








# Mobile journalism: Systematic literature review

Periodismo móvil: Revisión sistemática de la producción científica

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## ABSTRACT

The era of mobile media has placed communications convergence at a new stage. The importance of studies about mobile communications has been growing increasingly over the last years. This growth is connected to the increase in the access to contents through new devices. The last ten years have seen a process of acceleration in mobile technology innovations. The peak of this new scenario has been the interest of the research community in investigating the relationship between such innovations and the spread of informative contents. This article analyses those studies that address the relation between mobile devices and communication and journalism. The main objective is to clarify the current state of these studies as well as to define their significance within the current convergence scenario. In order to reach such objectives, a Systematic Literature Review (SLR) was conducted. The authors analysed 199 research articles published between January 2008 and May 2018 in the database Web of Science. The findings suggest that the United States has the largest number of studies in relation to this topic. We can pinpoint the highest increase in scientific production about journalism and mobile communications in 2013. Besides, it exists a dominance of those articles related with actants upon those ones about actors or audiences.

## RESUMEN

La era de los medios móviles ha situado la convergencia comunicativa en un nuevo estadio. La movilidad ha abierto un gran campo en la cambiante sociedad red. La producción científica sobre periodismo móvil ha adquirido un mayor protagonismo gracias a las mejoras técnicas de los dispositivos y a la democratización en el acceso a los contenidos por parte de los usuarios. En los últimos diez años se ha producido una aceleración en las innovaciones tecnológicas que se ha traducido en un mayor interés por esta área de estudio. En este trabajo se analizan los artículos sobre dispositivos móviles y periodismo a fin de definir el momento actual del proceso y situar el papel que ocupan en el escenario convergente. El método ha sido una revisión sistemática de la literatura científica (SLR) de 199 artículos publicados entre enero del 2008 y mayo del 2018 en la base de datos Web of Science. La validación siguió los criterios de inclusión y exclusión, identificación de la base de datos, motores de búsqueda, y evaluación y descripción de resultados. Los hallazgos indican que en Estados Unidos se concentra el mayor número de publicaciones relacionadas con este tema y que el auge de la producción científica sobre periodismo móvil se da en el año 2013. Se concluye que existe un predominio de publicaciones relacionadas con los actantes en detrimento de aquellas que versan sobre actores o audiencias.

## KEYWORDS | PALABRAS CLAVE

Mobile communication, mobile journalism, digitalization, convergence, mobility, innovation, personalization, ubiquity. Comunicación móvil, periodismo móvil, digitalización, convergencia, movilidad, innovación, personalización, ubicuidad.



## 1. Introduction

Over the last two decades, the media arena has become increasingly digital thanks to the development of advanced and often cheaper devices, with improved connectivity and a wider supply of products and services. There is a long academic tradition on the study of digitisation and innovation processes in newsrooms. From Castells (1996), who explored the so-called network society and its technological reach, to the metamorphosis (Fidler, 1997) and the digitisation process of the news by Boczkowski (2004). Studies on aspects such as multimodality (Deuze, 2005), interactivity (Scolari, 2008), convergence (Salaverría & García-Avilés, 2010), participation (Masip & al., 2015), personalisation (Thurman, 2011), memory and documentation (Guallar, 2011), and the mobility in the use of the new media (Westlund & Lewis, 2014), among others, have been of particular importance. The relevance of information and automation technologies has been obvious ever since Manovich (2013) drew attention to how software had acquired the leading role. The trend has become even more important for a good part of processes, such as the search, development, and dissemination of contents. Innovation processes in newsrooms (Paulussen, 2016) consider content production for mobile devices a priority, namely mobile journalism –MOJO– and participation (Barnes, 2016), which is carried out, in a very large percentage, from mobile devices.

The transformation process of media technologies as regards their adaptation to everyday life, routines and social environments have been studied by many authors over the past few years (Silverstone & al., 1992; Haddon, 2007). Mobiles have been studied, from the beginning, as driving forces of a sociological change that are able to shape our everyday life (Ling, 2004; Ling & Haddon, 2001; Oksman & Rautianen, 2002). The growth in mobile users (GSMA, 2018) reveals that the media industry is facing a challenge. Adapting to a mobile audience that consumes content preferably through mobile devices (Reuters Institute, 2018) is a priority that requires knowing the characteristics and particularities of this new communicative platform.

Mobile communication refers to the access to contents from mobile devices and to the constant connection of individuals. Castells (2006) highlights the permanence and ubiquity as two of the factors that help to understand this phenomenon. During the past decade, mobiles have gradually become portable devices, personal laptops. This quality, which facilitates interpersonal communication, has been highlighted by the majority of researchers in this area (Ling, 2004; Fortunati, 2001; Habuchi, 2005; Matsuda, 2005; Wei & Lo, 2006).

Mobile devices are conceived as essential elements to deal with the new social structure that affects human implications, interventions between organizations and social institutions (Geser, 2004).

The launch of the Apple iPhone in 2007 marks the beginning of a new era in the digitisation process and creates a new standard to understand the meaning of mobile communications and the media in particular (Scolari, Aguado, & Feijoo, 2012).

Although these have always been “mobile” according to Bruhn (2013), they transform the paradigm of traditional media (Westlund, 2011), providing new synchronic, located and individualised formats (Bruhn, 2013), and modifying social contexts and ways of producing, disseminating and receiving contents.

Wei (2013) defines mobile media as personal, interactive, Internet-enabled portable platforms and controlled by users. The value of mobility, together with its personal, private (Lorente, 2002) and individualistic nature (Soletic, 2008) aimed at the personalisation (Martin, 2009) are some of the elements that define the mobile device. Aguado and Martínez (2006) point out that most of the success of the spread of telephony is due to its adherent characteristics: ubiquity, personal character, translocality, and always-on connectivity.

It is necessary to specify that the phenomenon of mobile journalism has not yet been unanimously conceptualised in Academia. At first, the term has been considered a successor of multimedia journalism, but, in reality, it is a new field with its own characteristics. The difference lies in mobility, which opens space for diverse interpretations within this new context. Some authors, in the attempt to provide a more reliable explanation of this new journalistic practice, chose to call it mobile digital journalism (Campbell, 2007), mobile news journalism (Forsberg, 2001), and mobile journalism (Briggs, 2007; Quinn, 2000; Pavlik, 2001; Castells, 2006). The concept should be understood from the media perspective, as noted by Goggin and Hjorth (2009) and Virpi (2010), which leads us to affirm that we are faced with two different perspectives that help to provide a clearer definition of this new field of study. On the one hand, that which refers to the dissemination and reception of content for mobile devices and, on the other hand, that which focuses on content production.

Although, as we have already seen, the scientific production on mobile communication is very common, the study of mobile journalism has serious research gaps. Pearce (2013) found absences of knowledge in existing scientific production, alerting to the need to conduct studies with a higher theoretical commitment and rigorous methods. Works

focused on this area address the technical characteristics of devices (Ahonen, 2008; Jokela & al., 2009) and the challenges of journalistic companies within the contexts of the mobile society, focused on the need to adapt to the public segmentation and to the era of the permanent connectivity (Aguado & Martínez, 2006). Researchers agree that this new context facilitates the creation of innovative strategies as regards distribution and business models (Aguado, 2012) and facilitates the creation of new expressive modalities (Sánchez & Aguado, 2010). Cebrián and Flores-Vivar (2011) affirm that news contents disseminated through mobile devices went through three main phases: adaptation, autonomy, and emancipation. The main published articles in this field focus on the use of mobile devices and its social impact, referring to, for instance, changes in structuring, communication methods and mutation in traditional values such as space and time, public and private, identity, and security and solitude, among others. However, these are descriptive works with a low degree of theoretical research. In this sense, there is a lack of analytical and practical studies about mobile journalism from its three main branches: broadcasting, dissemination, and reception of contents.

Taking into account these absences of knowledge, the article aims to analyse recent studies (2008-18) produced in the articulation of mobile journalism, in order to know what kind of research has been done in this field, the contexts in which these practices have been developed and the challenges detected. The ultimate goal is to provide knowledge about the complexity of the mobile ecosystem as its role in the communication arena becomes more important during the second decade of the third millennium (Aubusson, Schuck, & Burden, 2016).

**Studies on mobile device impact on communication processes in general and news-making processes in particular have been widely studied topics over the last years. Thus, referenced works in this research are the continuation of experiences started by theorists such as Castells (1996) and Fidler (1997), precursors in advancing the degree of impact that mobile technologies would have in the evolution of communication in its different forms and supports.**

## 2. Material and method

The general plan to know and understand the role of emergent mobile media in the scenario of media convergence is based on a methodological design that starts from the systematic scientific literature review. It is based on the RSL protocol proposed by Kitchenham (2004), which has had greater impact in the last ten years (between January 2008 and April 2018). The systematic review, which is part of the secondary research and whose basis is the scrupulous respect for transparency and systematization (Codina, 2017), allows us to know the main contributions to the state of the art. This technique will allow us to “identify, assess and interpret the available data within a time period of a specific research field” (Ramírez-Montoya & García-Peñalvo, 2018), that we have set at ten years because this is the point where there is a cycle change in mobile communication.

We worked with inclusion criteria consisting on keywords defined for mobile journalism, the subject of study, and published in English in the period 2008-18. Articles in which the main goal was not related to mobile journalism have been excluded as, for instance, those related to technical aspects of devices and those that affected media literacy processes. The procedure to conduct the review consisted in the selection of studies in the area of Social Sciences through the Web of Science database. This choice is justified because the main objective is to assess articles published in journals with the highest impact at the international level. In order to locate the results, the following categories, collected in Table 1 (next page), were taken into account:

The method followed the steps listed below:

- 1) Identification of the research field and the period to assess: mobile journalism (2008-18).
- 2) Selection of sources: research articles from the area of Social Sciences Citation Index (SSCI).
- 3) Search in the WoS –Web of Science– with the list of final descriptors.

4) Management and filtering of results.

5) Identification of variables to study: descriptive data (year of publication, name of the journal, title of the article, keywords and number of authors); type of study (quantitative, qualitative, descriptive-explanatory, transversal and non-specified); techniques (observation, survey, interviews, content analysis, case study, experimental and non-specified); main contribution; DOI; and finally, institution of origin.

### 3. Results

This part analyses the most relevant findings during the systematic literature review based on the recent research production on mobile journalism using the above-mentioned descriptors. In total, 199 different papers were reviewed, as a result of the search of seven terms, series of terms and the exclusion of possible matches. Throughout this section, we analyse the main research trends in the subject, taking into account various points of view: publication –number of published articles and titles–, number of signatures and main subject of the papers reviewed. Likewise, the thematic classification formula devised by Lewis and Westlund (2015) was used to divide articles on mobile journalism from the viewpoint of actors, actants, audiences, and activities.

We initially focused on the time distribution of works obtained. As showed in Figure 1, over the last decade there has been a gradual increase in the production of content related to mobile communication, reaching a peak in 2013 with a production of 38 texts related to the selected descriptors. In the following years, the number was reduced, reaching 30 contributions in 2017. For the period covered by this study, 2018, we have identified 23 texts on mobile journalism.

We have found 31 different journals with a scope that includes scientific articles related to the application of mobile technologies with journalism. Table 2 shows journals that have published a hundred or more articles related to the subject studied in the last decade. This information is useful to appreciate how some journals show a higher degree of specialization in this topic. This would be the case of «Mobile Media & Communication» with 55 texts, and «New Media & Society», with 21. It can be seen that only two more titles, «Convergence» and «Journalism Studies» with 12 and 11 articles respectively, surpass the ten texts related to the selected descriptor. Therefore, four publications make up almost 50% of production connected to the terms researched.

We now analyse the characteristics of authorship in the scientific production on mobile journalism indexed in Web of Science over the last decade. Thus, we note that the trend is having a single author in 51.25% of cases –102 of the 199 texts reviewed–. In terms of co-authorship, there are 54 articles signed by two people, and 28 by three people.

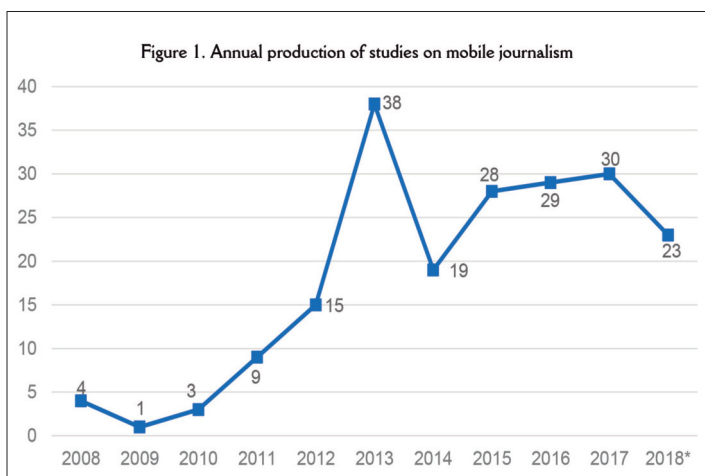
The maximum number of authors is 9, which happens in two cases.

In terms of the origin of researchers who sign the 199 articles analysed, it is observed that they come from universities based in 30 different countries. Among them, The United States is the country with the greatest presence throughout the revised corpus. Australia hosts the second largest volume of researchers on mobile journalism, while the UK ranks third.

Also, it is possible to identify that 26.13 per cent of reviewed articles are signed by authors from more than one university, while 11.55 per

**Table 1. Selected descriptors for the search in the Web of Science**

Descriptor	N° of articles
TS=mobile journalism	5
TS=mojo	5
TS=mobile news	18
TS=journalism AND mobile	53
TS=locative AND mobile	40
TS=mobile and social media	6
TS=mobile media	132
<b>Total</b>	<b>259</b>
Matches	60
<b>Total without matches</b>	<b>199</b>



cent are international researches, that is, signed by authors from more than a country. When it comes to the thematic revision of reviewed titles, we utilized the proposal used by Lewis and Westlund (2015). These authors devised a classification for articles framed within a same reality but approached from different points of view: actors – in this case media professionals–, actants –referring to all related to the construction of messages through mobile devices and their own language–; audiences –receivers of messages produced and communicated through mobile devices–; and activities –routines and tasks carried out by media professionals and users of new devices–. The presence of each thematic line will therefore be observed in the reviewed literature corpus.

### 3.1. Actors

This section is framed within studies on news content production taking into account the re-evaluation of traditional journalistic theories in the new digital context (Löffelholz, 2008). Domingo (2008) refers to the production of news as a generic process that includes five stages: 1) access and observation; 2) selection and filtering; 3) processing and edition; 4) distribution; 5) interpretation. This definition serves as a good starting point to analyse the concept of actors regarding the production of news in general.

Papers related to actors are the less numerous, with 17 references. These address the issue of mobile journalism from an approach focused on the use of new technologies by journalists (Deprez & Van-Leuven, 2018; Mills, Pellanda, & Pase, 2017), as well as the comparison between mobile journalists or MoJo and traditional journalists (Blankenship, 2016). There are also, in relation to articles written from the point of view of actors, papers that focus on the use of mobile technologies by citizens that play the role of citizen journalists (Ataman & Çoban, 2018), as well as the implementation of activist journalists' initiatives by communication professionals (Hermida & Hernández-Santaolalla, 2018).

### 3.2. Actants

For the study of actants (Lewis & Westlund, 2015), we focused on the conception of the smartphone as a meta-media (Jensen, 2016; Márquez, 2017), born in the context of cyberculture (Levy, 2007), that is, a device containing old and new media that offers a broad range of possibilities (Madianou & Miller, 2012). According to this idea, mobile news apps are a good example of technological actants.

We started from a holistic conception of the smartphone (Humphreys, Karnowski, & Von-Pape, 2018), understood as a device that reflects “the instrumental hyper-multifunctionality and the complexity of the new techno-social scenario” (Fumero, 2010).

We found studies related to the usability of devices, a concept popularized by Gibson (1979), and to the intrinsic characteristics of smartphones. In this regard, the ubiquity and persuasiveness stood out (Aguado & Martínez, 2008), as well as the ease to compress video, images and text, and the simplicity in recording, editing and distribution processes through the Internet, opening in turn new means of citizen expression.

Undoubtedly, everything related to languages and the construction of the message through mobile devices is the most addressed thematic approach in mobile journalism research over the last years. Thus, it was observed that 58% of reviewed articles focus on the technical and linguistic characteristics offered by this new technology.

We also found different research lines linked to, among others, aspects such as the change posed by the inclusion of location and GPS services in the news (Goggin, Martin, & Dwyer, 2015); the use of tools for publishing and receiving news through mobile devices (Mills, Egglestone, Rashid, & Väättäjä, 2012); communication structures and dissemination of news through mobile devices (Van-Cauwenberge, d’Haenens, & Beentjes, 2015); and the required adaptation process for the media to efficiently disseminate their contents (Westlund & Färdigh, 2015).

Journal	Nº of articles
Mobile Media & Communication	55
New Media & Society	21
Convergence	12
Journalism Studies	11
International Journal of Communication	9
Media International Australia	9
Continuum	8
Journalism	8
Journalism Practice	7
Information, Communication & Society	6
Media Culture & Society	6
African Journalism Studies	5
Comunicar	5
International Journal of Mobile Communications	5

There are also more analytical approaches, focused on the description and analysis of messages produced around a specific event (Mudhai, 2011), and even more technical, based on the analysis of the functionalities of specific mobile applications (Verhoeff, 2017).

### 3.3. Audiences

When it comes to audiences, 42 references were found, this being the second most used thematic approach. Different study approaches were identified, among them: research focused on users' behaviour when using a specific service or application (Saker & Evans, 2016); the connection between the media and their audiences through the use of new devices as well as new ways of consuming information enabled by these devices (Peters, 2012); the participation and mobilization of users (Mudliar & Donner, 2015); and the response of audiences in new communication environments (Kim, Lee, Hwang, & Jeong, 2016).

Taking as reference the focus of audiences, the reviewed studies provide conclusions centred fundamentally on aspects such as the potential of engagement in contents disseminated through mobile devices against more traditional media (Antunovic, Parsons, & Cooke, 2018), and the relevance of factors such as the role of parents and school training at the time of incorporating news consumption in youth (Edgerly, Thorson, Thorson, Vraga, & Bode, 2018). From the perspective of the connection between citizens and the media, mobile devices are pointed out as tools called to produce changes in news production routines by incorporating materials and testimonials provided by the audience (Lorenzo-Dus & Bryan, 2011). These contributions, so frequent nowadays through spaces such as social networks and other exchange channels, serve to bring individuals and the media closer together in an increasingly collaborative news production process (Soep, 2012).

### 3.4. Activities

In terms of activities, we grouped together everything related to production and consumption routines by the media and users. 24 of the 199 analysed texts used this thematic approach, looking at the activities carried out during communication processes.

Examples of this are those papers focused on experimentation activities and implementation of new communication processes applied to mobile devices by the media and companies of another industry (Carah, 2017); strategies and actions carried out to protect users' privacy (Vickery, 2015) and the use of certain tools and services of mobile devices in the daily activities of citizens (Frith, 2017).

## 4. Discussion and conclusions

As reflected in the present text, studies on mobile device impact on communication processes in general and news-making processes in particular have been widely studied topics over the last years. Thus, referenced works in this research are the continuation of experiences started by theorists such as Castells (1996) and Fidler (1997), precursors in advancing the degree of impact that mobile technologies would have in the evolution of communication in its different forms and supports.

From the study of the research production on mobile journalism, obtained through the search of different descriptors in the Web of Science database, it was found that, over the last ten years, there has been a gradual increase of papers related to the topic. The data confirm an evolution: in 2008, we found four references and, in the middle of 2018, the number amounted to 23.

Throughout the ten years studied, 31 journals included papers focused on communication and mobile journalism in line with the outlined search criteria. However, the trend within this topic is the concentration of research production in four journals that bring together almost half of the research. There is, therefore, a certain specialization or trend of authors to disseminate their findings through *Mobile Media & Communication*, *New Media & Society*, *Convergence and Journalism Studies*, all of them closely linked to the study of the impact of technology in communication processes.

Regarding the characteristics of authorship, the presence of a single author prevails, something that happens in more than half of the papers reviewed. Also, the presence of two signatures in co-authored papers is notable. Regarding the geographical origin of authors, we found 30 different countries. However, researchers based in the United States, Australia and the United Kingdom stand out. We see, then, how the English-speaking countries are the heart of the academic production on the subject.

Finally, following the existing trends regarding the topical distribution of articles, we followed the one proposed

by Lewis and Westlund (2015), dividing texts that address the topic of mobile journalism from four perspectives: actors, actants, audiences and activities. The classification is interesting, as it establishes four ways to approach the phenomenon of mobile journalism. New paths are opened within the relationships between user-media, journalist-user and journalist-media through the technological mediation enabled by mobile devices, both in the production and communication processes and the news consumption. However, in recent years, the greatest weight of mobile communication research has focused on technology, studying both its particularities and the influence of innovation in news production.

Regarding the limitations of the study, these are the determination of the period of study (2008-2018) and the choice of descriptors. The period proposed corresponds to the expansion phase of smartphones as platforms of news content thanks to the release of the iPhone in 2007. Regarding the descriptors used for the Web of Science search, they were selected from a

first approach to the literature corpus published in recent years and the words and key-words established by the authors of those papers. Similarly, the choice of the English language for search descriptors in Web of Science acts as a constraint and barrier to all those papers written in other languages such as Spanish and Portuguese, among others.

Finally, with regard to future research in this area, there is scope for developing similar studies aimed at knowing the particularities and research trends on the introduction of mobile

devices in the everyday life of citizens and in the news production processes. Similar revisions could provide a greater knowledge of thematic trends and used approaches and could serve to give value to research centres and scholars that carry the banner for mobile journalism.

New paths are opened within the relationships between user-media, journalist-user and journalist-media through the technological mediation enabled by mobile devices, both in the production and communication processes and the news consumption. However, in recent years, the greatest weight of mobile communication research has focused on technology, studying both its particularities and the influence of innovation in news production.

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