for further use and dissemination.

In the following we will show some extracts of what is available on the online dashboard: in Section 2 we offer an overview of the **press** sector, while in Section 3 on the **radio**; in Section 4 we report an analysis on traditional **TV**, while in Section 5 we focus on **Pay-TV** and **OTT**. In Section 6 we provide insights on the **Internet** and **Communication**, and we offer an overview on **movies** in Section 7. Finally, we draw some conclusions and describe the data sources.

²⁵ F. Moretti, *Atlas of the European Novel 1800-1900*, pp. 4-5.

²⁶ E.A. Williams & E. Wentz, *Pattern Analysis Based on Type, Orientation, Size, and Shape*, p. 98.

2 Press

In this section, we focus on the press circulation in Europe and advertising share of the press in different media, such as magazines, radio transmissions, and TV. The collected data, every five years, report the number of dailies and non-dailies titles, the dailies annual sales, the dailies total average circulation, and the advertising distribution at European regional (Eastern Europe, Northern Europe, Southern Europe, Western Europe, and Western Asia) and national level. At the regional level, some differences arise between Northern and Western Europe when looking at the number of annual sales of dailies: northern Europe exhibits a stable trend, while western Europe experiences a decrease. However, the press medium popularity, quantified by *Dailies total average circulation*, increased until 2000 before experiencing a fall in 2005.

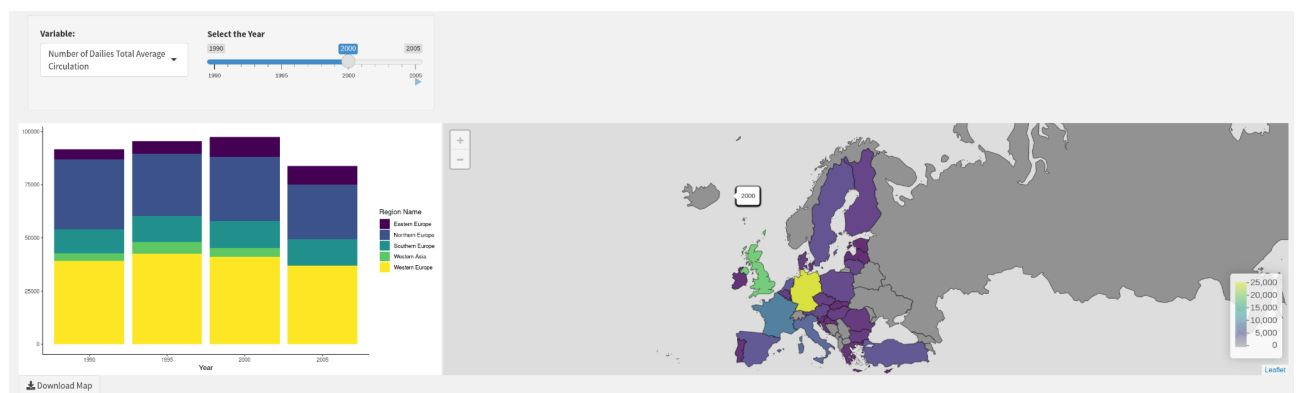


Figure 5. Press Data Circulation
Source: EUMEPLAT elaboration

2.1 Advertising Share Expenditure

One proxy that can be useful to estimate the importance of an information medium is the amount of funds it gathers from advertising campaigns. We examine the share of year expenditure in the period between 2002 and 2019 for different media, namely Press, Radio, Television, Cinema, and Outdoor publicity spaces. During these 17 years, the share of advertising expenditure in the Press decreased for all countries under observation, ranging from a maximum value of 54% of Finland during 2002 to a minimum value of 1% of Russia in 2019. This fall suggests a reduced interest by companies to buy publicity spaces in newspapers that may be consequent to the printed press audience decline over time.

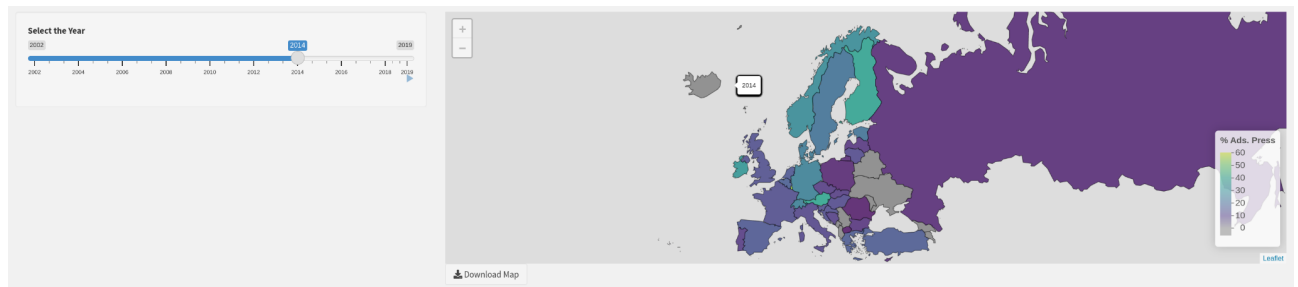


Figure 6. Advertising share expenditure in Press
Source: EUMEPLAT elaboration

However, differences among countries exist. Although the funds raised from press advertisements decreased, Northern countries still dedicate higher resources to press advertisement campaigns with respect to the rest of Europe. This suggests that the popularity of Press may vary from nation to nation.

3 Radio

We first focus on the numbers of radio companies - public and private - and radio stations. Unfortunately, the available data is very fragmented and does not allow a one-to-one comparison between countries. However, we produced an interactive map that shows the number of public and private radio companies, and the number of radio stations from 1980 to 2001. The number of public radio companies is stable over time. Interestingly, The Netherlands pops out with a peak of 330 public radio companies in 2000. The situation is very different for private radio, with the number of companies varying over time. In 2000, France and Italy had more than 1,000 radio private companies.

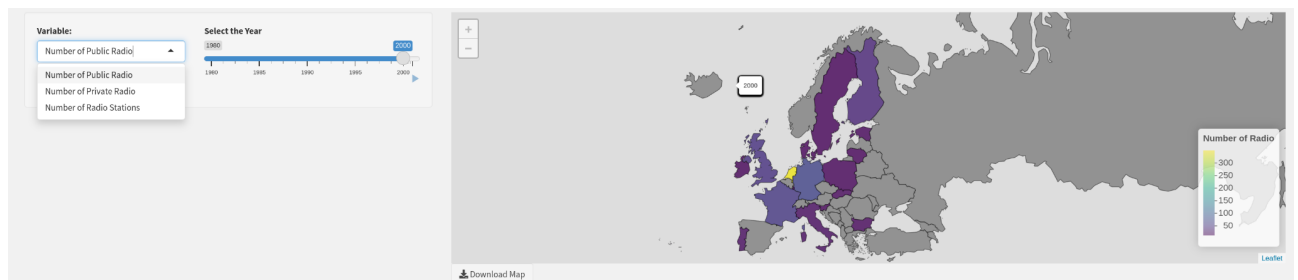


Figure 6. Radio companies and stations in Europe.
Source: EUMEPLAT elaboration

3.1 Top Private and Public Radio Companies

The ranking of top 40 private and 50 public radio companies is published every year according to each company's revenues. Figure 7 shows the total revenues of - respectively - private (public) radio companies ranked in the top 40 (50) by year and country. Looking at the Top 40 Private Radio Companies, Great Britain and Spain had the highest values until 2010, when they were surpassed by France. When focusing on Public Radio Companies, we may observe that their revenues are from 7 to 50 times higher than private radio. In particular, Germany pops out, with about 9 billion EUR in 2018, followed by Great Britain (6,7 billion EUR), France (3,7 billion EUR), and Italy (2,5 billion EUR).



Figure 7. Private and Public Radio Companies
Source: EUMEPLAT elaboration

3.2 Advertising Share Expenditure

Advertising share expenditure in Radio shows a different pattern than in Press. Overall, we may observe a higher stability in the share of the advertising expenditure over time, suggesting that Radio keeps its role as a media platform.

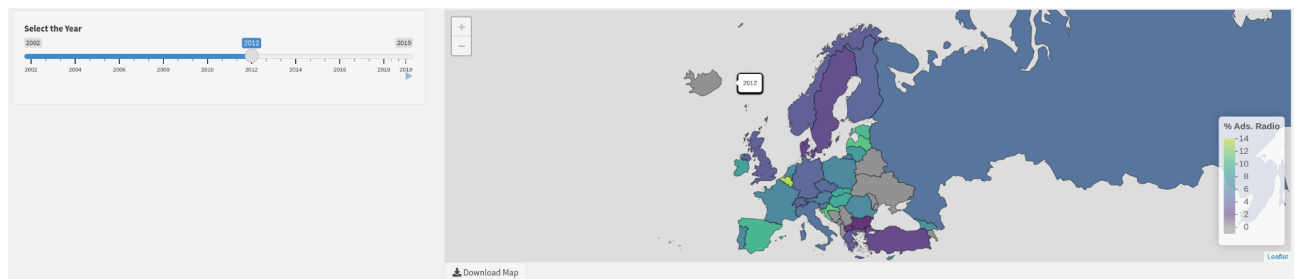


Figure 8. Advertising Share Expenditure in Radio
Source: EUMEPLAT elaboration

3.3 Radio Enterprises and Web Penetration

For what concerns the integration between traditional and new media, once again, we have limited ourselves to some generalizations, without measuring its real terms. From Fidler's *mediamorphosis*²⁷ to the well-known concept of *remediation*²⁸ – both largely derived from

²⁷ R. Fidler, *Mediamorphosis. Understanding new media*, Thousand Oaks, Pine Forge Press, 1997, pp. 72-75.

²⁸ J.D. Bolter & R. Grusin, *Remediation. Understanding New Media*, Cambridge, MIT Press, 2000.

McLuhan – the idea goes that the digital platforms partially replace and partially integrate conventional channels and broadcasting outlets: which is as undeniable as it is generic. And the same can be told about Castells' "self-mass communication"²⁹, Jenkins' enthusiastic praise of cultural convergence³⁰, Boyd's networked publics³¹, or Couldry and Hepp's waves of mediatization³²: in all cases, some balance (or hybridization) is stated between the old of the new, without it being assessed and analyzed. Whether or not to *measure* the state of this integration is not a rhetorical question, though, as it would challenge our methods and protocols, and it would face us with a main risk – asking questions we do not know the answers to.

As we see, there is generally no correlation between the diffusion of the web and the health of the radio industry. Positive correlations do appear, though, in Italy, Greece, and Romania, while a significant negative correlation results in Germany. By and large, it is a fact that the positive correlation is visible in countries with a relatively low diffusion of the web - 83.7% of the population in Italy; 83% in Greece; 80.7% in Romania – and the negative correlation in the highly connected Germany (94%). To some extent, it might seem that there is more space for new radio companies where digital radio has not monopolized the market, or not yet. What is puzzling, though, is how little those data correlate with the use of web radio – the very embedded form of this integration - which ranges from 48% in Germany to 51% in Romania, 54% in Italy and 72% in Greece, over a European average of 56% of users³³.

²⁹ M. Castells, *Communication, Power and. Counter-power in the Network Society*, "International Journal of Communication", 1, 2007, p. 239.

³⁰ R. Jenkins, *Convergence Culture. Where Old and New Media Collide*, New York, New York University Press, 2006.

³¹ See for instance D. Boyd, *It's Complicated. The Social Lives of Connected Teens*, New Haven and London, Yale University Press, 2014.

³² N. Couldry & A. Hepp, *The Mediated Construction of Reality*, London, Polity, 2017, pp. 34-40 and 48-52.

³³ See D1.2- *Patterns in Media Consumption: Regional Models*, the section *Appendix to the Market Reports*, table 209. Similar indications can be inferred from Z. Peruško, D. Vozab & A. Čuvalo, *Audiences as a source of agency in media systems: Post-socialist Europe in comparative perspective*, "Mediální studia", 2013, 2, 137-154.

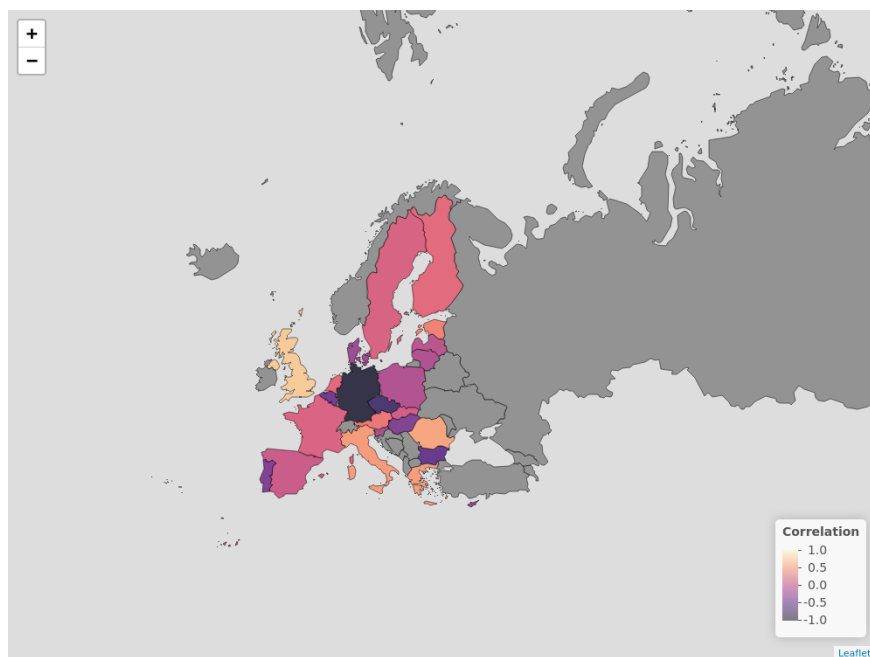


Figure 9. Correlation between web penetration and radio enterprises, 2000-2019.
Source: EUMEPLAT elaboration.

4 TV

In this section we focus our analysis on the TV consumption and production in terms, respectively, of viewing hours and genres. In particular, we show the average hours spent per day in tv viewing, per country, in the period 2011-2019. We may observe that Eastern and Southern European countries show the highest values, while the lowest values belong to Northern countries. Romania is in first position for all the years but 2011 and 2015, with Iceland being the lowest. In general, Northern people seem to watch less TV than their Southern and Eastern counterparts.

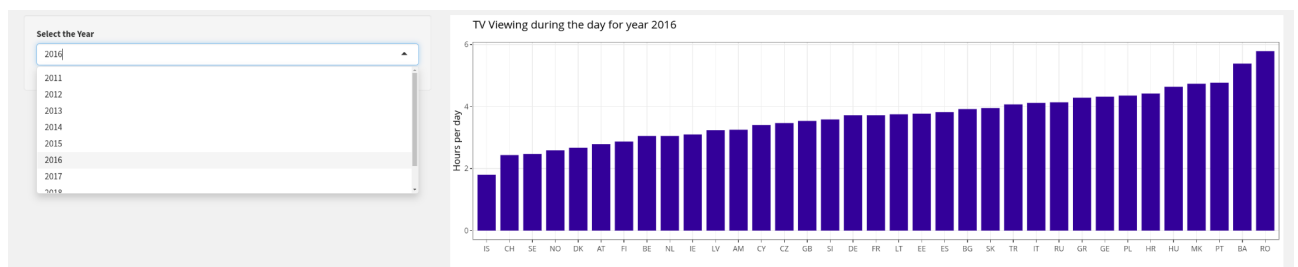


Figure 10. TV viewing hours per day
Source: EUMEPLAT elaboration

In terms of production, we analyze the share of hours per genre transmitted every year in 37 (mostly) public channels in 28 European countries. Overall, we may notice that *Advertising* shows an increasing trend over the years as well as *Information* and *Fiction* (e.g., movies, telefilms, TV-series, etc.). Interestingly, Sweden shows a predominance of the genre *Human Interest*, representing a unique case among all the European countries.

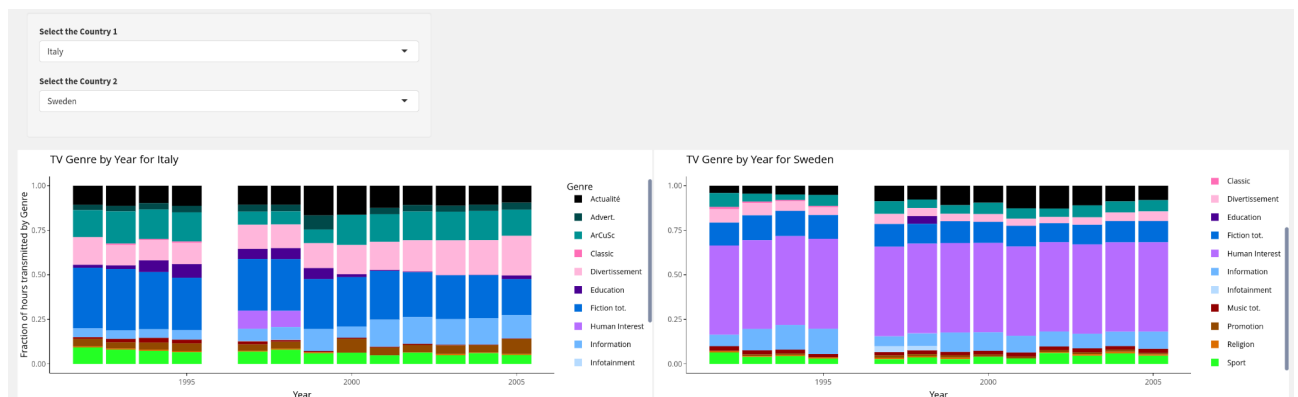


Figure 11. Share of hours by genre
Source: EUMEPLAT elaboration

4.1 TV Channels

We now focus on the number of Public and Private channels divided into terrestrial (regional and national) and non terrestrial channels. Overall, the number of TV channels by

type varies widely among countries, although we may observe the presence of a majority of non terrestrial private channels, followed by terrestrial national and private channels.

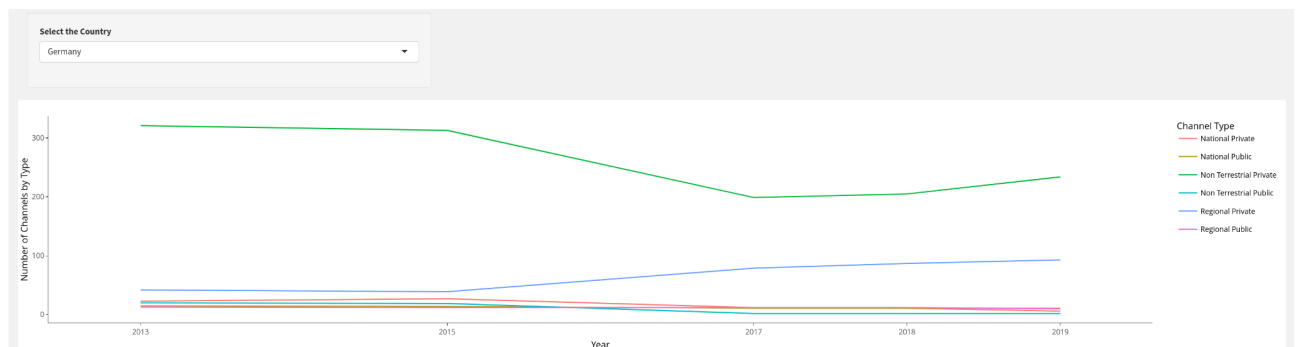


Figure 12. TV channels by type over time (2013-2019)

Source: EUMEPLAT elaboration

4.2 Advertising Share Expenditure

As expected, the TV has been widely used to transmit advertising. The share of advertising expenditure on TV has a similar pattern to Press. TV remains the most important platform for share advertising in southern European countries but shows a decline in Western and Northern countries. Interestingly, the distribution of the share of the advertising expenditure seems to be coherent with TV viewing hours per day.

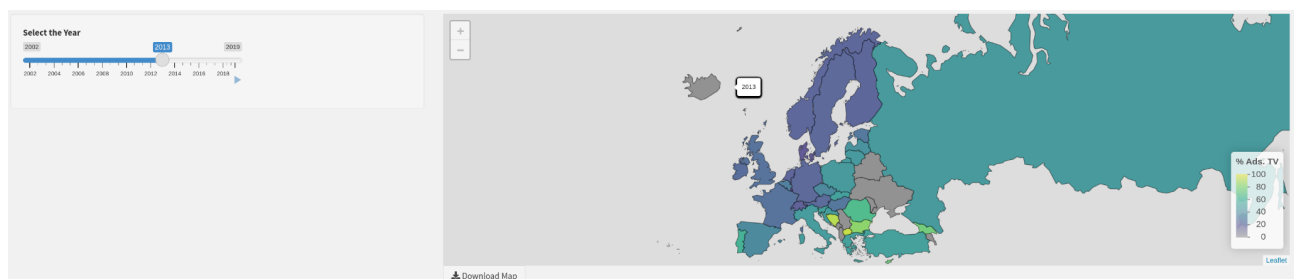


Figure 13. Advertising Expenditure

Source: EUMEPLAT elaboration

4.3 TV Channels and Web Penetration

Web penetration does not appear to correlate with the number of public TV channels, except for Germany, UK, Romania, and Turkey. A similar pattern can be observed in the case of private TV channels, revealing a positive correlation with web penetration in Germany, UK, Romania, and Iceland.

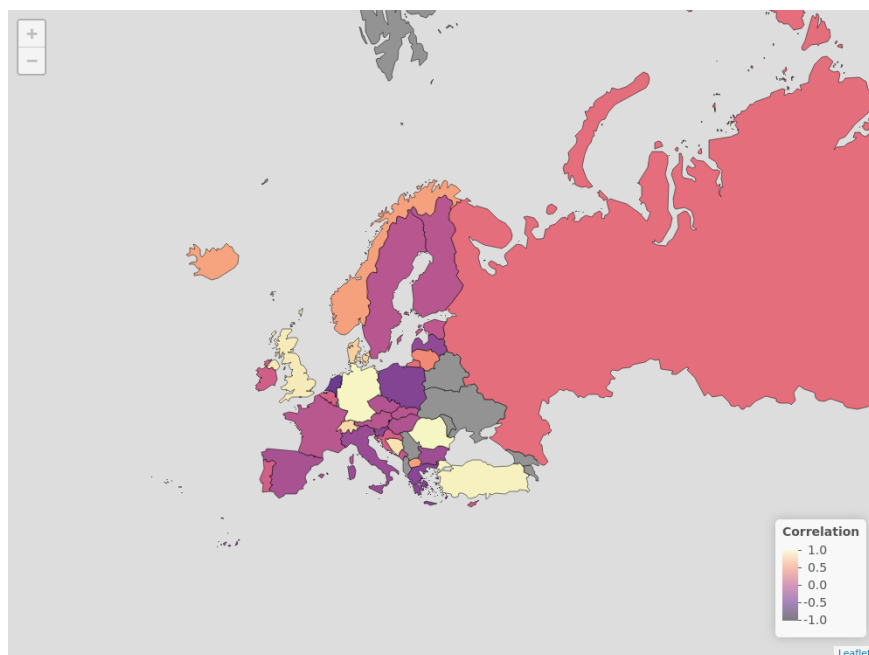


Figure 14. Web penetration and public TV channels (2000-2019).
Source: EUMEPLAT elaboration.

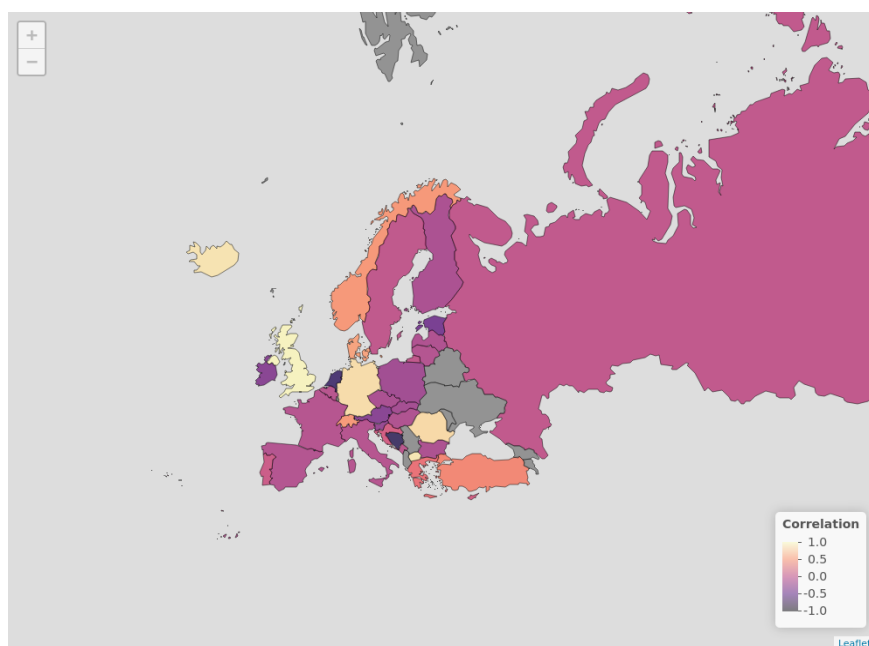


Figure 15. Correlation between Web penetration and private TV channels, 2000-2019.
Source: EUMEPLAT elaboration.

This tendency is quite easy to explain in the case of Romania, which shows both a relatively slow diffusion of the Internet and a growing importance of TV, with daily watching increasing from 4 hours and 22 minutes in 2011, to 5 hours and 47 minutes in 2017, and finally down to 5 hours and 29 minutes in 2019. In Turkey, in a similar vein, daily watching was 3 hours and 48 minutes in 2011, and it rose to 4 hours and 14 minutes in 2019. Different if not

opposite indications come from the UK, where in the same period the daily watching time has decreased from four to three hours per day; and in Germany, where it shrunk from 3 hours and 45 minutes to 3 hours and 30 minutes³⁴.

5 Pay-TV and OTT

Here we focus our analysis on Pay-TV and Over the Top³⁵ (OTT) technologies, i.e., Satellite-TV, Cable-TV, Digital Terrestrial TV (DTT), and Internet Protocol TV (IPTV). Thanks to the granularity of these data, differences among European countries emerge, also due to the adoption (and dismissal) of the technologies.

5.1 Pay-TV Revenues and Subscriptions

First, we analyze the subscriptions and revenues for all Pay-TV services. In general, subscriptions tend to increase over the years, suggesting that even if there was a switch between technologies, this did not negatively affect the number of total subscriptions. Overall, we may observe an increase in the total revenues; this could be driven not only from the subscriptions to single offers but also from other factors such as the differentiation of service and the fact that now providers of Pay-TV services also produce new types of content, e.g., TV-series.

³⁴ See D1.2- *Patterns in Media Consumption: Regional Models*, the section *Appendix to the Market Reports*, table 133.

³⁵ OTT refers to all technologies that offer media services bypassing the traditional Pay-TV platforms, e.g. IPTV.

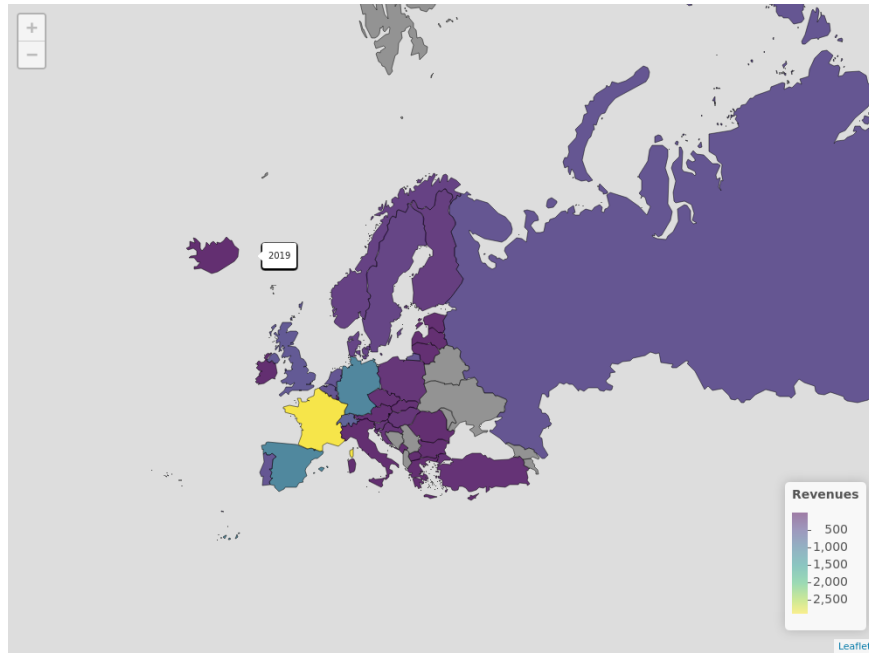


Figure 16. IPTV revenues, 2019.
Source: EUMEPLAT elaboration

Over the last 20 years, new technologies emerged as alternative Pay-TV platforms (Cable, Satellite, Digital, IPTV), creating new opportunities to reach more viewers. However, some of these technologies had a short life, and/or were not adopted uniformly. In particular, many countries adopted Cable-TV, although its presence was absent or very limited for other countries (e.g., Italy, Switzerland, Ukraine, Belarus). Similarly, Digital-TV³⁶ had generally a short life, but in a few countries was successful (e.g., Italy and France). Satellite-TV is more uniformly adopted, its subscriptions have increased over time and remains the most adopted technology in all countries, especially where Cable-TV is not available (e.g., Italy).

³⁶ We consider only Digital-Pay-TV, actually the platform is only used for general TV, after the mandatory conversion of the broadcast infrastructure from the analog transmission.

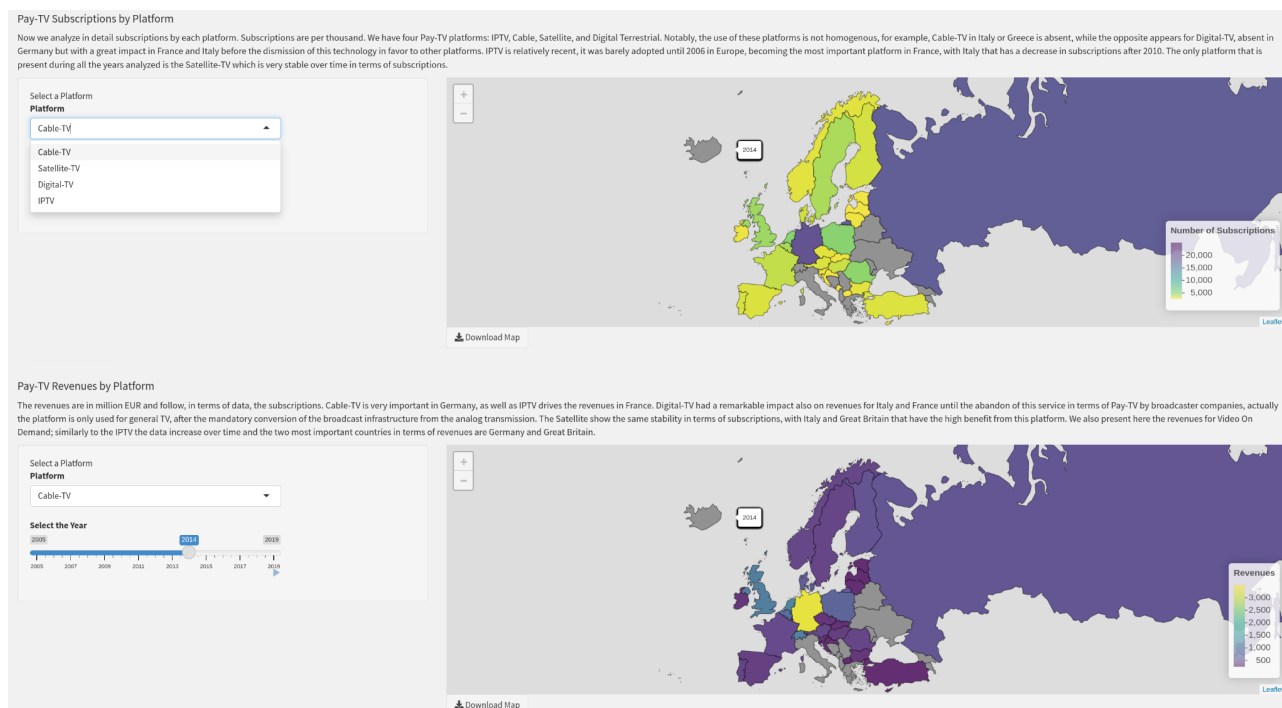


Figure 17. Pay-TV subscriptions and revenues.
Source: EUMEPLAT elaboration

5.2 Pay-TV and the Internet

Here we want to analyze the possible relationship between subscriptions to Pay-TV platforms and Information and Communication Technology (ICT). The map allows us to investigate the correlation between 1) web penetration and IPTV, 2) web penetration and satellite, 3) fixed broadband subscriptions and IPTV, 4) mobile broadband subscriptions and IPTV. Overall, the data does not show a direct relation between web penetration and the IPTV/Satellite subscriptions. For example, we find positive mild correlation in France, Belgium, and Russia. Nordic countries and Germany show a negative correlation. Surprisingly, Satellite-TV shows a positive correlation with web penetration for the Nordic countries, Great Britain, Ireland, and Russia. We also find a low correlation in Fixed Broadband subscriptions and IPTV in France and Italy, and a high correlation between the subscriptions on Mobile Broadband and IPTV for the Russian Federation, France, Ireland, and Iceland.

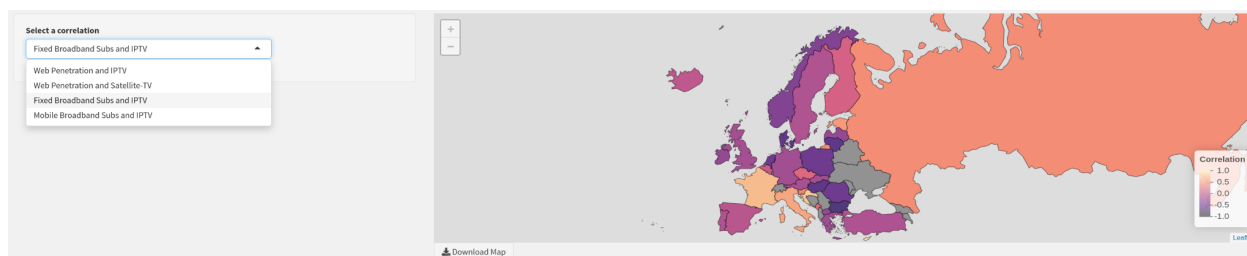


Figure 18. Pay-TV and the Internet.
Source: EUMEPLAT elaboration

6 Information and Communication Technology

In this section we focus on the usage and diffusion of Information and Communication Technology over Europe over the last 20 years. These data offer a clear picture of the evolution and importance of web-related technologies.

6.1 Subscription to ICT Services



Figure 19. ICT Subscription Services.
Source: EUMEPLAT elaboration

The online dashboard offers the possibility to visualize the number of broadband, telephone, and mobile subscriptions from 2000 to 2019 for different European countries. The number of mobile broadband subscriptions, as well as Mbit consumption (i.e., the sum of the used capacity of all internet exchanges) , are also available from 2007 to 2019.

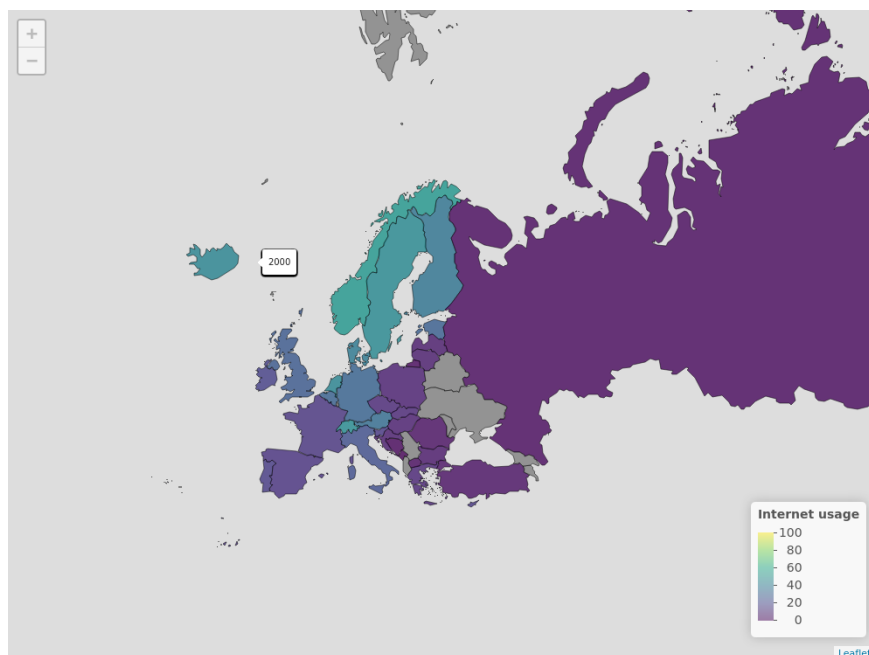
We may observe that the broadband demand has increased over time both for Fixed³⁷ (e.g., FTTH) and mobile services (e.g., 4G+, 5G). A similar trend can be noticed for mobile telephone subscriptions, which may also be linked to broadband subscriptions, with more than

³⁷ Fixed-broadband subscriptions refers to fixed subscriptions to high-speed access to the public Internet

one subscription per inhabitant. Conversely, fixed telephone subscriptions have considerably decreased over the years.

6.2 Internet Penetration

In this section we focus on the diffusion of the Internet in the period from 2000 to 2019. In particular, we may observe a clear general pattern, with the Internet penetration increasing over the years for all the considered countries, despite some local variations.



*Figure 20. Internet penetration, 2000.
Source: EUMEPLAT elaboration.*

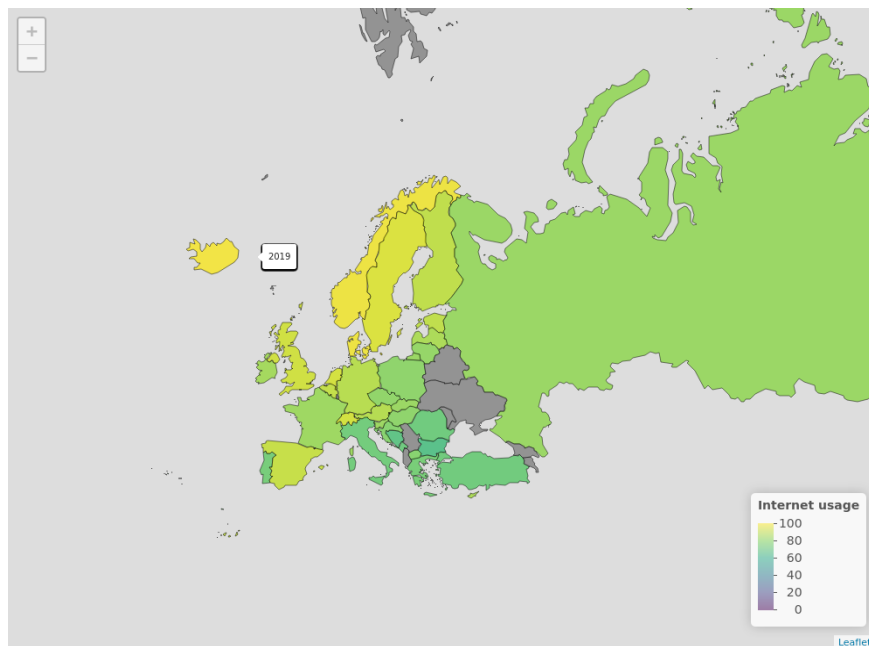


Figure 21. Internet penetration, 2019.
Source: EUMEPLAT elaboration.

The case of Spain is peculiar, showing an evolution from being a poorly connected country in the early 2000s (13.62%) to having one of the highest Internet penetration in 2019 (90.72%). In the classical media systems model, Spain is part of the Mediterranean or polarized-pluralist cluster, along with Italy, France, Portugal, Greece, and Malta (and in some cases Cyprus and Turkey). When the model has been put to the test of empirical indicators, Spain would still be part of the Southern group, with Italy, Greece, and France (and Portugal rather belonging to the Western one)³⁸; or even of an Eastern-Southern cluster, together with post-Socialist countries³⁹. The digital transition of Spanish society is a first example of geographical visualization showing something we did not expect – and which has not been explained yet.

One may also notice that, in terms of population median age, the percentage of young people in the population – which is an alleged driver of innovation - is not below average in the less connected countries: and it is *above* average in Turkey, with less than 10% of citizens aged 65 or older, over an EU median of 20%. Some non-generational therefore factors come to play, in the case of Turkey, that prevent some youngsters from accessing the web: among these, perhaps, the gender divide in the use of new technologies and social media⁴⁰. What is

³⁸ M. Brüggermann, E. Humprecht & S. Engesser, *Hallin and Mancini revisited*.

³⁹ Z. Peruško, D. Vozab, & A. Čuvalo, *Digital Mediascape, Institutional Framework, and Audience Practices Across Europe*, "International Journal of Communication", 9, 2015, 342-364; Z. Peruško, D. Vozab, & A. Čuvalo, *Comparing Post-Socialist Media Systems. The Case of Southeast Europe*, London and New York, Routledge, 2021.

⁴⁰ See D1.2- *Patterns in Media Consumption: Regional Models*, the section *Appendix to the Market Reports*, table 207.

interesting, is that young people do not access the web in equal measure, in the different countries considered: but *when they do so*, they share the *very same* generational habitus⁴¹. In other words, we observe different tendencies *depending on the scale* of the analysis: a global pattern of digitization, likely to be explained upon the regional frame of comparative media systems; some national differences in terms of correlation between the strength of the old and the new channels; and again, within those countries, the very same breakdown by age cohort, regardless of the overall diffusion data.

Interest on the Internet market is also present in terms of the share of advertising expenditure on the web. Indeed, we can observe that the amount spent on advertisements on the Internet has clearly increased in the last 20 years.

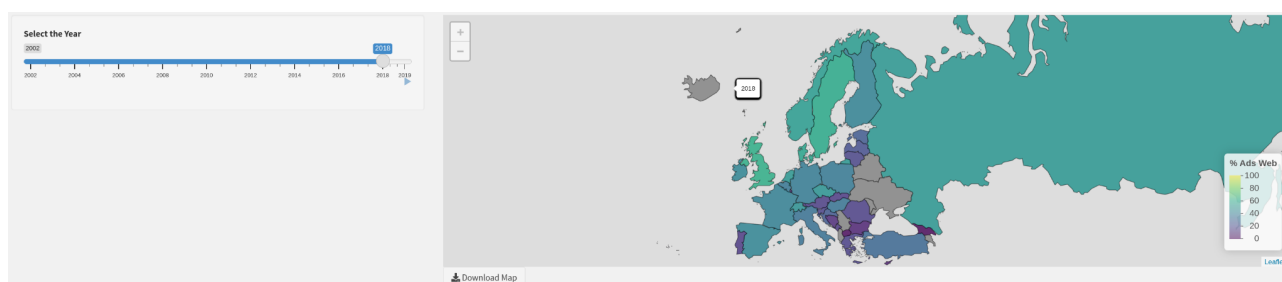


Figure 22. Advertising expenditure on the Internet
Source: EUMEPLAT elaboration.

6.3 Web Penetration and ICT Broadband Subscriptions

In this section we investigate the possible relationship between the increase in subscriptions to broadband services and web penetration. The map allows us to investigate the correlation between web penetration and 1) fixed broadband subscriptions, 2) mobile broadband subscriptions, 3) web advertising. A strong positive correlation can be observed between web penetration and fixed broadband for Norway and North Macedonia, and between web penetration and mobile broadband for Poland.

⁴¹ See D1.2- *Patterns in Media Consumption: Regional Models*, the section *Appendix to the Market Reports*, table 208.

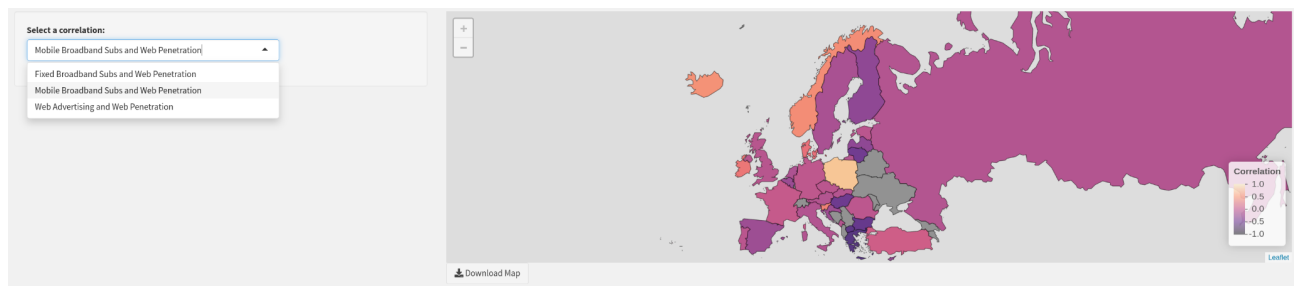


Figure 23. Web Penetration and ICT Broadband Subscriptions
Source: EUMEPLAT elaboration.

7 Movies

We now focus our analysis on the movie sector. The first map reports a series of economic indicators for movies such as:

- Cinema admissions
- Admission per person
- Box Office
- Cinema Expenditure per person
- Market Admission European Union Film (the admissions for film produced by EU-27 countries)
- Market Admission Rest of World film (the admissions of film produced in the rest of world, US excluded)
- Number of national Produced Film (the absolute number of films produced by the country)
- Number of co-production (the absolute number of films produced by two or more countries)
- Number of films screened from EU-27 Countries
- Number of films screened from World (US excluded)
- Total film Screened (the number of titles screened)
- Number of Screens (the physical number of screen available in the country)
- Number of Cinema Sites
- Number of Digital Screens
- Number of 3D-Digital Screens

- Number of screens per person

The following analysis is based on the Lumiere Pro Database⁴² and is restricted to all film admissions since 1996, including film descriptive information data (film's title, director's name, distributor, etc.), and theatrical release data (production year, admissions, number of screening). The movie offer in Europe is driven by the so-called *big five*: Great Britain, Italy, France, Germany, and Spain. For each European country we report the admissions of all movies produced by one of the big five countries as main producer/contributor, the country itself, and the US.

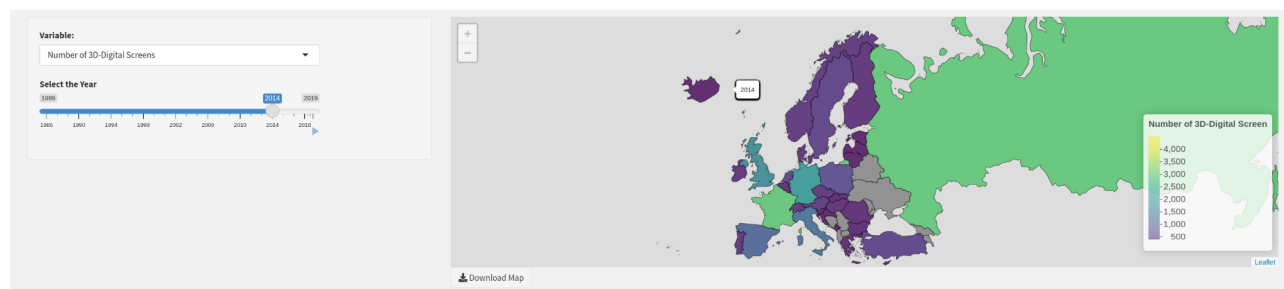


Figure 24. Economic indicators.
Source: EUMEPLAT elaboration.

In most of the European countries (excluding the big five), films from the United States have the biggest value of film admissions. However, for Nordic countries, there is a higher share of films produced in Great Britain. Another pattern emerges when considering speaking languages in the country. For example, French movies have a lot of admissions in Belgium, while German movies are also popular in Switzerland.

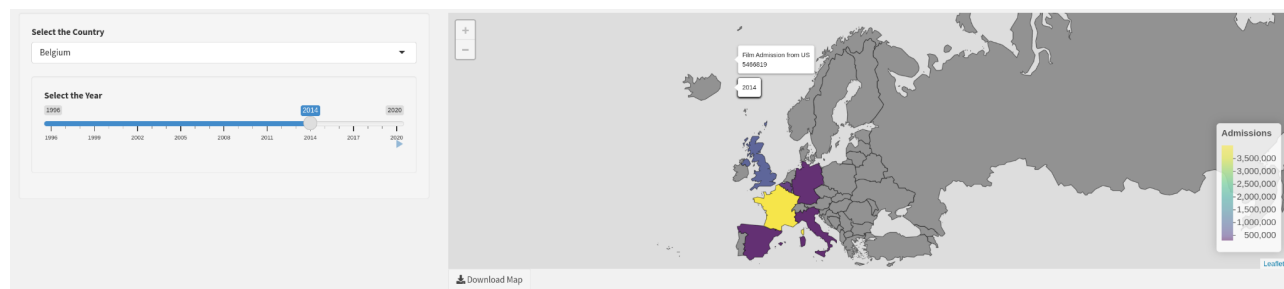


Figure 25. European film admissions.
Source: EUMEPLAT elaboration.

⁴² Lumiere Pro Database, <https://lumiere.obs.coe.int>

8 Conclusions

In the case of a methodological approach to media geography, we can only draw some partial conclusions. The most interesting result of our first geographical visualizations is the emergence of a multi-level scenario: the macro-pattern of the European continent, which may often be homogeneous, and the micro-pattern of local variations, where differences emerge, which we are still far from understanding. One looks at the big picture, and things seem to be relatively uniform: while a more scattered and dispersed plot is unraveled, when we take the analysis to a more granular level of observation. We must accept, Philippe Martin wrote,

“that European integration has led to a process of convergence between countries, but not between regions inside countries [...]. This will be so in particular if, due to European structural and institutional features, poor regions cannot exploit their comparative advantage relative to rich regions as well as if poor countries cannot exploit their comparative advantage relative to rich countries⁴³.”

For Martin, therefore, European market integration is all about a dual tendency - global convergence and local divergence. Though his work is focused on the overall economic situation, and basically premised on Paul Krugman's, these words remind us of the distinctive feature of the network society as theorized by Manuel Castells – it being at the same time “globally connected and locally disconnected”, which is the real hallmark of the new international division of labor⁴⁴.

The overlapping and the discrepancies between these different patterns – the local, the national, the regional, the European, and the global – is still the main research task to be addressed, and geographical visualization can pay a service to this scientific goal.

⁴³ P. Martin, *The Geography of Inequalities in Europe*, in *Spatial Disparities and Development Policy*, edited by G. Kochendörfer-Lucius & B. Pieskovic, Washington, The World Bank, 2009, p. 240

⁴⁴ M. Castells, *The Rise of the Network Society*, p. 404.

9 Data

For the press market, we used data released by the World Association of Publisher WAN-IFRA⁴⁵, data collected every 5 years.

Data for Radio come from Yearbooks of the European Broadcasting Union⁴⁶ and are collected every 5 years from 1980 to 2000 and yearly after that Number of radio stations, public and private radio, and enterprises are in absolute value.

Radio companies ranking, TV, Pay-TV, and Share of Advertising Expenditure come from the European Audiovisual Observatory⁴⁷, collected in Yearbooks, and merged for the analysis. Data on subscriptions are per thousand while all revenues data are in million EUR.

Information and Communication data are provided by the International Communication Union⁴⁸, with yearly collections from 2000 until 2019, data for Mobile Broadband and MBit consumption start from 2007, all subscriptions' data are normalized per 100 inhabitants.

Data for movies is based on the Lumiere pro Database, updated by the European Audiovisual Observatory which provides a systematic compilation of available data on admissions of the films released in European cinemas since 1996, and Media Salles.⁴⁹

We analyzed and projected most of the data with geographical representation that cover all years available in the data. We used maps publicly available from the European Commission Geographic Information System (GISCO)⁵⁰, which also provides regional status for all countries. For the correlation analyses, we analyzed the first difference between each variable.

⁴⁵ World Association of Newspapers (WAN-IFRA); Yearbook 1990, 1995, 2000, 2005

⁴⁶ European Broadcasting Union: Yearbook 1980, 1985, 1990, 1995, 2000, 2001

⁴⁷ ©European Audiovisual Observatory / Observatoire européen de l'audiovisuel / Europäische Audiovisuelle Informationsstelle; Yearbook 2013, 2014, 2015, 2016, 2019

⁴⁸ ITU, indicators and other statistics; Yearbook 2019

⁴⁹ © MEDIASALLES; Yearbook 2019

⁵⁰ European Commission, GISCO - the Geographic Information System of the Commission - localize, analyze, visualize <https://ec.europa.eu/eurostat/web/gisco>

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004488

