

Digital Mediascapes, Institutional Frameworks, and Audience Practices Across Europe

ZRINJKA PERUŠKO¹

DINA VOZAB

ANTONIJA ČUVALO

University of Zagreb, Croatia

This article explores the relationship between the media-use patterns of European audiences and the institutional contexts of digital media systems in a multilevel, cross-national comparative research design. A theoretical model is proposed for describing contemporary digital media systems, applied through cluster analysis to a set of 22 European countries. Four digital mediascapes/media system clusters are identified. Regression analysis shows the influence of macro-level media systems on micro-level audience preferences for different media. The media system clusters are related to data on media use from the nine countries in the “audiences across media” study. The findings strongly support the explanatory power of structural aspects at the macro-institutional level for audience choices in terms of both legacy and Internet-based media.

Keywords: digital mediascapes, comparative cross-national research, multilevel analysis, media systems, media audiences, cluster analysis, regression analysis

How do patterns of media-use differ across Europe, and why? Previous research has not found a satisfactory answer to this question (Hasebrink, 2012). Our study expands on the research in this area by showing how the macro-institutional contexts of media systems influence individual audience practices in terms of media use.

Zrinjka Peruško: zrinjka.perusko@gmail.com

Dina Vozab: dinavozab@gmail.com

Antonija Čuvalo: antonija.cuvalo@gmail.com

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Hasebrink summarized the state of the art of comparative research in three main areas of audience and reception research: studies looking at the conditions of media use, including technical reach and individual access; studies of the practices of media use, including both the extent of usage and the patterns of selection; and meanings and media use, comprising reception/interaction studies and appropriation approaches (2012). His analysis found a lack of coherence and a largely pre-explanatory state of comparative research designs. Of the six main traditions of reception research—cultural reproduction (encoding/decoding), uses and gratifications (the active audience), hegemonic theory and political economy (resistant audiences), post-structuralism (the role of the reader), feminism (the marginalized audience), and the ethnographic turn (Livingstone, 1998), only the latter has tended to take into account the social and cultural contexts of reception or media choice, albeit in terms of individual micro or meso contexts.

Media dependency approaches (Ball-Rokeach & DeFleur, 1976; Sun, Chang, & Yu, 2001) have taken the orientation toward contexts one step further, but it is only recently that approaches taking a multilevel approach have been emerging. Audience practices have mostly been analyzed through individual characteristics like age, gender, or education—thus constraining the analysis to the micro level and neglecting contextual factors. Apart from family or peer groups, contextual or environmental factors have so far been analyzed mostly by media economists and mass media scholars looking for influences of information market structure on consumption choices (Althaus, Cizmar, & Gimpel, 2009). Recent examples of this kind of research include Althaus et al. on the impact of markets on news consumption, and Prior (2007) on the influence of a changing media environment on political knowledge, as well as analyses of relationships between media systems and different patterns of news consumption or political behavior (Curran et al., 2009; Elvestad & Blekesaune, 2008; Meulemann, 2012; Shehata, 2010; Shehata & Strömback, 2011).

In this study, we are concerned with the central question of how structural configurations of digital mediascapes shape European media audience practices. Drawing on a notion of “institutionalized media audiences” that addresses audiences at the contextual level of markets or media systems, we aim to explore whether audience practices can be explained by the structural-level variables shaping media systems in different clusters of countries. Napoli (2012) emphasizes the need to address ongoing changes of media environments in research on media use, in which audience fragmentation and autonomy (determined by the degrees of interactivity, mobility, on-demand functionality, and capacities for user-generated content) are among the most important current explanatory factors.

We conceptualize audience practices in terms of our previously published structuration theory approach (Peruško, Vozab, & Čuvalo, 2013), in which the media system is treated as a set of structural conditions under which audiences must act. “Structure is not 'external' to individuals . . . is not to be equated with constraint but is always both constraining and enabling . . . the structural properties of social systems are both medium and outcome of the practices they recursively organize” (Giddens, 1984, p. 25). This conceptualization provides a theoretical framework for the premise of this article, namely, that the institutional framework of media systems helps to explain practices of media use. Before proceeding to the detailed research design and the method employed in the multilevel comparison, we address the macro-institutional context of audience practices.

Beyond Hallin and Mancini: Institutional Dimensions of Digital Media Landscapes

Comparative political communication research is considered to be the most developed subfield of communication study in terms of comparative research (Esser & Hanitzch, 2012), and with the longest tradition (Blumler & Gurevitch, 1975). In our conceptualization of the institutional macro structures influencing audience choices, we depart from a notion of media systems as the common or prevalent unit of cross-national comparative research in political communication. Most often the notion of a media system is meant to include all the media in the territory of a state. Because of its wide use in the past decade, the notion of media systems is useful as a common theoretical frame on which to base a new theoretical conceptualization. The very notion of a media system is, however, increasingly challenged—we need to first address these challenges in order to render the concept useful for our present purposes.

A key theory about media systems is Hallin and Mancini's (2004) model, which focuses on the relationship of the political field with four media-related dimensions—the professionalization of journalism, political parallelism, the role of the state, and media markets. The theoretical concern of the model is most clearly related to political journalism and the relationship of journalism, journalists, and news media with the wider political realm. The role of the state (as well as the market) is predominantly examined and framed in relation to how these may facilitate or hinder the autonomous practice of journalism as a profession serving publics, citizens, and democracy.

The model is perhaps best known for the three groups of countries identified by Hallin and Mancini as an empirical outcome of their theory. The models are "doubly articulated" by geography and political systems—the polarized pluralist model is situated in the Mediterranean, the liberal model includes the UK and the U.S., and the democratic-corporatist model encompasses the European north. These types advance our understanding of media system development through their attention to the historical roots of media systems, and to the interrelations of various social and cultural variables or dimensions, not only in Western Europe but also in post-socialist Europe (Balčytienė, 2009; Dobek-Ostrowska, 2012; Peruško, 2013) and beyond (Hallin & Mancini, 2012).

In a previous study, we operationalized four media system dimensions drawing on data from the European media systems survey, the World Association of Newspapers and News Publishers (WAN-IFRA) World Press trends database. Eurobarometer 7 4.2 data were used for frequency of media use (Peruško, Vozab, & Čuvalo, 2013). This empirical test of the Hallin and Mancini (2004) model on West and East European countries found three distinct clusters— or structural models—that differ somewhat from the original Hallin and Mancini classification. An important finding was that, contrary to common expectation, European post-socialist countries clustered with Western European countries according to specific structural aspects of their media systems, rather than as a single post-socialist media system. Nor were they aligned only with the Mediterranean/polarized-pluralism model (which was expected). A north/south, rather than an east/west, differentiation was found in the cluster analysis of media use.

Another empirical operationalization of the Hallin and Mancini structural model (with some adaptations of the original dimensions) has provided yet another grouping (of Western European)

countries (Brueggemann et al., 2014). Four clusters were uncovered: Northern, Southern, Central, and Western. While we have no space here for further comparison of these results and their ramifications, or for critiques of the grouping of individual countries by Hallin and Mancini, the relevance and value of a clustering approach to the operationalization of the variables of media systems is clear.

Critiques of Hallin and Mancini's media systems theory raise five sets of issues, as summarized by Hardy (2012): (1) country classification in individual models; (2) the issue of temporality, which points to the fact that the ideal types of media systems as conceptualized by the authors are subject to historical change; (3) the issue of journalistic professionalism as conceived within modernization theory, where the autonomous model is normatively privileged; (4) the narrow focus on political media; and (5) proposals for the addition of more dimensions as system-differentiating factors, including country size, market size, and a more detailed operationalization of the state dimension. Critiques have also pointed to a need to extend the understanding of media systems, both as systems of cultural production and consumption and in terms of cultural flows in an increasingly globalized media landscape. The need for an updated understanding of media systems has also been stressed in relation to digital media and social media practices (Humphreys, 2012; Norris, 2009, 2013). We next briefly examine these last three dimensions—digital media, media culture, and globalization—as they will be the focus of our later analyses.

While media technologies structurally enable and constrain audience practices (Baym, 2010; Katz & Rice, 2002), the practice of media use and communication is likewise constrained by the institutional structures of media systems. Digital media landscapes comprise legacy and digital media, "sticky," and "spreadable" media (Jenkins, Ford, & Green, 2013). Emergent spreadable media (defined by decentralization, interactivity, and openness) are best seen not as technologies, but as social and cultural practices (Macnamara, 2010). Contemporary media cultures are no longer defined by one medium alone, even though the Internet is the currently dominant environment for different and ever-diversifying media-related practices, with digitalization as its technological foundation (Hepp, 2013). Our conceptualization of technology, including media technology, views technologies as subject to social forces—as a "social product, patterned by the conditions of its creation and use" (Williams & Edge, 1996, p. 866) which avoids a deterministic position. The consequences of technological developments are seen to arise from a mix of affordances or "the social capabilities of technological qualities" and "unexpected and emergent ways that people make use of those affordances" (Baym, 2010, p. 44). We thus return to structuration theory to explain the mutual influence of structure and practice.

The concept of mediascapes has been invoked in research on global or transcultural aspects of media, in relation to media use and audience practices within the paradigm of media emergence, where legacy media are subject to mediamorphosis and hybridization (Macnamara, 2010). In fact, most of the time the original understanding of "scapes"—in terms of different viewpoints of geography

to indicate first of all that these are not objectively given relations which look the same from every angle of vision, but rather that they are deeply perspectival constructs, inflected very much by the historical, linguistic and political situatedness of different sorts of actors: nation-states, multinationals, diasporic communities, as well as sub-national groupings and movements. (Appadurai, 2000, p. 101)

—is not invoked. Nevertheless, the intention in this research is clearly to transcend the level of nation or state, and to take account of global or transcultural flows of communication, adding a dimension that is increasingly seen to be missing in media systems approaches.

A comparison of the vocabularies of media systems and mediascapes also points to different understandings of nation or state in comparative research designs: as a unit in multi-dimensional analysis from the media system viewpoint or as a locus of transnational trends from the mediascape viewpoint (Livingstone, 2012). Esser (2013) points to a paradox of cross-national research of media and communication in which the nation or state as a unit of analysis appears increasingly insufficient because of global media flows, but still necessary.

Media systems, media cultures, and audience practices are increasingly difficult to conceive of in relation to nation-states alone, without attention to the increasingly global flows of media products and services, as well as the corresponding consumption practices. The notion of flow has in the past been successfully employed to describe the movement of cultural productions (originally film and television, but also software, games, and all kinds of texts produced industrially or individually), from Raymond Williams (1974) to Hepp and Couldry (2009), who see transnational media cultures as a complement to the “territorialized thickening of a nation” (p. 32). In our own research, we have conceptualized genre, including its flow character, as one indicator of media culture and a dimension of media systems (Peruško & Čuvalo, 2014).

We propose to describe the contemporary digital media system in a way that includes emergent media and media practices alongside legacy media. We also opt for including the cultural flows of media and globalization trends. At the same time, we move beyond the orientation toward news media and political journalism in the Hallin and Mancini model.

Before proceeding to empirical operationalization, we need to address one extra-media dimension that serves to define media systems, and which concerns the dimension of the state and political parallelism within the Hallin and Mancini model. This dimension is the institutional character of the society or state in which the media operate. Acemoglu and Robinson (2012) define two types of institutions that determine the political and economic development of nations: inclusive and extractive institutions. Inclusive institutions

feature secure private property, an unbiased system of law, and a provision of public services that provides a level playing field in which people can exchange and contract; it must permit the entry of new businesses and allow people to choose their careers. (Acemoglu & Robinson, 2012, p. 74)

Extractive institutions are coercive, and elites extract economic and political benefits to the detriment of the population. These authors show how the same historical circumstances can have different outcomes depending on institutional differences. While inclusive institutions may ultimately bring democracy and economic prosperity, extractive institutions limit political and economic pluralism and block economic progress by removing incentives for individual action. The institutional frameworks also

influence the scope for technological innovation and the development of education, the “two other engines of prosperity” (Acemoglu & Robinson, 2012, p. 77).

Inclusive institutions allow for technological development whereas extractive institutions block it for fear of the changes in the form of creative destruction that would bring the existing balance of power to an end. Thus, media systems are shaped by broader institutional affordances. Extractive institutions wish to control the channels of public communication as well as the participation of the public and individual citizens, so that media are necessarily constrained. Inclusive institutions allow for technological innovation, to the point of allowing for disruptive properties, for instance, of the Internet in relation to newspapers. Inclusive institutions support media freedom, and free media in turn support further inclusiveness of institutions (Acemoglu & Robinson, 2012).

Digital Mediascape Dimensions

We propose a theoretical model of digital media systems or mediascapes that includes the affordances of “new” media, media culture in its increasingly global character, and the relationship of the media field with the political field as framed within the theory of inclusive institutions (Acemoglu & Robinson, 2012). The model has four main dimensions: the inclusiveness dimension, composed of political inclusiveness and economic and social inclusiveness; the digital media market dimension, composed of variables concerning the penetration of legacy and emergent media (newspaper circulation, social media penetration, smartphone penetration, change in fixed telephone subscription, broadband penetration); the dimension of media culture, represented by proxy through the creative economy; and globalization as the last dimension.

An obvious constraint on international empirical comparisons comes from limitations in the types of data available cross-nationally, and in their geographic coverage. Our choice of indicators is guided by a preference for empirical measurements over estimations, although these could not be avoided altogether.

We take democracy as proxy for inclusive political institutions. As there is no simple empirical measure of democracy, we chose to represent it by an international index encompassing all the world’s regions. The Economist Intelligence Unit (EIU) Democracy Index includes five dimensions: (1) electoral process and pluralism, (2) functioning of government, (3) political participation, (4) political culture, and (5) civil liberties. The last dimension focuses on freedom of the media, including: freedom of print and electronic media; freedom of expression and protest—with the possibility of free expression, including minority views, without official harassment; robustness and diversity of media coverage; and Internet access—especially in view of possible political restrictions (The Economist Intelligence Unit, 2012).

We take levels of education and economic prosperity as proxies for social and economic inclusion. We chose the United Nations Development Program (UNDP) Human Development Index, which is a composite statistic of life expectancy, education, and income indices.

In order to represent the most salient characteristics of media markets in terms of emergent and legacy media, media cultures, and globalization levels, we combined a number of empirical indicators. To

represent legacy media, we use an indicator of newspaper circulation (N per 1,000 adult inhabitants) and add a television audience concentration index (C3—a standard measure indicating the cumulated percentages of the three largest channels, usually in terms of audience shares) as more reliable than the number of television channels (which are not uniformly and accurately reported from available sources). To represent emergent digital media, we include an indicator of broadband penetration as a precondition for the development of a digital economy. Changes in fixed telephone subscriptions between 2003 and 2013 are included as an indicator of the advancement of the digital media system—in the most advanced countries, the number of fixed telephone subscriptions is decreasing. Smartphone penetration is included as an indicator of the mobile or ubiquitous character of the media system, as is the level of social media penetration.

To represent the dimension of media culture, we include data on the export and import of products and services within the creative economy. Creative economy, as defined by the United Nations Conference on Trade and Development (UNCTAD), consists of arts and crafts, performing and visual arts, publishing and audiovisual goods, design, new media, advertising, market and public opinion research, R&D, architectural, engineering and other technical services, and personal, cultural and recreational services (UNCTAD Creative Economy Report, 2010). The creative economy statistic used in the present analysis is an average of cultural exports and imports (the sum of values of cultural exports and imports were divided by two for each country), reflecting cultural creativity and openness. While we might have preferred to include only specifically media-related data (e.g., on film, television, or music production and sales), these were not available for all countries in our study. For instance, the available statistics do not include comprehensive data on trade of digital creative content (UNCTAD Creative Economy Report, 2010).

While the preceding dimension of media culture could be seen to also represent some aspects of globalization, we chose to include an additional and separate measure, the KOF Index of Globalization by the Konjunkturforschungsstelle Swiss Economic Institute (KOF). It includes three dimensions:

economic globalization, characterized as long-distance flows of goods, capital and services as well as information and perceptions that accompany market exchanges; political globalization, characterized by a diffusion of government policies; and social globalization, expressed as the spread of ideas, information, images and people. (Dreher, 2006, p. 1092)

The dimension of social globalization includes several indicators specific to communication and potential media use: international telecommunications traffic and letters sent internationally, number of Internet users per 100 inhabitants, share of households with TV sets and percent of newspapers traded as a percentage of GDP, which “proxy people’s potential for receiving news from other countries—they thus contribute to the global spread of ideas” (KOF, 2014, p. 2). The trade of books (as a percentage of GDP) is intended to show cultural proximity. Norris and Inglehart (2009) used the same measure to assess how the level of the globalization of mass media communication influences values in societies worldwide.

The dimensions, operationalization, and sources of data are summarized in Table 1, and the values of the empirical measurements are represented in Table 2.

Table 1. Operationalization of Digital Mediascapes.

Dimensions/ variables	Operationalization	Source of data	Year of data
Inclusiveness of political, social, and economic institutions	Quality of democracy	The Economist Intelligence Unit Democracy Index 2012 www.eiu.com	2012
	Social & economic equality	UNDP Human Development Report 2014 http://hdr.undp.org/en/statistics/hdi	2014
Digital media market	Newspaper circulation (per capita)	WAN-IFRA, World Press Trends Database	2012
	TV audience concentration (C3)	2012 Yearbook of European Audiovisual Observatory	2011
	Broadband Internet (fixed [wired] broadband subscriptions per 100 inhabitants)	Information and communication technology (ICT) statistics at International telecommunications union (ITU)	2013
	Social media penetration (percentage of population using social media)	Global digital statistics 2014, We are social Singapore http://wearesocial.net/	2013
	Fixed telephone change 2003– 2013 (the change in the number of fixed telephone subscriptions from 2003 to 2013)	ICT statistics at ITU	2003-2013
	Smartphone penetration (percentage of population owning and using a smartphone)	Google's Our Mobile Planet; For Slovenia: http://www.mvfglobal.com/slovenia	2013
Media culture	Creative economy (average value of cultural exports and imports)	Creative Economy Report 2010, UNCTAD http://unctad.org/en/pages/PublicationArchive.aspx?publicationid=946	2008
Globalization	Globalization	2014 KOF Index of Globalization http://globalization.kof.ethz.ch/media/filer_public/2014/04/15/definitions_2014.pdf	2011

Research Design and Method

In order to answer our research question, How are media practices related to the institutional and structural dimensions of digital media systems, and to individual characteristics of audience members, the empirical part of this article proceeds in two steps. In the first step, the operationalized theoretical model of digital mediascapes is applied in a cluster analysis to a set of 22 European countries and Israel. Variables of our digital mediascapes model are listed in Tables 1 and 2.

To explain media use and audience practices in digital media systems, we base the second phase of analysis on the survey conducted as part of the EU COST comparative research project on "audiences across media." In this second step, we use regression analysis to determine how media systems influence audience preferences for different media. Here, we use two sets of data—the media systems cluster set from the first step of our analysis is related to data from the "audiences across media" study. Cross-national comparative surveys were conducted in nine countries: Belgium, Croatia, Denmark, Germany, Hungary, Israel, Italy, Poland, and Portugal. We based our analysis on combined data from all countries; the total sample included 10,742 respondents. Comparative research was conducted through online surveys with representative samples of Internet users in each of these countries, as elaborated in the introduction to this special section. We repeat here the caveat regarding differences in Internet penetration in the participating countries: In countries with lower Internet penetration, the data sets might be biased towards younger, more educated, urban, and affluent audiences.

Audience practices can be influenced by both macro-level structural characteristics (media systems/mediascapes) and by individual-level characteristics (age, gender, education, income, etc.). On the micro level, we analyzed media practices in terms of the use of media on different platforms. Audience practices were operationalized to reflect the old/new media distinction: printed newspaper vs. Internet news site, and television set vs. television on computers or mobile phones.

Our choice of countries was restricted by the circumstances of the research process and the available data: Nine countries were involved in the "audiences across media" comparative research project, and 23 countries served as cases for the cluster analysis in the first phase of analyzing the digital media systems (22 EU countries and Israel; due to insufficient data, six EU countries had to be excluded from analysis).

Results and Discussion

The Institutional Dimension: Media System Clusters

Variables describing structural dimensions of digital mediascapes were used to group countries into clusters, based on their similarities across these dimensions. Cluster analysis (Everitt et al., 2011) was performed in order to identify groups of countries. Hierarchical cluster analysis was performed using Ward's method with Euclidean distance as a measure of similarity. Elbow method was used in identifying the number of groups. Variables were standardized as z-scores.

Table 2. Country Values for the Cluster Analysis of Digital Mediascapes.

Variable	Human development index	Quality of democracy	Globalization	Newspaper circ. (per 1,000 adults)	Smart-phone penetration	Broad-band Internet	Fixed telephone change 2003-2013	TV audience concentration	Creative economy (in million US\$)	Social media
SCALE	Index on a scale 0-1	Index on a scale 0-10	Index on a scale 0-100	N	%	%	%	%	N	%
Austria	0.88	8.62	89.48	418.01	48	26.01	8.19	42.1	6722.5	39
Belgium	0.88	8.05	92.30	168.88	33.5	34.40	5.63	53.5	8926	52
Bulgaria	0.78	6.72	71.73	134.89	9	18.97	9.20	62.5	566.5	43
Croatia	0.81	6.93	75.36	121.57	15.5	21.54	5.66	62.2	687	40
Czech Republic	0.86	8.19	84.86	150.15	41.6	17.03	16.88	62	4347	41
Denmark	0.9	9.52	88.12	271.33	59	40.17	29.70	50.6	4224	58
Finland	0.88	9.06	84.85	393.33	45.5	30.90	35.39	61.8	1515.5	46
France	0.88	7.88	83.86	176.63	42.3	38.79	-4.76	49.4	20031	42
Germany	0.91	8.34	81.08	253.43	39.8	34.58	5.86	39	30637	35
Greece	0.85	7.65	80.31	133.28	32.5	26.15	9.19	50.1	2252	41
Hungary	0.82	6.96	86.85	162.43	34.4	24.12	5.61	46.8	1360	48
Ireland	0.89	8.56	91.79	178.62	57	24.24	4.78	44.3	2370.5	50
Israel	0.88	7.53	77.27	192.81	56.6	25.67	1.08	76.6	905	76
Italy	0.87	7.74	81.01	108.68	41.3	22.30	0.00	44.1	20194.5	42
Netherlands	0.92	8.99	91.33	295.77	52	40.08	6.11	43.7	11304.5	52
Poland	0.83	7.12	79.10	85.99	35.0	15.61	18.27	46.9	4543.5	31
Portugal	0.82	7.92	87.07	63.97	32.1	23.84	-1.69	70	1704.5	48
Romania	0.79	6.54	72.53	42.28	27.9	17.33	-2.33	32	1631	32
Slovakia	0.83	7.35	83.49	76.55	45.9	15.52	6.29	59	1277.5	40
Slovenia	0.87	7.88	76.85	188.47	26.0	24.96	2.57	52.7	844	40
Spain	0.87	8.02	84.21	78.89	55.4	25.57	1.55	40.2	8389	41
Sweden	0.89	9.73	87.63	365.10	63.0	32.55	24.03	49.8	4677.5	57
United Kingdom	0.89	8.21	85.39	245.61	62.2	35.73	5.00	42.4	25372.5	57
Average value	0.86	7.98	83.32	187.25	41.54	26.79	8.36	51.38	7151.41	45.69

The results of the cluster analysis are presented in the dendrogram below (Figure 1). The four clusters are defined and described in further detail in Table 3.

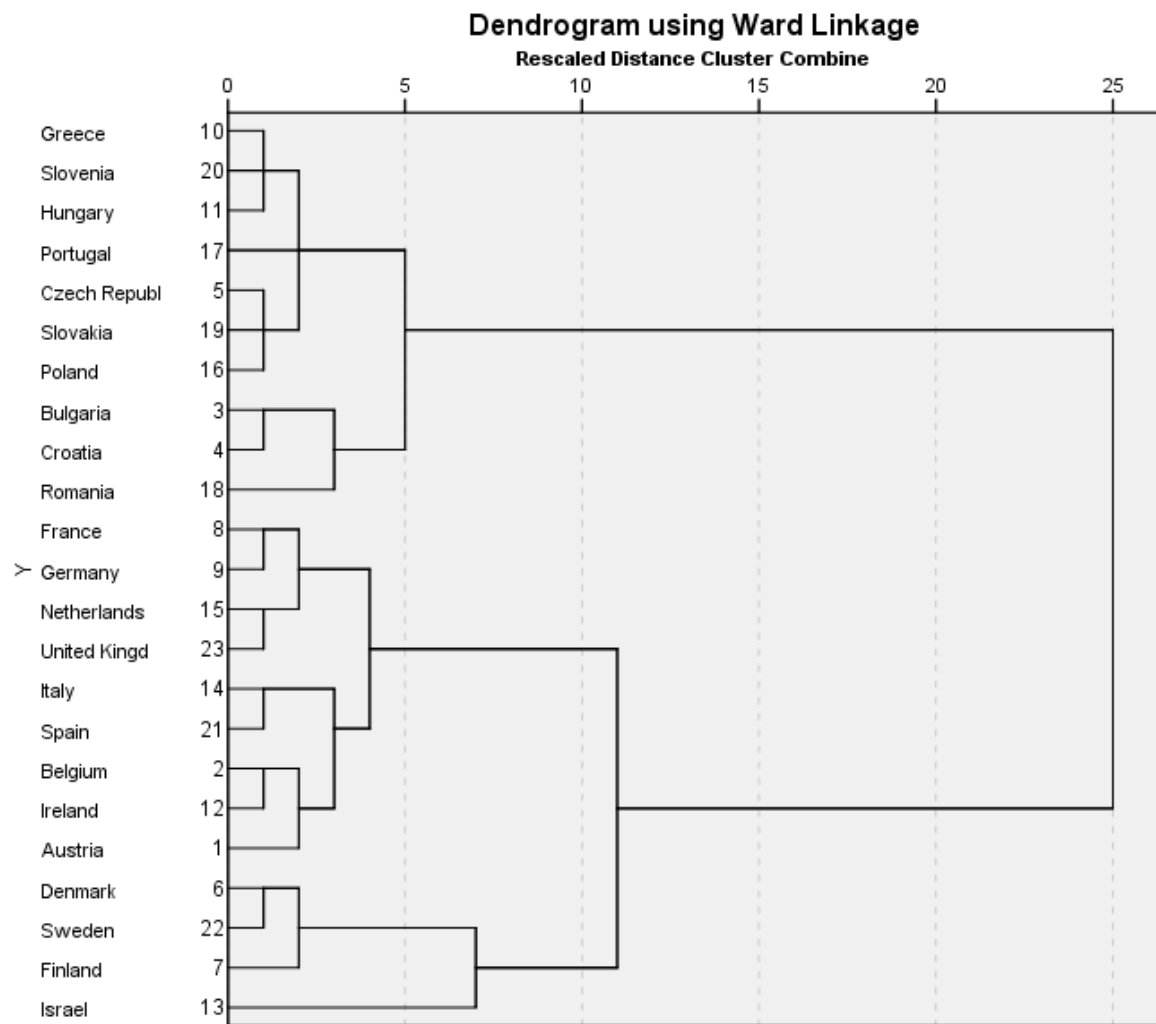


Figure 1. Dendrogram showing clusters of countries grouped according to similarities in inclusiveness, market characteristics, media culture and globalization.

Table 3. Clusters in Digital Mediascapes.

Cluster	Countries belonging to the cluster	Cluster characteristics
Cluster 1 (Eastern Europe, Greece and Portugal)	Bulgaria, Croatia, Czech Republic, Greece, Hungary, Poland, Portugal, Romania, Slovenia, Slovakia	Lower political and social inclusiveness, lower globalization, less developed digital media market and less open creative economy, higher TV concentration
Cluster 2 (Western Europe)	Austria, Belgium, France, Germany, Ireland, Italy, Netherlands, Spain, United Kingdom	High social and political inclusiveness, higher globalization, higher to moderately developed digital media market, low TV concentration, and open creative economy
Cluster 3 (Scandinavia)	Denmark, Finland, Sweden	High political and social inclusiveness, higher globalization, highly developed digital media market, moderately open creative economy and TV concentration
Cluster 4 (Israel)	Israel	Lower political and higher social inclusiveness, lower globalization, moderately developed digital media market (but highest social media penetration), less open creative economy and highest TV concentration

Four clusters emerged. All Eastern European countries, together with Greece and Portugal, form the first cluster or group. These countries have the lowest Human Development Index (HDI) and democracy scores when compared to other European countries. These countries are also less globalized (with a globalization index lower than the average of 83, but with the exception of Czech Republic, Hungary, and Portugal). Moreover, most of the countries in this group have less developed media markets in terms of lower than average newspaper circulation and digital media penetration. For example, Romania has the lowest newspaper circulation of all countries with only 42 (per 1,000 adult citizens), while Austria has the highest circulation of 418 (per 1,000 adult citizens). Bulgaria has by far the lowest smartphone penetration: only 9% of the population of that country owns a smartphone. Data on cultural trade, further, point to a less developed and less open creative economy. The countries in this cluster

have higher television concentration when compared to other European countries. For example, in Bulgaria, Croatia, and the Czech Republic, the three largest channels have combined audience shares above 60%, in Portugal above 70%.

European countries that did not experience socialism cluster in the Western European group. These countries have higher HDI, democracy and globalization values as well as highly developed media markets. These countries also have more fragmented television markets (lower television concentration) and more developed and open cultural economies. Most of the countries in this cluster have television concentration below the C3 of 51%, which is the average for countries in our digital mediascapes sample. There are exceptions to this model: Italy and Spain have lower than average newspaper circulation and less developed digital media markets in some aspects (fixed telephone change is 1.5% for Spain and 0% for Italy; 8.3% is the average reduction in the number of fixed telephone connections in the 23 analyzed countries). This is in spite of the fact that, according to Hallin and Mancini (2004), Italy and Spain belong with Greece and Portugal in the polarized pluralist Mediterranean model (this proximity was confirmed by our own research [Peruško, Vozab, & Čuvalo, 2013], and by Brueggemann et al. [2014], with the exception of Portugal, which in both cases constituted a separate cluster). In the present analysis, more-developed creative economies, lower television concentration and higher HDI separate Italy and Spain from the other Southern European countries.

The Scandinavian countries form the third cluster. The stability of this regional grouping across different operationalizations of media systems is confirmed in our previous research (Peruško, Vozab, & Čuvalo, 2013) and in Brueggemann et al. (2014). Here, we find the highest values of digital media penetration. Sweden has the highest smartphone penetration (63% of the population owns a smartphone), and countries in the Scandinavian cluster have the largest declines in fixed telephone use (Finland leads with 35%). Newspaper circulation is very high, and digital media markets are highly developed, as well. Denmark, Finland, and Sweden have some of the highest newspaper circulation rates (271, 365, and 393, respectively; 187 is the average for all countries in the analysis). Denmark has the greatest fixed broadband Internet subscription (40%); Denmark and Sweden are in second and third place for social media penetration (58% and 57%, respectively). However, these countries do not have as fragmented media markets as other Western European countries, probably due to the stronger position of public-service television. Curran et al. (2009) describe the media system models of Finland and Denmark as public-service models, in which media regulation aims to influence audience practices in order to secure large audiences for public broadcasters. In the Scandinavian countries, the creative economy is moderately open and developed. These countries, further, have the highest democracy scores and very high HDI and globalization values.

The cluster analysis showed that Israel is in a category by itself. Israel has higher than average HDI score, but lower democracy and globalization scores. Israel leads in television concentration (C3 is 76) and social media penetration (76% of the population), and is an outlier compared to all other countries in this regard. Although a leader in social media penetration and with higher smartphone penetration, Israel has lower fixed telephone change and a less developed and open creative economy. Israel's newspaper circulation is around average (193; average is 187).

Bivariate correlation analysis was performed to assess the relationship between the variables constituting digital mediascapes (Pearson's R and significance of relationships are reported in Table 4). The analysis showed a strong and significant relationship between HDI and democracy, globalization, newspaper market, smartphone penetration, and broadband Internet; and a moderate relationship between HDI, creative economy, and social media penetration. Democracy has a strong and significant correlation with globalization, newspaper circulation, smartphone penetration, and broadband Internet—and a moderate relationship with fixed telephone change. The correlation between system inclusiveness indicators and some aspects of digital mediascapes support the hypothesis that inclusive institutions facilitate the development of digital media markets.

Table 4. Correlation Between All Digital Mediascape Variables (* $p \leq .05$; ** $p \leq .01$).

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. HDI	1									
2. Democracy	.82* *	1								
3. Globalization	.62* *	.70* *	1							
4. Newspaper market	.64* *	.77* *	.46* *	1						
5. Smartphone penetration	.76* *	.72* *	.62* *	.48* *	1					
6. Broadband Internet	.74* *	.68* *	.52* *	.61* *	.48* *	1				
7. Fixed telephone change	0.21	.55* *	0.21	.55* *	0.25	0.16	1			
8. TV concentration	-0.19	-0.09	-0.15	-0.08	-0.2	-0.19	0.15	1		
9. Creative economy	.50* *	0.21	0.16	0.17	0.28	.52* *	-0.25	-0.47* *	1	
10. Social media	.44* *	0.39	0.33	0.34	.55* *	.45* *	0.12	.44* *	-0.07	1

Institutional Frameworks and Audience Practices

The following analysis estimates the effects of individual-level and structural-level factors on media use. Multilevel or hierarchical data analysis is the most suitable procedure to assess micro/macro issues or the "context or setting of communication, with attributes of the context at the higher level and the individuals or communication at the lower level" (Luke, 2004, in Slater, Snyder, Hayes, 2006, p. 377). We employed hierarchical multiple regression to estimate the effect of individual-level variables (gender, age, education, and income) on media practices in the first-level regression model, and we added

structural variables relating to the digital mediascape clusters in the second-level regression model. The nine countries included in the comparative study belong to four clusters identified in the first phase of the analysis: Croatia, Hungary, Poland, and Portugal to Cluster 1; Belgium, Germany, and Italy to Cluster 2; Denmark to Cluster 3, and Israel as Cluster 4. The cluster variable was dummy-coded for the regression analysis, with Israel serving as a reference. Media practices (television viewing time, digital television viewing time, newspaper reading time, and Internet news site reading time) were regressed on individual variables (gender, age, education, and income) in the first-level regression model. Individual and structural variables (the digital media system clusters) were combined in the second-level regression model to examine the full sample of European media audiences.

We performed hierarchical multiple regression analyses to explain the effect of individual and structural variables on media practices, and ANOVA analyses to explain differences in media practices across the four structural clusters of countries.

Dependent variables are the minutes per day of self-reported media use through different media platforms: television set, television on a computer or mobile phone, newspapers or magazines in the printed version, and newspapers or magazines on the Internet. The original variables measured "watching television on a computer" and "watching television on a mobile phone" separately. These variables were moderately positively correlated ($0.328, p \leq .01$) and were recoded into a single variable. The original variables in the dataset had only values of time spent with media; cases that did not use media were coded as missing, and variables were transformed so that no media use was recoded as zero minutes spent with media. Dependent variables were chosen to reflect the old/new media distinction: printed newspaper vs. Internet news, and television set vs. television on computers and mobile phones.

The analysis was designed to establish how economic, social, political, and technological developments and structures of media markets affect media use through "old" and "new" platforms, respectively. ANOVA analysis showed a significant effect of the digital mediascapes clusters on all types of media use. As the assumption of homogeneity of variance was violated, the Brown-Forsythe F ratio is reported for differences between country clusters in watching television on a TV set ($F=59.21, df=3, p<0.01$), watching television on computers and mobile phones ($F=18.25, df=3, p<0.01$), and reading Internet news sites ($F=150.13, df=3, p<0.01$). Country clusters also have a significant effect on the reading of printed newspapers ($F=6.81, df=3, p<0.01$).

Adding structural-level variables to the model explains a greater amount of the variation in all four types of media use than just the individual variables in themselves: individual variables explain 53% of the variation in viewing television on a TV set, while a combination of individual and structural variables explains 64%; for viewing television on computers and mobile phones, individual variables explain 17% and the combination with structural variables 27%. For printed newspapers, the corresponding figures are 36% and 40%, and for Internet news sites they are 12% and 42%, respectively. Both models (individual-level variables only and individual-level and structural-level variables combined) predict all the dependent variables to a statistically significant degree.

Results of the second-level regression model (individual-level and structural-level variables combined) are presented in Table 5 below.

On the individual level of the cross-country sample, men are significantly more likely to consume printed newspapers, Internet news sites, and television on computers and mobile phones than women. Consumption of printed newspapers and Internet news sites, and viewing television on a TV set rises with age, while viewing television on computers and mobile phones decreases with age. Respondents with more education are less likely to watch television on a TV set, and more likely to read news on any platform. Respondents with lower income are more likely to watch television on any platform than those with higher income.

The media system clusters have a significant effect on television viewing on both "old" and "new" platforms. Watching television on a TV set is more likely in the European clusters than in Israel, but not when it comes to new platforms. In the East European and West European clusters, respondents are less likely to view television on new platforms than in Israel, but it is more likely for Scandinavians to watch television on new platforms.

Surprisingly, it is significantly less likely for media users in the Scandinavian cluster to consume printed newspaper. However, Denmark is the only representative of Scandinavia in the sample, so results might be different if other countries were included. In Elvestad and Blekesaune's (2008) study, Denmark is an outlier among Nordic countries that traditionally have a high percentage of newspaper readers. As Norris and Inglehart (2009) show, newspaper consumption is the highest in the Nordic countries and in smaller European welfare states, perhaps due to the structure of the newspaper industry and to public policies in the area.

Unlike the Western European and Scandinavian countries, respondents in the Eastern cluster are more likely to consume Internet news sites. Perhaps this could be explained by the opening of previously closed and centrally controlled media systems to a variety of media outlets that better cater to audience needs. Sun, Chang, and Yu (2001) described that after the liberalization of the media market in China, audiences turned to consumer-oriented media rather than to politically and ideologically burdened Party newspapers. In our previous analysis (Peruško, Vozab, & Čuvalo, 2013), we found that post-socialist countries are still characterized by a less-independent journalistic culture and by stronger party and owner influence over media. This political influence on East European media, when compared to other European media systems, might be diverting audiences to alternative, Internet-based sources of information.

Table 5. Regression Coefficients in the Third Level for Media-Use Variables as Dependent Variables (* $p \leq .10$; ** $p \leq .05$; * $p \leq .01$).**

	Television set	Television on computer and mobile phone	Printed newspaper	Internet news site
Constant	50.134	96.279	-1.848	26.379
Gender	3.588	(-)6.465***	(-)1.41**	(-)7.057***
Age	1.826***	(-)1.009***	0.464***	0.074**
Education	(-)6.617***	0.628	0.745**	1.963***
Income	(-)4.938***	(-)4.054***	0.33	0.65
Eastern	39.711***	(-)17.361***	1.842	5.521***
Western	30.881***	(-)6.956*	0.366	(-)10.078***
Scandinavian	33.634***	12.552***	(-)4.411***	(-)13.182***
1 st level regression model r^2	0.53	0.17	0.36	0.12
2 nd level regression model r^2	0.64	0.27	0.4	0.42

The findings demonstrate that the country clusters constitute significant factors in explaining differences in media use, even if additional studies in a larger set of countries should be conducted to assess the effect of different factors. The most noticeable difference is that countries in the first cluster of eastern and southern countries have lower use of the "old" form of television and of newspapers. As we have previously observed, these countries are less politically and socially inclusive, have concentrated television markets and lower newspaper circulation, and have less of an independent journalistic culture and stronger party and owner influence over media (Peruško, Vozab, & Čuvalo, 2013). Thus, we assume these audiences may have greater incentives to switch to alternative media sources via the Internet and mobile platforms once the digital market opens up. Perhaps this might explain why some countries have a higher or similar frequency of Internet news consumption (Hungary, Israel, and Croatia) and of television on new platforms (Israel and Portugal) than the technologically more developed, "democratic-corporatist" western countries.

Meulemann (2012) suggests that television viewing is less frequent in so-called "organized systems" (democratic-corporatist and polarized pluralist), where media supply offers more choice in information and, therefore, may reduce preferences for the "entertainment medium" of television. On the other hand, media dependency theory suggests that former communist countries would have higher media use (Meulemann, 2012). The results of our analysis suggest otherwise: watching television is less frequent in the southern and eastern countries than in "democratic-corporatist" Denmark and Germany (for example, mean frequency in minutes for Israel is 88.5, and for Portugal, 104.7; while for Denmark it is 132.2, and for Germany, 142.3—See Table 6). Hasebrink (2012) offers several explanations, namely, that television use depends on cultural differences, country and market size, and on differences in how the prime time of television is integrated into everyday routines. Culture and even climate may be important

in explaining different patterns in viewing television. The digital media system clusters follow geography (Eastern and Southern Europe, Western Europe, the Scandinavian countries, and Israel), and people in the Eastern and Southern clusters are perhaps less likely to watch television at home because a warmer climate promotes spending leisure time outdoors.

Table 6. Means and Standard Deviations of Media-Use Variables for Each Country (minutes per day).

		Television set	Television on computer and mobile phone	Printed newspaper	Internet news site
Israel	Mean	88.5	41.2	17.9	27
	Std. Deviation	85.5	112.5	32	42.5
Portugal	Mean	104.7	47.1	15.8	22.2
	Std. Deviation	104.3	132	26.9	36.8
Hungary	Mean	121.7	13	16.1	33.5
	Std. Deviation	120.1	65.9	38.3	60.7
Italy	Mean	107.1	17.3	16.2	21.1
	Std. Deviation	95.1	49.5	33.1	43.5
Denmark	Mean	132.2	49.4	14.8	14.4
	Std. Deviation	118.2	119.9	28.3	26.3
Germany	Mean	142.3	58.7	19.4	11.4
	Std. Deviation	112	131.2	28.3	23.9
Belgium	Mean	157.7	5.5	23.9	18.7
	Std. Deviation	118.6	24.5	35.1	24.5
Poland	Mean	122.4	28.2	21.3	24.5
	Std. Deviation	110.7	78.8	31.1	40
Croatia	Mean	157.1	22.3	20	49.9
	Std. Deviation	120	77.3	38.2	50.3
Total	Mean	125.7	31.7	18.3	24.8
	Std. Deviation	112.1	97	32.7	42

Conclusion

In summary, the findings of this study have supported our theoretical conceptualization of digital mediascapes through four dimensions of inclusiveness, digital media markets, media culture, and globalization. We have also documented the impact of the macro-level of institutional structures on micro-audience practices: the various digital media systems have a significant effect on all aspects of media use. Media use is explained, simultaneously, by individual and structural factors, and in the case of Internet news consumption, the structural factors seem to explain more variance than individual factors.

We must also point out some limitations of our study. The results of the cluster analysis depend on the actual countries included in the analysis, as much as on the dimensions of comparison and the theoretical underpinnings guiding the clustering. If a larger dataset of countries were taken, countries might regroup (all European countries might even end up in the same cluster). Additional studies of media use in a larger set of countries will be helpful in interpreting the effects of different individual and structural factors on media use.

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