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Spanish Academic Research Groups in Communication¹

Abstract

The purpose of this study is to catalogue Spanish academic research groups in the field of communication. The knowledge areas covered are: Audiovisual Communication and Advertising (105), Journalism (675), and Library and Information Sciences (040). The universe consists of 55 universities grouped in 4 geographical areas. A descriptive analysis is offered based on 12 variables related to three dimensions: institutional affiliation and type of group; specialisation of group; and group composition. The technique chosen was a content analysis of the institutional websites of all the universities (private and public) that offer communication studies. The sample is made up of 213 academic research groups and 1,158 lines of research. Findings include a gender imbalance in research group directors and a standard group size of 10 members. The aspects that characterise the research of the groups are identified by geographical area and knowledge area. The results reveal a remarkable divergence in the research interests of the groups. The most common groupings of research terms are also presented. This research could contribute to the reformulation of existing taxonomies in the scientific field of communication based on the actual research practices of groups and on the selection of topics made by their members.

Keywords

Research groups, advertising communication, audiovisual communication, journalism, higher education.

1. Introduction

Scientific research groups and their underlying structures have been a subject of study in the sociology of science for some time now (Lamo, González & Torres, 1994; Valero, 2004). Metastudies in the field of communication reveal a current interest in the consolidation, organisation, structuring and defence of an independent scientific field that is sometimes called into question due to its interdisciplinary nature. Research on the production of a specific country, scientific discipline or institution is more common in the academic literature than studies on research groups. The complexity involved in delimiting the concept of the research group may be one of the reasons for the scarcity of studies, along with the divergent nature of the information on such groups, their structure and productivity, which are treated differently in each institution.

The association of researchers around topics of shared interest represents the basic unit necessary for a collaborative research initiative with the capacity for expansion beyond the

¹ Translated by Martin Boyd.

institutional boundaries of its members. In cases like Europe and the United States, there is evidence of a certain degree of consolidation of contact networks connecting colleagues, relatively independent of the institutions where they work. In these contexts, the professional profile of the researchers is basically determined by the recognition they receive from colleagues in their field of specialisation (Arechavala & Díaz, 1996) and by the prestige of the member institution where they are based (Grediaga, 2007). Recognition by other academics would help confirm the specialisation of a group and its members in a particular area, while at the same time enhancing the reputation of the institution where they carry out their research.

In Spain, studies on research groups are common in the field of medicine (Bordons & Zulueta, 2002; Valderrama-Zurián *et al.*, 2007), and focus on the interdisciplinary nature of the groups, their size, and their composition by means of surveys of researchers or networks of co-authorship in the articles of a scientific journal.

1.1. *Research group definition, classification and structure*

Robledo, Tamayo and Monsalve (2005) define a research group as an organisation specialising in the generation and creative application of knowledge, constituting what would be referred to as a *knowledge enterprise*. From this perspective, the group, as an enterprise, conducts research to transfer (produce) knowledge intended for a specific audience.

In Colombia, a research group is defined as:

A group of people who meet to conduct research on a given topic, formulate one or more issues of interest, outline a short- or medium- term strategic plan to work on and produce results in the form of knowledge about the topic in question. A group exists whenever there is evidence of the production of tangible and verifiable results arising from research projects or other activities conveniently stated in a duly formalised action plan (projects) (Colciencias,² 2002, p. 8).

Research groups can be classified from different perspectives based on results (outputs), inputs, or psychosocial characteristics (Rey, Martín & Sebastián, 2008). Other authors point to the structure of the group as an internal organisation and the distribution of roles (Hamui, 2010), as well as its intellectual capital.

Scientific outputs are studied by analysing all kinds of variables, such as the history of the group, the quantity and quality of its publications, the number of national and international projects obtained, the amounts secured for those projects, the continuity of the group over time, interdisciplinary collaborations, technological resources, transfer or dissemination of results, or the number of patents obtained.

In terms of its function, the research group represents the key operative unit of all post-modern science (Gómez & Jaramillo, 1997, p. 386); research groups are functional organisational units, directly associated with scientific research processes (Rocha, Sempere & Sebastián, 2008), and are considered the basic unit of science and technology systems (Méndez-Vásquez *et al.*, 2012).

In social terms, the research group is a collective of individuals who conduct interdependent tasks, who share responsibility for outputs, who view themselves and are viewed by others as an indivisible social unit embedded in one or more larger social systems (department, research centre, company), and who manage their relations through organisational frameworks (Cohen & Bailey, 1997). The research group is thus considered a collective of scientists who collaborate on the proposal and development of a research project, sharing material and economic resources.

² Colciencias is the Administrative Department of Science, Technology and Innovation at the Instituto Colombiano para el Desarrollo de la Ciencia y la Tecnología Francisco José de Caldas.

Research groups are also referred to indistinctly as teams in the documentation reviewed. In most public processes for requesting funding for R&D&I projects in Spain, the circumstances make it possible to distinguish groups from teams: a group would be an associative unit originated by a PI with both lines of research and projects, while a team would be a grouping of researchers around a particular project. A group is intended as a medium / long-term association, while a team is situational.

According to Gaviria, Mejía and Henao (2007), it is important to study research groups in their context as they not only depend on their members but on the university system, which is in turn made up of other systems, like the national research system, the research chairs, the different regional assessment systems in some cases, or the European assessment system. All of these interact with each other and inevitably influence the way research groups function.

1.2. *Establishment, duration, leadership, strategy and efficiency of research groups*

Londoño (2005, p. 189-190) identifies a series of characteristics that determine the formation of a research group (sense of belonging framed in heterogeneity, diversity, openness, dynamism and flexibility) and its duration over time (sense of belonging framed in planning, strategy, guidance and that which gives the group meaning). He also highlights the richness offered by the heterogeneity of its members, identifying this as something particularly positive, as it fosters complementarity and desirable dynamics. Considering only size and composition in definitions of the research group can disrupt the group order established by the scientific community, with consequences that are not always effectively anticipated, according to Rocha, Sempere and Sebastián (2008).

The research group has also been studied by Moreland (1987) as an organic structure immersed in a specific environment. Moreland identifies three functions in relation to the type of social integration fostered by the research group: environmental integration (neighbourly relations, coexistence and networked social relations), behavioural integration (the members depend on each other to achieve the objectives and meet needs) and affective integration (relationships between members, relationship with the leader, or shared interests/passions in projects or topics).

The duration of the group over time depends, according to Colciencias (2002), on the outline of a strategic long –or medium– term plan that would make it possible to demonstrate the production of tangible and verifiable results of research projects and other activities stated in a formalised action plan (projects). From the perspective of organisational strategy, Londoño (2005, p. 195) specifies three indicators that would reveal the existence of a strategic plan with a defined approach in any research group: the definition of lines of research, the existence of projects, and the existence of the resources necessary to follow through on those projects (funding). The strategic dimension is perhaps one of the most difficult aspects to study. Identifying evidence of a strategic approach would make it possible to confirm the consolidation of the group as a stable structure working towards internal objectives (an institutional grouping aimed at attaining internal recognition for productivity that would not be achieved individually) or external objectives (unification of professional goals or research interests in order to attain a better positioning in calls for proposals to receive funding, supported by the group's larger scope, experience, complementarity, interdisciplinarity or other shared interests). Conversely, if the participation of members is associated with increased prestige and greater visibility, this has negative effects on the likelihood of long-term commitment and continuity (Cuadros, Martínez & Torres, 2008).

Studies by Sossa *et al.* (2011) provide evidence that social science groups do not have a defined innovation strategy that could be applied in their projects, especially in questions of technology monitoring on specific subjects. There is an apparent contradiction between collecting information on the consumption habits of customers (present in more than 50% of

groups) and gathering information on environmental trends (present in more than 75% of groups).

Leadership is a significant factor for the satisfaction and productivity of the groups (Backman & Secord, 1979). Research group leaders can be divided into two categories: the intellectual innovator, and the science entrepreneur (Gómez & Jaramillo, 1997, p. 387; Daza & Arboleda, 2007). The leader needs to understand the individual needs of the group's members, to take responsibility for their intellectual stimulation and to influence the generation of group values that make the group more effective (Varela, 2001, p. 79). The Principal Investigator (PI) is defined as the most productive author within the group; although this is not always the same person as the actual group leader, it is very common for the most productive author to be the leader (Zulueta, Cabrero & Bordons, 1999, p. 335). Arechavala & Díaz (1996) identify the profile of the group leader as the group's promoter and creator as a significant success factor. The pre-existing social networks that the leader could bring to the group along with his or her role as a mentor / trainer of young researchers appear to be determining factors for a productive and successful group. To retain their leadership positions over time, group leaders need to have resources and skills that are inimitable and highly distinctive. The resources possessed by research groups also have an obvious influence on their success and development. These resources may be personal (skills), reputational, cultural, financial or technological.

To study the efficiency of academic groups, a range of different procedures have been used. One of the most common has been Data Envelopment Analysis, or DEA (Johnes & Johnes, 1995; Korhonen, Tainio & Wallenius, 2001; Jiancheng & Junxia, 2004; Arenas, Soto & Rivera, 2004; Restrepo & Villegas, 2007; Pino *et al.*, 2010). Originating in the 1970s (Charnes, Cooper & Rhodes, 1978), DEA is a non-parametric method for measuring the relative efficiency of organisational units in situations where there are multiple inputs and outputs. DEA is a technique that uses the data on resources used and results obtained for a set of Decision-Making Units (DMUs) with the objective of evaluating the relative efficiency of each one. The selection of input and output variables and the quality of the information available are decisive for its effective application. The information must be reliable and have a good level of disaggregation, according to Anderson *et al.*, 2007. The DEA method makes it possible to measure the efficiency of research groups and their best practices, as well as to identify areas for improvement.

Restrepo and Villegas (2007) describe how Colciencias has been classifying Colombian research groups since 2004 using the *ScientiCol* index, considering the following variables: outputs or results that generate new knowledge (research articles, research books, patented or registered technological products or processes, etc.), outputs related to researcher training (theses, degree projects and participation in academic graduate programs), and products related to knowledge transfer or societal appropriation (technical or qualified consulting services, products that share or disseminate research results).

Various authors (Pino *et al.*, 2010; Wang & Huang, 2007; Meng *et al.*, 2008; Groot & García-Valderrama, 2006; Thursby & Kemp, 2002) agree that the following are indicators of the successful efficiency of research groups: revenues from R&D&I, number of researchers, technicians and support staff, patents and scientific publications. Other indicators include factors like the existence of shared objectives in the group's work; expectations and roles performed by each member; and values and norms developed by the group where there are unwritten codes and where it is implicitly understood that members will get involved and work to promote them. Factors affecting success include years in existence, scientific and technological production, experience in interdisciplinary projects, and information and communication structures. Interdisciplinarity is an important factor that acquires greater value when bidding for projects and that proves decisive in the training of future professionals and researchers. In calls for proposals in Spain, interdisciplinary and transcultural projects

tend to be given priority. Research projects conducted by groups from different areas and disciplines generate products and applications that are more appealing and interesting to the target market and to society in general.

Research on co-authorship of articles and other scientific documents can also reveal interesting information about research groups. This was the approach chosen by Méndez-Vásquez *et al.* (2007), who adopted MAPIN algorithms, a tool that groups authors according to frequency of their co-authorship, facilitating the construction of a network of shared publications and making it possible to work with the quality of that network and the topics it studies. The quality of the network is estimated based on three variables: the affinity of authors with their group; the proportion of relationships within the group in relation to the total; and the degree of resulting cohesion of the group's members. In this way, they were able to identify (in the medical sub-discipline of cardio-cerebrovascular studies) the number of research groups responsible for 44.9% of the total number of scientific documents included in their study and for 53.6% of the total number of quotations. The authors conclude that the use of these algorithms makes it possible to describe the retrospective evolution of the research groups, break them down into sub-groups with their own personality (in the case of macro-groups), identify research topics (in addition to publications and quotations received), identify which ones are collaborations by the group with other research centres, and even propose a leader, who is not necessarily the author of all the group's publications. Several studies on co-authorship in communication have been identified, focusing on a journal (López-Ornelas, 2010), on a specific database like Scopus (Costa-Sánchez, 2017) or on a selection of journals in the field (Fernández-Quijada, 2011; Escribá & Cortiñas, 2013).

The delimitation of research groups based on co-authorship rates is also an approach chosen by Zulueta, Cabrero and Bordons (1999). These authors effectively characterise research groups by their composition and publication habits using information on these variables: group size (number of researchers), production (number of documents in the period analysed), productivity (production of the group based on the number of researchers or the number of documents per group author), national and international collaboration rates (percentage of documents in national and international collaborations), basic or applied nature of research (considering the journals where the work is published), thematic specialisation and expected impact factor (average impact factor of the group's production) in the main sub-field of publication, in the discipline and in the research centre. The study of these variables makes it possible to establish general patterns of behaviour for the groups and to explore their variations considering the type of area or research conducted by the authors.

The limitations of study approaches based on co-authorship stem from the number and type of documents and from the database used as a reference to locate the scientific texts to be studied. These prove ineffective for identifying emerging groups. In communication, there are already studies that demonstrate the persistent under-representation of this scientific field in reference databases: Scopus contains only 30% and WoS only 22.7% of the documents found in Google Scholar (Harzing & Alakangas, 2016). Any rigorous researcher knows that you cannot –and should not– ignore Scopus and WoS, but it is important to be aware of the specific levels of representation of the social sciences in each database.

The study of research groups requires the selection of other methods in order to tackle their complexity in a comprehensive way. Vásquez Rizo (2010) uses triangulation (analysis of documents and archives; interviews; the semantic differential technique) to select the methods for his research on groups, also centred on Colombia, focusing on the creation of a model of indicators aimed at measuring and enhancing productive capacity. Irrespective of the study method chosen, the detection of factors and elements of change in the management of the processes and dynamics of academic research groups in order to identify patterns and new indicators for evaluating scientific activity is a task that is yet to be done, as Izquierdo, Moreno and Izquierdo (2008) clearly demonstrate.

The experience of the group can be measured in years and in scientific production, indexed publications or patents, although these should not be the only parameters considered in a rigorous, complete and realistic assessment. A consolidated and experienced research team increases the chances of satisfactorily completing a project (Cuadros, Martínez & Torres, 2008). In competitive calls for proposals in Spain, it is common for the consistent and prolonged history of a group, for example the contribution of publications on the same line of research, to be valued positively and viewed as a guarantee of reliable research. Consistency is also understood as a critical trajectory that generates capacities that endure over time (Chiesa & Manzini, 1997). The reputation of the founders, past experiences and financial stability are factors have been found to be directly proportionate to the years of existence of the group.

Public policies are needed that foster scientific collaboration, greater investment in R&D, ongoing education of human resources, stronger connections between universities, companies and the State, greater industrial participation in funding, and the application of research results. Moreover, at the institutional level, obstacles have been identified such as a lack of routine, insufficient information and communication about cooperation opportunities, a shortage of support staff for project management and administration, a lack of industrial, social and governmental contacts outside the country, inadequate understanding of the discourse on the European Research Space, the complicated and bureaucratic processes of the calls for proposals (Nupia, 2006), and a scarcity of networks (Díaz, 2005). Research groups that work in networks have better chances of success because they are able to transfer previous experiences in different calls for proposals and manage multiple bids at the same time.

Involvement, analysis, expertise, experience and competence in the different internal, regional, national and European calls for proposals are determining factors for group activity.

Some authors, like Gaviria, Mejía and Henao (2007), point out that research groups engage in their own practices and routines of knowledge management; however, these practices are not carried out explicitly and consciously –although they handle information, technical data, procedures and documents, among other elements– and the knowledge is not effectively formalised and structured, resulting in disorganised bibliographical databases that are not exploited effectively for new research, a lack of awareness of new work methods, and the absence of communities of practice or of real capitalisation on the knowledge produced by the groups themselves.

University research groups, conceived of as organisations for the generation of new knowledge, engage in practices like the management of information, documents and knowledge. For such practices, Uribe-Tirado, Melgar-Estrada and Bornacelly-Castro (2007) advocate platforms like Moodle or similar resources for sharing information. The capacity of research groups as entities for the creation and transmission of knowledge makes their management an obligation that still needs to be developed, systematised and perfected. This can be achieved through the application of knowledge management models in processes of research and the generation of scientific knowledge, with the aim of increasing competitiveness and response capacity in terms of innovation and scientific advances (García-Alisina & Gómez-Vargas, 2015). According to these authors, knowledge management is a systematic process for creating, compiling, organising, disseminating, using and exploiting knowledge to enhance the performance of individuals in any organisation. They thus propose a series of recommendations, such as, firstly, formalising the structures of research groups by documenting the profiles and roles of their members in order to capitalise on the knowledge of each one, and secondly, training the members of the group in techniques and tools for organising and accessing information. Third is the decisive importance of giving researchers guidance in knowledge management and ensuring that the university prioritises research groups in its corporate culture, providing them with the facilities necessary to

achieve their objectives. Researchers should have facilities to create research practice units, to improve relationships between groups and to know the profiles and publications of each one.

As is evident from the outline above, the study of research groups has had a rather erratic and disjointed history. Consequently, in this article we propose an initial approach, descriptive in nature, to the study of Spanish research groups in the scientific field of communication.

2. Methodology

The purpose of this study is to catalogue Spanish academic research groups in the field of communication. Three knowledge areas related to communication have been analysed: Audiovisual Communication and Advertising (105), Journalism (675), and Library and Information Sciences (040). The universe consists of 55 universities grouped into the four geographical areas defined in the MAPCOM³ database project (Area I: Community of Madrid, Castile-La Mancha, Castile and León and La Rioja; Area II: Galicia, Basque Country, Navarre and Aragon; Area III: Andalusia, Extremadura and Canary Islands; Area IV: Catalonia, Valencian Community, Murcia and Balearic Islands).

Three differentiated dimensions are considered in the study, with the following variables:

- Institutional affiliation and type of group. The following 6 variables are analysed: university; autonomous community; MapCom area, knowledge area name; age (date of creation), and type of group (emerging or consolidated).
- Specialisation of group. The following 3 variables are analysed: group name, research topics (specific isolated subjects), and lines of research (groupings or combinations of topics).
- Composition of group. The following 3 variables are considered: number of members, gender of each member, gender of PI.

Procedure: During the months of June and July 2017, the websites of each university were accessed using the Google Chrome web browser. Searches were conducted with the following terms: *Advertising, Public Relations, Journalism, Audiovisual Communication, Documentation, research group*⁴ and combinations thereof. The searches were conducted first on the institution's internal search engine, and then within the websites of the departments offering communication subjects that are catalogued in the institutional list of departments, and, finally, within the website of the research chair of each institution. In a second stage, the primary database was filtered and the groups and lines of research were reassigned using a dichotomous procedure (yes/no) according to the 7 categories of the reference taxonomy of Marzal, García and Humanes (2016) shown in Table 1. Each line of research or group could be assigned to more than one category.

³ The System for Research on Social Practices in Communication: Map of Projects, Groups, Lines of Research, Objects of Study and Methods (MapCom) is a project funded by Spain's Ministry of Economy and Competitiveness as part of the State Program for the Promotion of Scientific and Technical Research of Excellence, reference CSO2013-47933-C4-4-P, with Dr. José Luis Piñuel as PI and Dr. Javier Marzal as coordinator of Area IV.

⁴ The original search terms in Spanish were: *Publicidad, Relaciones Públicas, Periodismo, Comunicación Audiovisual, Documentación, grupo de investigación*.

Table 1: Reference taxonomy used. Source: Marzal, García & Humanes (2016).

CATEGORY	SUBJECTS INCLUDED
Fields of Communication	Studies of/about Strategic and Organisational Communication (and public relations)
	Film Studies
	Journalism Studies
	Radio Studies (Research)
	Television Studies
	Advertising Studies-Research (Advertising Communication)
	Comic Art
General Communication	Audience and Reception Studies
	Theories and Research Methods in Communication
	History of Communication
	Philosophy of Communication
	Communication and Sociocultural Studies (Communication)
	Regulations, Ethics and Laws
	Ethics of Communication
Communication and Technology	Communication and Digital Culture
	Digital Games (Game Studies)
	Communication, Technology and Development
Communication and Politics	Structure and Politics of Communication
	International Communication
	Political Communication (and Media)
	Communication and Democracy
	Political Economy of Communications
	Global Media Policy
	Post-Socialist and Post-Authoritarian Communication
	Public Service Media Policies
Media, Production and Discourses	Discourse Studies (Discourse and Communication) Narrative
	Production and Circulation of Content
	Media Industries and Production
	Media Production Analysis
Communication and Society	Mediated Communication, Public Opinion and Society
	Communication and Development
	Intercultural Communication and Folk Communication
	Interpersonal Communication and Social Interaction
	Popular, Community and Citizen Communication (Community Communication)
	Scientific and Environmental Communication
	Science and Risk Communication
	Media and Religion (Media and Islam)
	Crisis Communication

	Communication and Education (Media Education- Journalism and Education Research)
	Media and Sports
	Media and Cities
	Health (and) Communication
	Communication for Social Change
Communication and Collectives (specific audiences)	Diaspora, Migration and the Media
	Ethnicity and Race in Communication
	Gender and Communication (Feminist School)
	Lesbian, Gay, Transgender and Bisexual (LGTB) Studies
	Children, Adolescents and the Media

Sample: In the content analysis of the institutional websites of all the universities (private and public) offering communication studies, 213 academic research groups and 1,158 lines of research were identified.

Statistical analysis: SPSS was used to carry out a descriptive analysis (frequency and percentages) of the auxiliary variables mentioned above together with a characterisation analysis aimed at identifying the most common group profiles and the elements that characterise them.

3. Results

3.1. Institutional affiliation and type of group

The presence of research groups was identified in 86.6% (n=46) of the universities considered in the study (n= 55 universities with communication studies) as shown in Table 2. The average number of groups per university is 4.6 and the mean=3.

Table 2: No. of groups in each university. Source: prepared by authors.

University	No. res. groups
Universidad Complutense (UCM)	19
Universidad de Sevilla (US)	18
Universitat Autònoma de Barcelona (UAB)	12
Universidad de Murcia (UMU)	10
Universidad Francisco de Vitoria (UFV)	10
Universitat Pompeu Fabra (UPF)	9
Universidad CEU-San Pablo (CEU-USP)	8
Universidad de Alicante (UA)	7
Universidad de Málaga (UMA)	7
Universidad del País Vasco/Euskal Herriko Unibertsitatea (UPV/EHU)	7
Universitat Jaume I (UJI)	7
Universidad CEU Cardenal Herrera (CEU-UCH)	6
Universidad Carlos III (UC3M)	5
Universidad de Coruña (UDC)	5
Universidad de Extremadura (UEX)	5
Universidad de Salamanca (USAL)	5
Universitat Ramón Llull (URL)	5
Universidad Católica San Antonio de Murcia (UCAM)	4
Universidad de Castilla La Mancha (UCLM)	4
Universitat de València (UV)	4
Universidad de Almería (UAL)	3
Universidad de Cádiz (UCA)	3
Universidad de Granada (UGR)	3
Universidad de la Laguna (ULL)	3
Universidad de Navarra (UNAV)	3
Universidad Internacional de La Rioja (UNIR)	3
Universidad San Jorge, Zaragoza (USJ)	3
Universidad Santiago (USC)	3
Universitat de Vic (UVIC)	3
Universitat Illes Balears (UIB)	3
Universidad Antonio de NEBRIJA (UAN)	2
Universidad de Burgos (UBU)	2
Universidad de Zaragoza (UNizar)	2
Universidad Europea Miguel de Cervantes (UEMC)	2
Universidad Miguel Hernández de Elche (UMH)	2
Universidad Pontificia de Salamanca (UPSA)	2
Universidad Rey Juan Carlos (URJC)	2
Universitat de Girona (UdG)	2
Universitat Oberta de Catalunya (UOC)	2
Universitat Rovira i Virgili (URV)	2
Centro Enseñanza Superior Alberta Giménez (CESAG)	1
Universidad A Distancia de Madrid (UDIMA)	1
Universidad de Deusto (UDEusto)	1
Universidad de Huelva (UHU)	1
Universidad de Valladolid (Uva)	1
Universidad Politécnica de Valencia (UPV)	1
Total	213

Research groups are present in all of Spain's autonomous communities except for Cantabria and the autonomous cities. The Community of Madrid is home to 22% of the groups (n=47). The first four communities listed in Table 3 have 68% (n=144) of the research groups in Spain. However, the groupings by MapCom area, based on criteria of geographical proximity, reflect a different distribution, as shown in Table 4.

Table 3: No. of groups by autonomous community. Source: prepared by authors.

Autonomous Community	No. res. groups
Community of Madrid	47
Andalusia	35
Catalonia	35
Valencian Community	27
Murcia	14
Castile and León	12
Galicia	8
Basque Country	8
Aragon	5
Extremadura	5
Castile-La Mancha	4
Balearic Islands	4
Canary Islands	3
La Rioja	3
Navarre	3
Total	213

Image 1: Interactive map⁵ of groups by autonomous community. Source: MapCom website



⁵ The interactive map can be consulted here: http://www.mapcom.es/media/files/interactivo_mapa_grupos/index.html.

Table 4: No. of groups by MapCom area. Source: prepared by authors.

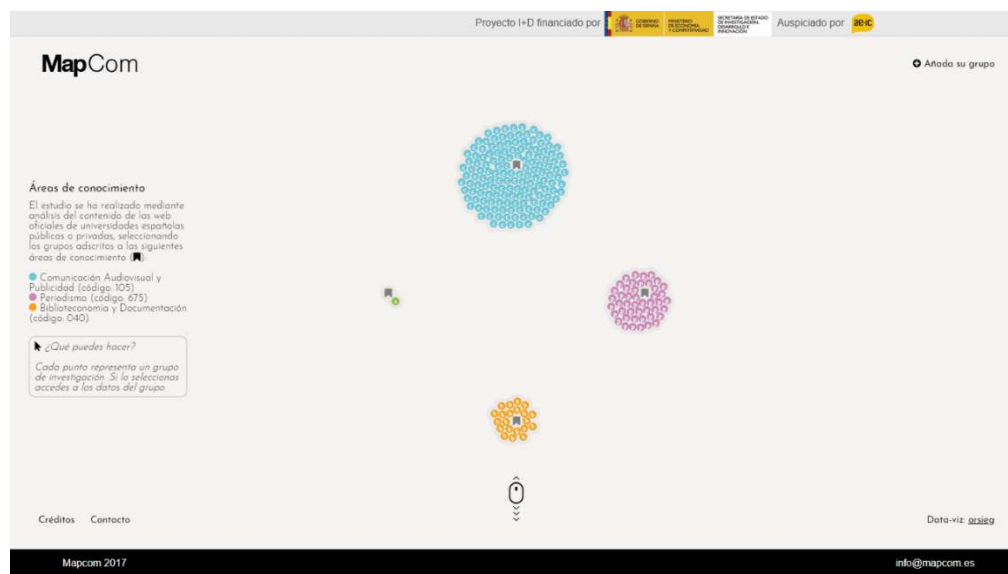
MapCom Area	No. res. groups
AREA I: Community of Madrid, Castile-La Mancha, Castile and León and La Rioja	66
AREA II: Galicia, Basque Country, Navarre and Aragon	24
AREA III: Andalusia, Extremadura and Canary Islands	43
AREA IV: Catalonia, Valencian Community, Murcia and Balearic Islands	80
Total	213

The groups associated with the knowledge area *Audiovisual Communication and Advertising* represent 68.5% (n=146), followed by *Journalism* (21.5%; n=46) and *Library and Information Sciences* (9.8%; n=21) (see Table 5).

Table 5: No. of groups by knowledge area. Source: prepared by authors.

Knowledge Area	No. res. groups
040 Library and Information Sciences	21
105 Audiovisual Communication and Advertising	146
675 Journalism	46
Total	213

Image 2: Density of groups by knowledge area on the interactive map. Source: MapCom website.



The public information on the research groups only included the year of creation in 24% (n=51) of cases. Among these are groups that have been operating since 1980 (37 years). Only 5 groups began their activity before the year 2000 (10%); the rest of the groups that specify this information began after 2000 (90%) with an average creation of 4 groups per year (see Table 6). 53% (n=27) of the groups whose year of formation is publicly accessible have been created in the last decade.

Table 6: No. of groups by year of creation. Source: prepared by authors.

Year of Creation	No. res. groups
1980	1
1992	1
1997	2
1999	1
2001	2
2002	1
2003	5
2004	3
2005	4
2006	4
2007	3
2009	5
2010	6
2011	2
2012	6
2013	1
2014	3
2016	1
(blank)	162
Total	213

The **consolidated or emerging status** of the groups is publicly stated in 13% (n=28) of cases, as shown in Table 7.

Table 7: Type of group. Source: prepared by authors.

Type of group	No. res. groups
CONSOLIDATED	20
EMERGING	8
(blank)	185
Total	213

3.2. *Specialisation of group*

The taxonomy of Marzal, García and Humanes (2016) was taken as a reference to classify the lines of research of the groups. The diversity of topics covered by each group explains their assignment to more than one taxonomic category (see Table 8).

Table 8: Classification of lines of research based on the taxonomy proposed by Marzal, García and Humanes (2016).

Taxonomy	No. res. groups	%
Fields of Communication	114	21
General Communication	168	31
Communication and Technology	78	14
Communication and Politics	25	5
Media, Production and Discourses	50	9
Communication and Society	74	14
Communication and Collectives (specific audiences)	35	6

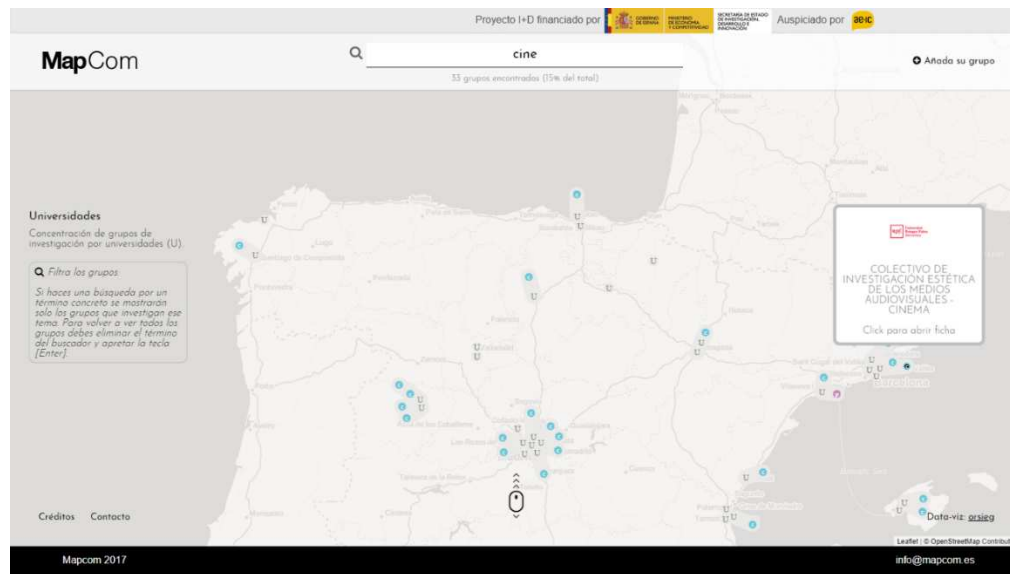
The first two categories are revealed to be excessively generic. With the aim of finding more specific terms to identify the research interests of the groups, a frequency study was also conducted. Table 9 shows the most frequent groupings of topics (with frequencies ≥ 5) present in the descriptions of lines of research.

Table 9: Most common topic groupings. Source: prepared by authors.

Topics	Fr.	Topics	Fr.
Media (6)	56	Social change	6
New Technologies	19	Spanish Cinema	6
Political Communication	12	Audiovisual Communication	6
Audiovisual Media	10	Cultural Studies	6
New Media	10	Cultural Heritage	6
Social Networks	10	Audiovisual Production	6
Information Technology/ICT	19	Public Relations	6
Social Communication	9	Social Responsibility	6
History of Journalism	9	Discourse Analysis	5
Communication Policy	9	Social Change	5
Communication and Culture	8	Consumer Behaviour	5
Cultural Industries	8	Digital Communication	5
Public Opinion	8	Political Economics	5
Transmedia	8	Communication Strategies	5
Business Communication	7	Film History	5
Documentary Heritage	7	Communication Technologies	5
Knowledge Society	7		
Historiographical Techniques	7		
Audiovisual Translation	7		

The interactive map developed as a result of the project enables searches for research groups by words, topics or subjects (see Image 3).

Image 3: Example of “*cine*” (cinema) term search in interactive map. Source: MapCom website.



We then created various contingency tables. Table 10 presents a cross tabulation of the different MapCom areas and the taxonomy categories, the internal value being the number of research groups for which any of the topics included in the taxonomy categories appears in the lines of research variable.

Table 10: Contingency table of MapCom areas and taxonomy. Source: prepared by authors.

	MapCom Area				
Taxonomy	AREA I: Community of Madrid, Castile-La Mancha, Castile and León and La Rioja	AREA II: Galicia, Basque Country, Navarre and Aragon	AREA III: Andalusia, Extremadura and Canary Islands	AREA IV: Catalonia, Valencian Community, Murcia and Balearic Islands	Total
Fields of Communication	24	14	25	51	114
General Communication	50	23	38	57	168
Communication and Technology	30	7	17	24	78
Communication and Politics	7	4	6	8	25
Media, Production and Discourses	12	6	6	26	50
Communication and Society	24	10	14	26	74
Communication and Collectives (specific audiences)	8	6	5	16	35

The table below presents a cross-tabulation of the different knowledge areas and the taxonomy categories, the internal value being the number of research groups for which one of the topics included in the taxonomy categories appears in the lines of research variable.

Table 11: Contingency table of knowledge areas and taxonomy categories. Source: prepared by authors.

Taxonomy	Knowledge Area			Total
	040 Library and Information Sciences	105 Audiovisual Communication and Advertising	675 Journalism	
Fields of Communication	0	82	32	114
General communication	8	117	43	168
Communication and Technology	8	54	16	78
Communication and Politics	2	16	7	25
Media, Production and Discourses	0	43	7	50
Communication and Society	5	50	19	74
Communication and Collectives (specific audiences)	1	28	6	35

3.3. Composition of group

We were able to calculate group size for 91% (n=194) of the groups. In 9% (n=19) of the groups, information on group members is not available. Even so, the information on this variable is sufficiently significant for the sample size. Four categories have been created for this variable. The most common group size (see Table 12) is medium (6-10 members), which defines 43% of the groups (n=83).

Table 12: Group size. Source: prepared by authors.

Group Size (No. of members)	No. res. groups
XL: 15 - 43	43
L: 11 - 15	36
M: 6 - 10	83
S: 2 - 9	32
(blank)	19
Total	213

With respect to gender, a total of 2,116 group members were identified, of whom 48.4% (n=1,026) are women and 51.6% (n=1,090) are men. The gender imbalance is more significant in the case of principal investigators: men in 65% (n=139) of cases, and women in only 35% (n=74) of the groups.

4. Conclusions

It is clear that the presence of research groups in Spain is widespread, diverse and considerably active. The data reveal a prolific field, rich in research interests but extremely disorganised due to the marked divergence of topics present in the lines of research and descriptions of the groups, an aspect that hinders the characterisation of the research, the alignment of terms, and thus the effective analysis of the groups.

The average size of the research groups is medium (6-10 members) and they exhibit a reasonable degree of gender balance, although this aspect has only been analysed in terms of

the sample as a whole rather than within each group. However, at the directorial level there are 6.5 men to every 3.5 women, representing a clear imbalance. This piece of data should prompt general reflection and the implementation of equitable policies in this area.

The study of research topics and the combinations of terms derived from the descriptions of lines of research has made it possible to identify a list of recurring thematic categories. This study is based on the actual research practices of the groups and on the selection of topics made by their members, and its findings could contribute to the reformulation of existing taxonomies in the scientific field of communication.

Of the knowledge areas considered, Audiovisual Communication and Advertising is in first place in terms of volume of groups and topics, producing a significant proportion of research group activity despite being a less traditional field than Journalism, which is in second place, with more than twice as many groups as Library and Information Sciences.

The lack of public information on research groups makes it impossible to make any conclusive and reliable assertions with respect to their year of creation (research group age), as this information is available for only one out of every two groups. The status of groups as either emerging or consolidated is an element affected by the different criteria for these categories used by each autonomous community, and these differences hinder comparison in all cases. In all other variables, however, it has been possible to obtain relevant and significant data.

Some of the limitations of the study that will need to be resolved in the future are:

- the inclusion of the number of professors (with and without doctorates) employed at each university in the areas studied. This data is difficult to determine and constantly fluctuating, but it could be useful for comparison with the number of groups at each university and the size of those groups.

- the interdisciplinary nature of the groups and their possible inter-institutional composition. This is an interesting aspect that would reveal the openness of research groups and their exchange networks.

- the existence of strategic plans informing the activity of the group. The analysis of this aspect will require methods different from the content analysis used here, which will be able to identify evidence of these plans.

Future research in this area should also consider the relationship between group size and the number of projects or productivity of the group, as well as other equally valuable variables, like type of conclusions or scope of contribution to the field of knowledge.

University research groups generate social value and form part of the so-called *knowledge economy*, given that their main activities are based on the production of intangible resources associated with knowledge. In the field of communication in Spain, this study reveals a promising volume of activity, although it is thematically divergent, poorly interconnected and, as a result, largely unknown to other groups except through publications in scientific journals and scientific events.

Beyond the measurement of the research group's production or capacity for transfer (which today represents the almost exclusive focus), it is also necessary to promote policies focusing on other dimensions based on the existence of a strategic plan established within the group, the trajectory of the group, the intensity of its activity and the duration of its members, the performance of its leaders, the internal variables used to assess the efficiency and effectiveness of its activity, the identification of knowledge-related contributions, and the reflection and theoretical development of the field, among other areas.

There appears to be a need to promote common platforms or spaces through which groups can connect, share interests, engage in fluid communication, study synergies and foster association. After identifying the groups, their subjects, their institutional,

departmental and geographic affiliation and knowledge area, their size, composition and the gender balance of members and PIs, a map was created to facilitate more specific future research. This map⁶ can be viewed interactively and can be updated to prevent the information on research groups from becoming obsolete, although it will require the collaboration of group members to keep it updated. Both this study and the research group map derived from it represent the first initiative to catalogue research groups in the field of communication in Spain.

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⁶ See http://www.mapcom.es/media/files/interactivo_mapa_grupos/index.html.

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