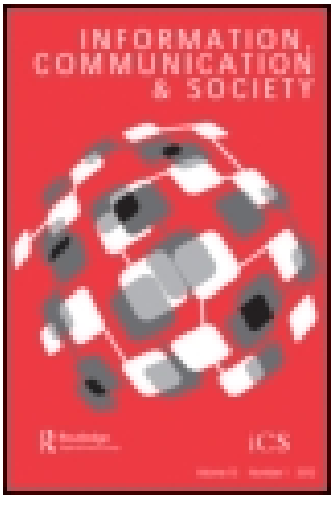

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Media competence in adult citizens in Andalusia, Spain

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Videogames, televisions, and computers in all their forms, and smartphones, are everywhere to the extent that the time spent in front of a screen by all sectors of society now takes up most of the leisure time of the citizens of all four corners of the world. Yet in the face of this barrage of media, citizens have developed few formative experiences for acquiring these audiovisual and media languages or for increasing their audiovisual and media skills. The main aim of this study is to assess media competence in the Spanish region of Andalusia with the use of an instrument specially designed for the purpose. The measurement criteria and indicators of this tool are shaped by media literacy paradigms and leading international reference models, in particular the model proposed by Hobbs. The instrument consists of indicators which, according to their features, are measured via subjective or objective questions and multiple choice (ordinal or nominal) options. Measurement is standardized by the interpretation of the responses to the items on a scale of 1– 4. The construct is validated by means of factorial analysis to confirm the presence of the five factors (criteria) that form the instrument. The sample consists of 667 adult citizens aged 18–55, resident in Andalusia. The results corroborate the influence of demographic factors on media literacy levels and help identify clusters of citizens that can facilitate the design of targeted literacy projects. The results show that media competence is a construct articulated by dimensions of a varied nature that correlate in many different ways to distinctive social groups within this study.

Keywords: media literacy; digital competence; media competence; digital gap; citizenship; audiovisual language

Introduction

Media literacy is an issue of worldwide interest today that receives constant attention from international institutions and which is in need of constant, rigorous research. The Recommendations of the European Parliament in 2007,[1] Recommendation C (2009) 6464 of the European Commission which requests all Member States to draw up a national test on the level of media literacy of its citizens (Aguaded, 2013), the Middle East Conference on Media Literacy held in Saudi Arabia (2007), the International Media Research Forum (London, Hong Kong, 2008), or the Conference on Media in Africa (Nigeria, 2008) are just some of the events in which researchers have pushed for greater investigation into this subject.

The European Commission's recent Recommendations on 'media literacy in the digital environment for a more competitive audiovisual and content industry, and an inclusive society

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of knowledge»',[2] for all Member States concludes with the insistence on criteria for evaluating media literacy levels across Europe, specially to 'promote systematic research through studies and projects on the different aspects and dimensions of media literacy in the digital environment and monitor and measure the progress of media literacy levels'.[3] A call for an international investigation at the end of 2006 demonstrated the differences in levels and practice of media literacy across Europe. 'It is recognized that there are no agreed criteria or standards for assessing media literacy and there is an urgent need for large-scale, longer-term research to establish such criteria'.[4]

This article collates the results of research financed by the regional autonomous government of Andalusia in Spain, with the general aim of formulating a proposal containing criteria and indicators that enable the assessment of media literacy levels among citizens in Andalusia. We are aware that this type of proposal is incompatible with unique and absolute models, and can be extended and opened up to changes and dynamic adaptation to certain contexts, and always subject to revision and updating.

Towards a conceptual model of media literacy

A rigorous analysis of the media literacy concept urges an examination of four paradigms or conceptual models whose development enables a more comprehensive and integral vision of media literacy. These are: (a) Critical Media Studies (Kellner & Share, 2007); (b) New Media Literacies (Jenkins, 2006); (c) Medium Theory (McLuhan, 1972; Meyrowitz, 2009); and (d) Pragmatism (Mason & Metzger, 2012; Putnam, 2009).

Each media literacy paradigm postulates a different vision of relations between the media, technology, citizens, and democratic society that contributes essential aspects to any literacy project.

New Media Literacies (Jenkins, 2006; Luke, 2007) refers to the dominant paradigm that features in most political agendas concerning media literacy in the developed world. In New Media Literacies, citizens' interest in the media is seen as a starting point for them to question content and produce their own, which enables them to gain a greater understanding of the language and transforms them into citizen readers who are more judicious and critical in their continuous and daily dealings with the media. Jenkins' book *Convergence culture* (2006) acknowledges that contemporary media technology is based mainly on recreation. However, the author is convinced that there is great potential for citizens in the mass usage of Internet resources such as blogs, forums, wikis, etc., and that the recreational focus of today's media technology revolves around issues of personal and social interest. Jenkins states that such events now occur within blog communities, which are 'sharing knowledge and experiences, debating evidence, and examining information and complex suppositions' (p. 226).

Since the mid-90s and the beginning of the social expansion of Internet, numerous authors have attempted to describe and conceptualize the cognitive skills users deploy in digital environments (Burnett & McKinley, 1998; Cothey, 2002; Hargittai, 2002a, 2002b; Wang, Hawk, & Tenopir, 2000; Zins, 2000). Unfortunately, these efforts were local in nature and often limited to information searching (Marchionini, 1989; Zins, 2000). The concept was developing, emphasizing aspects such as data recovery and management (Gilster, 1997). Gilster did not attempt a systematized list of skills or specific components as digital literacy content, which he defined as 'the ability to understand and use information when it is presented via computers'. Gilster says that 'digital literacy is about mastering ideas not keystrokes', implicitly differentiating this from other more restricted concepts of media literacy. He considers that digital media impose certain requirements that were always present, although less apparent, in analogue media such as the press and television. They not only 'require the skill of finding things; you must also acquire the ability to use these things in your life'. One important aspect is the evaluation of

the Internet not just as a means to access information but one which allows the user to communicate, disseminate, and publish content.

Another complementary paradigm is Critical Media Studies (Kellner & Share, 2007) which derives from pedagogy and is based on the power of the media to manipulate users. Hence it emphasizes the importance of learning skills to create a critical analysis of the media. Critical Media Studies provide knowledge on the consolidation of media groups and the powerful influence of conglomerates on the configuration of the societies we inhabit today. Given the growing reach of transnational media corporations, this knowledge offers an important base for any project on media literacy. Media literacy helps students to become 'aware of how the media construct messages, influence and educate the general public and impose their messages and values', and enables students to produce their own media in order to understand the multimedia message construction process (Kellner & Share, 2007, p. 4). Media literacy becomes a tool for resistance against the dominant influence of the media and their persuasive possibilities. Kellner and Share (2007) advocate a 'radical democracy' program based on a critical analysis of the media and audience activation in order to make them commit to media products.

Medium Theory (McLuhan, 1972; Meyrowitz, 2009) emphasizes critical thought, but contrary to the previous paradigms mentioned it also focuses on what happens in practice, and general trends in society and visions of the world conditioned by different forms of communication. Meyrowitz (1998) shows how Medium Theory directly challenges the suppositions of technological neutrality. Each medium is a type of setting or environment configured by a series of characteristics that influence communication in a particular way regardless of content and the specific manipulation of the ideological variables of production (Meyrowitz, 1998). In line with Medium Theory the new technologies are more than just mere tools; they enable users to create new settings for social interactions and transactions.

The fourth paradigm is Pragmatism (Mason & Metzger, 2012). This perspective offers a critical review that suggests an alternative direction for media literacy, in which instruction on participative democracy includes the analysis of media messages and content as well as the forms of communication and how they relate to transnational trends in society in general. Like the other paradigms, Pragmatism vouches for strengthening democratic culture and participation. However, its greatest value is in the judgment of positioning in light of the aims based on results projection (Cherryholmes, 1999). Pragmatism has been called the epistemology of democracy (Putnam, 2009), since it requires a broad and inclusive investigation of themes with a specific content. This position assumes that democracy is in need of something more than a democratic structure. It needs an overall moral or ethical vision because democracy is 'essentially an affirmation of what types of cultures are to prevail; essentially, it is a commitment to the social processes that generate this affirmation' (Stuhr, 2003, p. 3).

Initiatives for evaluating media competence

International institutions such as the European Commission, the Council of Europe, and the United Nations (the Alliance for Civilizations) support this urgent need for media literacy on a worldwide scale. Some have designed tools, like UNESCO's 'Media Education Kit' and the 'Media and Information Literacy Curriculum for Teachers', the European Charter for Media Literacy, and the support of the Alliance of Civilizations for Media Education through various congresses and publications. The Grünwald Declaration (1982), the Alexandria Proclamation on Information Literacy and Lifelong Learning (2005), the Paris Agenda for Media Education (2007) are initiatives that have defined the future and require strategies and research that can be shared, tested, and adopted with the aim of achieving real social change.

Along similar lines, there have been several meta-analyses and proposals that have had an international impact relating to the various underlying dimensions of media literacy in each of the paradigms mentioned (Table 1). One of these is the study by Ofcom, the communication industry's regulatory body in the UK, led by David Buckingham and Sonia Livingstone, and which has a distinctive eclectic orientation. This study reports on relevant academic and other publicly available research on child and adult media literacy (Buckingham, Banaji, Carr, Cranmer, & Willett, 2005; Livingstone, Van Couvering, & Thumim, 2005). These reports emphasize access, understanding of the medium and creation as the competences to include in the literacy process. Buckingham et al. (2005) focuses on children and young people while Livingstone et al. (2005) concentrate on adults. Jenkins (2006), in one of the most cited reports on media education, extends new competences for media literary based on the potential of new media for the development of a participative culture, offering suggestions for literacy processes. More recently, Hobbs (2010) put together a simple proposal that gathers all the conceptualized dimensions from the different media literacy paradigms with an approach that is highly pragmatic and cyclical, namely, access, analysis and assessment, creation, reflection, and action.

Although there are numerous studies on the extent and type of use of communication media, there are not so many devoted to the development of instruments aimed at making objective measurements of the levels of citizens' media competence. Of these, here are some examples:

Hobbs and Frost (2003) carried out an intensive qualitative analysis of student responses in order to assess media literacy, based on the Aufderheide and Firestone definition (1993). However, the lack of any factor analysis meant that the underlying conceptual model could not be identified, thus making the validity of the content questionable.

Arke and Primack (2009) at the University of Pittsburgh, Pennsylvania, developed a scale for measuring media literacy on a conceptual model based on the Aufderheide and Firestone (1993) and National Association for Media Literacy Education (2007) models. They define media literacy as a skill for understanding, analyzing, and assessing media messages in a wide variety of formats. Arke and Primack's research (2009), although it used only a small student sample, showed a significant positive correlation between technological literacy and critical thinking (California Critical Thinking Skills Test), corroborating ideas (Domine, 2011; Silverblatt, 2001) that identify the capacity to develop independent judgments on media content as an important element of media literacy. Factor analysis enabled the instrument's underlying conceptual model to be validated, making this an invaluable tool for assessing media literacy in the terms previously mentioned.

In Europe, a number of bodies coordinated by the European Association for Viewers' Interests (EAVI) (Celot & Pérez-Tornero, 2009), developed a tool to measure media literacy in citizens of the 27 European Union member states based on an eclectic conceptual model containing media literacy paradigms: (a) skills for the active and advanced use of new media (use); (b) critical understanding of the medium from the perspective of language and the nature and regulation of the media (critical understanding); (c) citizen participation through social relations and content creation (communicative abilities). The instrument's theoretical validation comes from a series of consultations with media literacy experts in each country after a review of various international reports (UNESCO, 2008; United Nations, 2008; World Economic Forum, 2013). But no contrasting empirical data are provided for the validation of the construct developed in order for it to be fully recognized.

In recent years Spain has seen an increase in the number of approaches in this field of study. A 2005 initiative by the Audiovisual Council of Catalonia coordinated by Joan Ferrés led to a group of experts from Spain and Latin America drawing up a foundation document called 'Competence in Audiovisual Communication' with a ground-breaking systematic approach to the concept of 'communicative competence' as the

Table 1. Assessment criteria for media literacy.

Paradigms of media literacy	Hobbs (2010)	Buckingham et al. (2005)	Jenkins (2006)	Celot and Tornero (2009)	Livingstone et al. (2005)
New Media Literacies (Jenkins, 2006; Luke, 2007)	Access: finding and using media and technology tools skill fully and sharing appropriate and relevant information with others	Access: to gain access to media content, using the available technologies and associated software	Play performance simulation appropriation multitasking distributed cognition collective intelligence	Use: media operational skills required for the effective use of media tools	Access: basic functional or navigational competences, competence in controlling the technology and competence in regulating the technology
Critical Media Studies (Kellner & Share, 2007)	Analyze and evaluate: comprehending messages and using critical thinking to analyze message quality, veracity, credibility, and point of view, while considering potential effects or consequences of messages	Understanding: interpretation, evaluation, and responses to mass media, including the various forms of content found on the Internet	Judgment: to evaluate the reliability and credibility of different information sources	Critical Understanding: to knowledge and semiotic operations: encoding/decoding, interpreting and evaluating media text	Understanding: how do people draw on the media to understand the world. Critical media: the ability to evaluate texts and sources and to differentiate in levels of trust between them

(*Continued*)

Table 1. Continued.

Paradigms of media literacy	Hobbs (2010)	Buckingham et al. (2005)	Jenkins (2006)	Celot and Tornero (2009)	Livingstone et al. (2005)
Medium Theory (McLuhan, 1972; Meyrowitz, 2009)	Create: composing or generating content using creativity and confidence in self-expression, with awareness of purpose, audience, and composition techniques	Create: deliberate experience of media production and every day practices of communication and interaction	Transmedia navigation: to follow the flow of stories and information across multiple modalities		Understanding: to understand the media (a matter of decoding or interpretation, of recognition of textual construction, generic conventions, rhetorical devices, production imperatives and institutional structures)
Pragmatism (Putnam, 2009; Mason & Metzger, 2012)	Reflect: applying social responsibility and ethical principles to one's own identity and lived experience, communication behavior and conduct. Act: to share knowledge and solve problems in the family, the workplace, and the community, and participating as a member of a community		Networking: to search for, synthesize, and disseminate information. Negotiation: to travel across diverse communities, discerning and respecting multiple perspectives, and grasping and following alternative norms	Communicative and participative abilities: interact with others and maintain networks	Interacting with media: to create their own media content very much within the bounds of a media program. Creating media: to *access* and *understand*, media-literate people should also be able to *create* media content

> capacity of the individual to interpret and critically analyse audiovisual images and messages and to express himself with confidence in the communicative setting. This competence is related to knowledge of the media and the basic use of the necessary multimedia technologies in order to achieve it

This study identified and conceptualized a series of dimensions deriving from critical, semiotic, interactive, and pragmatic positions (Ferrés, 2006, 2012; Ferrés, García, Aguaded, Fernández, & Figueras 2011).

The objective of the work presented here is to make a contribution to the design of instruments to measure media competence. Following the review of the various media literacy paradigms and some of the main proposals that articulate the concept of media competence, we have based our proposal on the Hobbs model (2010) because of its simplicity and pragmatic approach.

The indicators presented in this work are just an example of the many possible indicators for each of the competences, also known as criteria, for the assessment of media literacy.

Aims

The main aim is to validate an instrument for assessing media competence in adults aged 18–55 as part of the regional autonomous government of Andalusia's Excellence in Research Project SEJ-5823-2010 entitled 'The audiovisual competence of Andalusian citizenship. Strategies of media literacy in the digital entertainment society'.

The more specific aims are:

- To identify the level of media competence in the adult population in Andalusia (Spain) aged 18–55.
- To identify the extent of the conditioning of demographic variables such as age, gender, salary, employment situation, and income on the levels of media competence in citizens aged 18–55.
- To identify the influence that academic variables like schooling and further education have on the levels of media competence in citizens aged 18–55.
- To identify the existence of digital divides among citizens in order to define the lines of action to target the various groups according to their needs.

Method

Sample

The sample subjects were adults aged 18–55 living in Andalusia. We fixed the sample size based on the idea of infinite populations, with $Z = 2.57$, which means a 99% degree of confidence and a 5% margin of error, corresponding to a sample size of 660 subjects. In the end, the survey consisted of 667 adults.

The gender breakdown was 415 women and 252 men. The age range was 297 subjects between 18 and 30, 231 adults between 31 and 45, and 139 between 46 and 55. Most of the men surveyed were between 31 and 45 while most women were between 18 and 30.

Test dimensions and indicators

The questionnaire was designed following a review of the literature on media literacy paradigms as well as some of the significant contributions drawn from models used to assess media competence. The analysis of the paradigms together with the theoretical proposals led us to conclude that there is more consensus than might be apparent in terms of assessment criteria and media competence. Although different terminology is used, the content is very similar and, in any case, all the proposals

acknowledge the concerns framed within the media literacy paradigms. That is why we have opted for Hobbs' proposal (2010), for its pragmatic characteristics and ease of recognition. The criteria and dimensions (competences) used are: access, analysis and assessment, creation, reflection, and performance, all of which are found in knowledge construction processes and decision-taking.

After the review of other tools with similar aims to the one proposed here, the research team added judgment triangulation for assigning items and indicators with respect to each competence.

The instrument is formed of 16 indicators which, in accordance with their features, are measured by subjective or objective questions and multiple choice (ordinal or nominal) options. Measurement is standardized by interpreting the responses to the items on a scale of 1–4. The interpretation scale was designed by applying the normality criterion (quartiles) to the questions on knowledge and other complex issues, and the arbitrary criterion to questions about attitude with scores ranging from 1 to 4 according to the level of occurrence of the attitude assessed (Table 2).

Validation of the construct

To validate the construct, we carried out a reliability test using Cronbach's alpha coefficient which enabled us to evaluate the scale's internal consistency, together with the test of two halves to verify the stability of the responses. After eliminating those items that increased the variance value, with low rates of correlation to the total of the scale and which raised the alpha value, we obtained an index of 0.649 for 16 elements. Considering that the scale consists of few items and the construct is multidimensional, the alpha index is deemed to be acceptable.

The two halves test yielded a value between forms of 0.527 with a Spearman–Brown coefficient of 0.690.

The factor analysis was used to examine the construct's internal structure. Analysis of the main components and a Quartimax with Kaiser rotation acted as the extraction method, which identified five factors that corresponded to six dimensions on the scale, with the total variance explained by a factor set of 50.57% (Table 3).

Results

Objective one: to identify the level of media competence in the adult population.

The overall results, considering the direct scores and the mean value (39.25), show that the adults aged 18–55 in the survey have a high media competence level, scoring more than 8 points over the central value (between the maximum and minimum value). If each dimension is analyzed, we observe that 'access' shows the greatest distance in terms of the mean over the central value, which could mean that the adults scored highest in this competence relative to interaction with the media. By contrast, the 'analysis' and 'act' competences present average values that are close to the central value which indicates that the adults have lower skill levels in these dimensions.

Finally, the 'create' and 'reflection' competences scored slightly higher than the central value and there was relatively little dispersion, which could indicate moderate values of media competence for the create and reflection dimensions (Figure 1).

Objective two: to identify the extent of the conditioning of demographic variables.

An analysis of variance (ANOVA) was carried out to check the correspondence of the adults' demographic data to the levels of media competence. The ANOVA results, the values of F and $p < .05$, show that the differences in the dependent variable values are not random but are due to the influence of factors such as age ($F = 11.362$; $p < .001$), gender ($F = 11.631$; $p = .001$), work situation ($F = 4.136$; $p < .001$), income ($F = 3.445$; $p = .002$), and education ($F = 48.808$; $p < .001$) (Table 4).

Table 2. Competences, indicators, and measurement standardization.

Competences (Hobbs, 2010)	Indicators	Item	Scale			
			1	2	3	4
1. Access	Create digital content and maintain contact with other users via an individual or social medium	1. Indicate whether any of the following activities have been performed: create a blog/upload files to Youtube/ participate in forums/chat rooms/ Facebook/Tuenti/videoconferences/ Twitter	1st Quartile (≤14)	2nd Quartile (15–17)	3rd Quartile (18–20)	4th Quartile (21–26)
	Frequency of use of digital media in everyday life	2. Indicate how often the following activities are performed: reading newspapers, purchasing online/online banking/downloading films/ downloading music	1st Quartile (≤12)	2nd Quartile (13–15)	3rd Quartile 16–18	4th Quartile (19–29)
	Access to digital social networks	3. Do you have an account with a social network? (MySpace, Xing, Facebook, Tuenti, Google+, Hi5, Bebbo, LinkedIn, YouTube, Twitter …)	NO			YES
2. Analyze and evaluate	Knowledge of how information is organized by the mass media	4. Indicate which of the following sections of a newspaper match these examples:	1st Quartile (≤5)	2nd Quartile (6)	3rd Quartile (7)	4th Quartile (8)
	Knowledge of who owns and controls the main media conglomerates in each country	5. Certain media outlets belong to particular multimedia companies or business groups. Do you know which groups the following media belong to?	1st Quartile (≤4)	2nd Quartile (5)	3rd Quartile (6–7)	4th Quartile (8)
	Knowledge of the main media conglomerates' sources of finance in each country	6. Which are the two main sources of finance for the programs on these channels?	1st Quartile (≤2)	2nd Quartile (3–4)	3rd Quartile (5–6)	4th Quartile (7–10)

(*Continued*)

Table 2. Continued.

Competences (Hobbs, 2010)	Indicators	Item	Scale			
			1	2	3	4
3. Create	Knowing how to distinguish different types of production in terms of communication characteristics	7. Grade these productions using the following category types:	1st Quartile (≤2)	2nd Quartile (3–4)	3rd Quartile (5–6)	4th Quartile (7–10)
	Identifying and recognizing the different types of digital resources	8. Identify each of the following examples with one of the categories which indicate:	1st Quartile (≤7)	2nd Quartile (8)	3rd Quartile (8)	4th Quartile (9)
	Distinguishing the various digital resources in terms of their usefulness	9. Match some of these features (find information/communicate with friends/create content/reading information) to the following examples:	1st Quartile (≤3)			4th Quartile (4)
	Subject's awareness of image ductility as news resource	10. 'When the news is accompanied by images, I am less likely to be manipulated'	YES			NO
4. Reflect	Measure citizens' awareness of the limits and regulations that pertain to TV broadcasts which target children	11. Which of these rights and regulations apply to content aimed at children and adults (indicate preferred option with 'X').	1st Quartile (≤3)	2nd Quartile (4)	3rd Quartile (5)	4th Quartile (6)
	A person's attitude when confronted by the risk of invasion of privacy that can occur on the Internet	12. Before entering your personal data (credit card, email, phone number, etc.) on the Internet when making a purchase, do you download a program or sign up to an online service?	I would not trust any website / I would make no judgment on the issue	I trust my own instincts	I base my decision on the profess-ionalism of the website	I first look for comm-ents about that website

5. Act	Use of Internet to produce and broadcast messages denouncing infringements of rules and ethics	13. Have you ever collaborated in the creation of a campaign (or in its dissemination) by email to a list of acquaintances (or by any other form) that questions the values or stereotypes that appear in media productions (adverts, publicity campaigns, TV series, etc.)?	NO		YES
	Use of the Internet to produce and broadcast messages related to environmental improvement	14. Do you use a specific medium (email, blogs, etc.) to send out messages or perform actions that contribute to the improvement of the social environment you inhabit?	NO	YES, occasionally	YES, often
	Use of the Internet to cooperate with other citizens in the organization of social events	15. Do you use the Internet to cooperate with a group of citizens to perform social or cultural activities (for example, organizing events, trips, or gatherings)?	NO	YES, occasionally	YES, often
	Use of the Internet to communicate with public authorities	16. Have you ever used the Internet to communicate with public authorities?	NO, never	YES, in the last 12 months	YES, in the last three months

Table 3. Results of the factor analysis.

	Assessment criteria for media literacy				
	Act	Access	Analyze	Create	Reflect
Participation in campaign of denunciation	.652				
Ecological-social use of media	.751				
Social cooperation through the Internet	.680				
Use of the Internet as participative medium	.502				
Frequency of digital activity		.766			
Frequency of social digital activity		.480			
Use of social networks		.733			
Classification of sections of the press			.613		
Knowledge of media industry			.700		
Knowledge of how media are financed			.679		
Classification of media product				.687	
Classification of digital resources				.457	
Knowledge for information management				.420	
Critical attitude toward audiovisual message				.516	
Knowledge of rights and regulations					.621
Security measures on the Internet					.711

In terms of gender, the scores for the men ($X = 40.55$) are slightly higher than those for the women ($X = 38.46$). For age, those surveyed between 31 and 45 have the highest level of media competence ($X = 40.07$) relative to the other age groups, with those aged 18–30 slightly behind ($X = 39.83$). Both were above the 50th percentile and considerably higher than those aged 46–55 ($X = 36.39$), who were a bit higher than the 35th percentile.

The work situation of the adults surveyed also conditioned the level of media competence. Those in business tend to have a higher level of media competence than the rest of the citizens ($X = 46.31$), at the 80th percentile; although the N value does not allow us to generalize, which was also true for retired people and pensioners ($X = 33.33$), around the 25th percentile. Public ($X = 40.69$) and private sector workers ($X = 40.07$) also have above-average levels of media competence, above the 50th percentile. The unemployed ($X = 38.54$) and the self-employed ($X = 38.00$) present low levels of media competence, around the 40th percentile, although the values for the jobless are the most dispersed of the sample, which merely reveals the diversity in media competence of this group. The lowest levels of media competence correspond to those who do not go out to work and take care of the housework ($X = 34.92$), slightly higher than the 20th percentile.

The income level presents as a factor that conditions the level of media competence. As income rises, so does the average test score, except for those citizens who earn less than 600 euros ($X = 40.52$), whose level of media competence is above average. This exception is due to the fact that 73% of those who form part of this group are aged 18–30, an age group whose media competence is above average. With the exclusion of this exception an increase in citizens' media competence is palpable, being directly related to higher salaries, with values ranging from $X = 38.01$ (from €600 to €1200) to $X = 41.34$ (more than €3000).

Objective three: to identify the influence that academic variables have on the media competence

Considering that the high F values indicate that the variability between the averages of the samples is greater than that expected for the variability within the samples, it demonstrates that the variables that show greater differences between their averages are level of education ($F = 43.104$) (Table 3). As a consequence, the conclusion is that among the controlled variables the

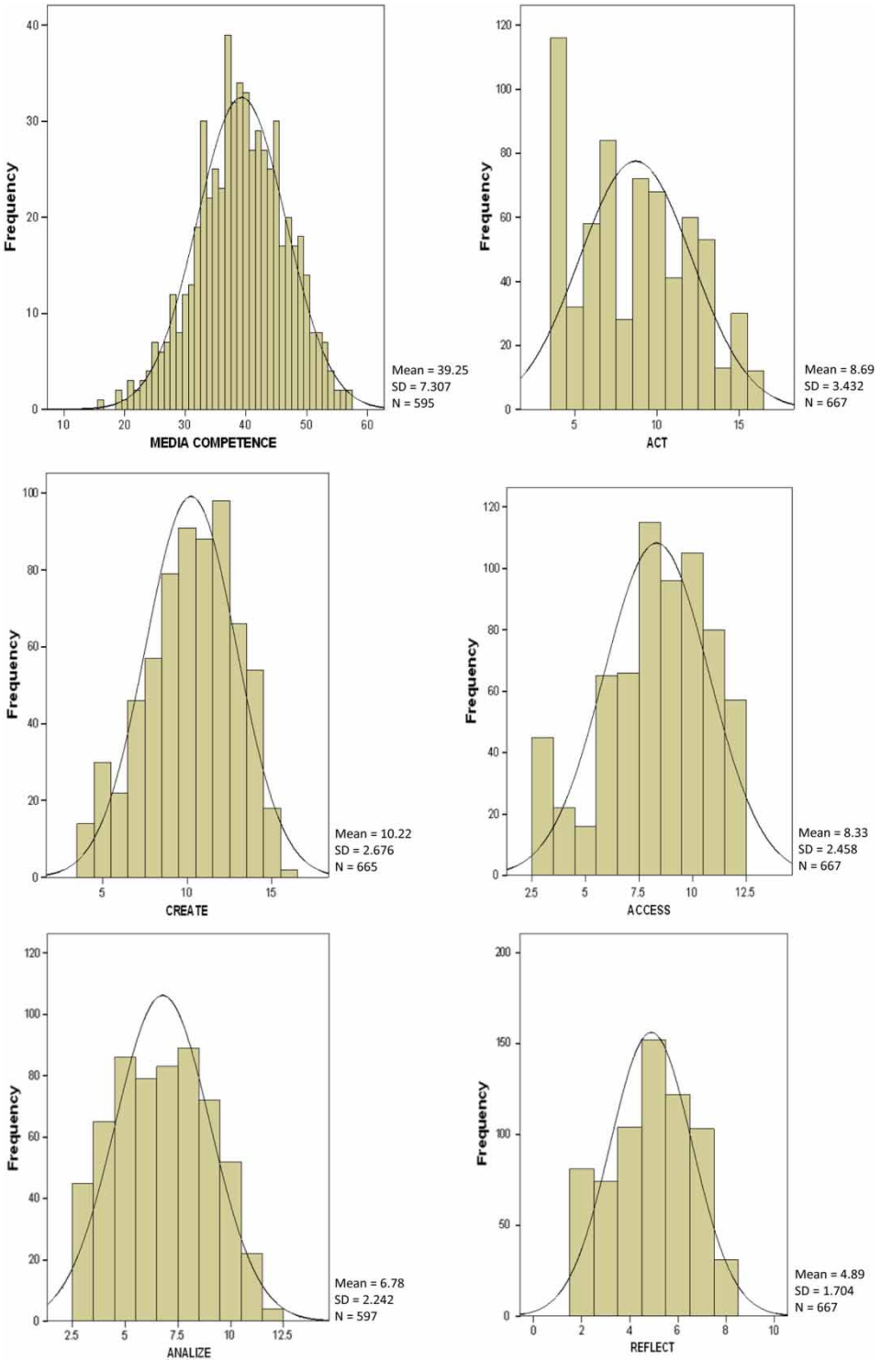

Figure 1. Descriptive analysis.

Table 4. Demographic variables (ANOVA).

Variables	Modality	Mean	*N*	Standard deviation	*F*	Sig.
Age	18–30	39.83	265	6.542	11.362	<.001
	31–45	40.07	215	7.792		
	46–55	36.39	115	7.035		
Gender	Man	40.55	224	8.494	11.631	.001
	Woman	38.46	371	7.973		
Work situation	Public sector worker	40.69	133	6.674	4.136	.000
	Private sector worker	40.07	103	11.485		
	Businessman/woman	46.71	7	6.663		
	Self-employed	38.00	31	5.880		
	Household tasks	34.92	13	2.309		
	Retired/pensioner	33.33	3	7.252		
	Unemployed	38.54	305	7.307		
Monthly income	Less than 600€	40.52	48	7.389	3.445	.002
	€601 to €1200	38.01	126	7.925		
	€1201 to €1800	38.06	133	7.593		
	€1801 to €2400	39.75	112	6.827		
	€2401 to €3000	40.91	78	6.236		
	More than €3000	41.34	62	7.625		
	No income	37.56	36	9.546		
Education	No qualifications	35.00	3	8.185	43.104	.000
	Primary school	31.73	67	6.461		
	Secondary school	38.11	190	7.011		
	University	41.44	335	6.437		

one with greater influence on media competence is the general level of education among those polled. In general, the higher the level of education, the higher the mean value of media competence, with scores ranging from $X = 31.73$ (subjects who only completed primary school education) to $X = 41.44$ (subjects with a university degree). However, there is an exception: subjects who received no formal education but who scored $X = 35.00$. In this case $N = 3$, and these data have no representative value.

Objective four: to identify digital divides among citizens

The aim of this phase of the analysis is to identify collectives among those polled who are defined by their demographic features, which enables us to interpret the level of media literacy in Andalusia (Spain) in greater detail. Conglomerate analysis (clusters) with SPSS software was used in two phases. This is an exploratory tool that enables us to discover groupings or conglomerates from a data set. It is useful when dealing with large data files and allows the simultaneous use of variable and continuous categories, automatically selecting the optimum number of conglomerates. Three clusters were identified (Table 5).

(1) Cluster (a) ($f = 207$; 34.78%). Those in the middle age group with degree-level qualifications. This collective is mainly characterized by age, work situation, income, and level of education. They are mainly aged between 30 and 45, work in the public sector, earn more than 1800 euros a month, and have been in higher education.
(2) Cluster (b) ($f = 142$; 28.86%). Adults with primary education or no formal education at all. This collective is generally characterized by its academic qualifications, work situation, income, and level of education. They have no academic qualifications or if so, only to primary school level. They are normally unemployed, although they also

include the retired, pensioners, and those who only do housework. Their income is generally less than 1800 euros a month and they are normally over 30.

(3) Cluster (c) ($f = 246$; 41.34%). Young people with secondary or university education. This conglomerate is mainly characterized by age, work situation, income, and level of education. This is the youngest collective, aged between 18 and 30. They are usually unemployed, as is expected of their age group. They have less income than other groups. Their monthly income rarely exceeds 1800 euros; the average salary is usually less than 1200 euros. The typical feature of this conglomerate is that they have secondary school or university qualifications.

The variation between conglomerates shows the relation that the clusters identified have on the measurement and its dimensions: creation, actuation, reflection, access, and analysis. The box diagrams illustrate these aspects, in which we observe the following (Table 6, Figure 2):

Table 5. Conglomerates analysis and demographic variables.

Variables	Modalities	Cluster (a)		Cluster (b)		Cluster (c)	
Age	18–30	1	0.4%	19	7.2%	245	92.5%
	31–45	124	57.7%	90	41.9%	1	0.5%
	46–55	82	71%	33	28.7%	0	0%
Gender	Man	109	48.7%	48	21.4%	67	29.9%
	Woman	98	26.4%	94	25.3%	179	48.2%
Work situation	Public sector worker	120	90.2%	7	5.3%	6	4.5%
	Private sector worker	36	35.0%	34	33.0%	33	32.0%
	Businessman/woman	6	85.7%	1	14.3%	0	0%
	Self-employed	19	61.3%	7	22.6%	5	16.1%
	Household tasks	5	38.5%	8	61.5%	0	0.0%
	Retired/pensioner	1	33.3%	2	66.7%	0	0.0%
	Unemployed	20	61.0%	83	27.2%	202	66.2%
Monthly income	Less than €600	6	12.5%	8	16.7%	34	70.8%
	€601 to €1200€	8	6.3%	52	41.3%	66	52.4%
	€1201 to €1800	29	21.8%	48	36.1%	56	42.1%
	€1801 to €2400	57	50.9%	20	17.9%	35	31.3%
	2401 to 3000	59	20.5%	2	9.0%	17	70.5%
	More than €3000	48	77.4%	1	1.6%	13	21.0%
	No income	0	0.0%	11	30.6%	25	69.4%
Education	No qualifications	0	0.0%	1	33.3%	2	66.7%
	Primary school	1	1.5%	60	89.6%	6	9.0%
	Secondary school	37	19.5%	51	26.8%	102	53.7%
	University	169	50.4%	30	9.0%	136	40.6%

Table 6. Clusters and literacy competence.

	Cluster (a)		Cluster (b)		Cluster (c)	
Media competence	Mean	SD	Mean	SD	Mean	SD
General	42.00	6.227	33.02	7.028	40.53	6.155
Action	9.79	3.420	7.08	2.898	9.11	3.291
Analysis	8.00	2.156	5.87	1.992	6.29	2.156
Access	7.87	2.308	7.01	2.494	9.66	1.682
Creation	10.83	2.567	8.65	2.729	10.73	2.315
Reflection	5.50	1.421	4.41	1.775	4.74	1.756

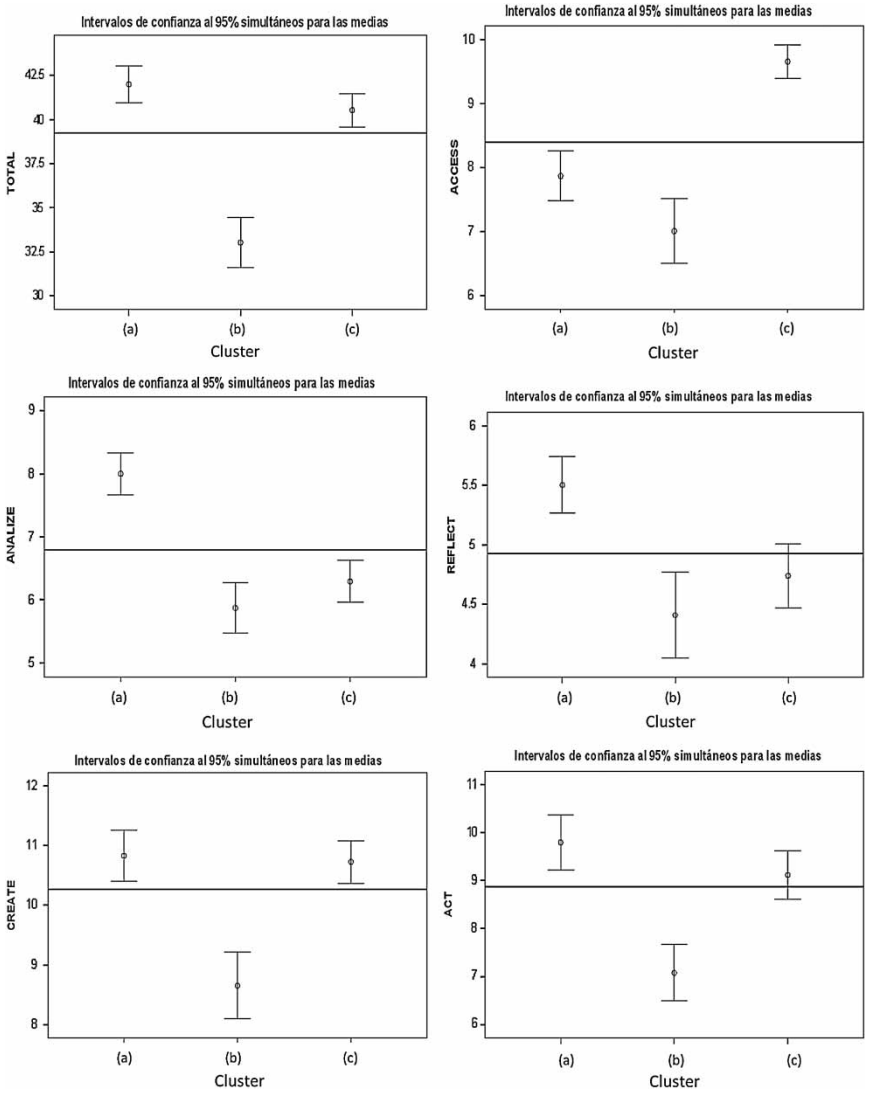

Figure 2. Box diagram.

(1) Cluster (a), composed of middle-aged citizens with a high level of education and social status, manifesting high levels of media competence although with certain qualifications.
(2) Clusters (a) and (c) both have similar scores although Cluster (a) rates slightly higher in the analyze, create, reflect, and act dimensions while Cluster (c) scores better in the access dimension. In this sense, we can conclude that the youngest subjects with a secondary school or university level education score higher for access and in the interactive skills used to handle technological media. But it is the middle-aged, highly qualified citizens who are better skilled in those other competences that signify the ability to manage the media.

(3) Cluster (c), middle-aged citizens who are generally unemployed, or on low salaries and with only a primary or secondary school level of education show the lowest levels of media competence, which reveals a definite digital divide in terms of both social status and digital competence. The evident correlation between digital competence and social status points to the need to strengthen measures that foment media literacy among citizens.
(4) So, this analysis draws three different citizen profiles that reveal varying levels of media literacy either in general terms or through the various dimensions that form the construct. All this needs to be taken into consideration when designing media literacy strategies for citizens.

Conclusions

First, the instrument constructed for this investigation is deemed valid for measuring media competence in citizens of the region of Andalusia (Spain). The instrument's internal validity has been proved by the scores on the viability indexes and the value of the variance explained in the factor analysis. The external validity has been proved by the robustness of the descriptive statistics, the normal trend, and the meaning of relations between the test scores and the demographic variables analyzed. Second, given the lack of studies to enable us to contrast the measurement, the unimodal nature slightly asymmetric to the left of the normal curve, together with the average value higher than the central value of the scale, shows that adults in Andalusia generally have a high level of media competence. It is in those competences relative to interaction with the media where those polled showed higher levels of literacy.

In terms of the relation between media competence and the controlled demographic variables in the study, the ANOVA analysis enabled us to conclude the following:

(1) Education. This variable has the greatest influence on media competence among all the controlled variables in the study, including specialized instruction in the subject.
(2) Age. Adults aged 31—45 are the ones with the highest level of media competence followed by the younger age group of adults between 18 and 30.
(3) Gender. Men scored slightly higher than women.
(4) Work situation. Business people have a level of media competence that is far superior to the rest although their scarce representation in this sample does not allow us to generalize. Apart from this collective, it is public and private sector workers who have the highest levels of media competence.
(5) Income. As income rises, so does the level of media competence.

The conglomerates analysis has enabled us to identify collectives grouped around the demographic variables and media competence in order to gain an in-depth understanding of the characteristics of adults under 55 in media competence. Three collectives are identified:

(1) Cluster (a). Those in the middle age group with degree-level qualifications. They are mainly aged between 30 and 45, work in the public sector, earn more than 1800 euros a month, and have been in higher education. This group got the highest overall score as well as in the 'ethics' and 'esthetics' dimensions. They also scored well above the other groups in 'production' and 'reception'.
(2) Cluster (b). Adults with primary education or no formal education at all. This collective is generally characterized by its lack of academic qualifications, and they are normally

unemployed, although this group also includes the retired, pensioners, and the jobless who take care of housework. Their monthly income is generally less than 1800 euros, and they are normally over 30. This collective generally has the lowest level of media competence as well as in each of the dimensions.

(3) Cluster (c). Young people with secondary or university education. This conglomerate is mainly characterized by age, work situation, income, and level of education. This is the youngest collective, and they are usually unemployed. Their average monthly salary is usually less than 1200 euros. This collective has the highest level of competence in the 'interaction' and 'language' dimensions.

Although it is the youngest adults in the sample that include the highest number of jobless, this is seen as a structural factor recognized worldwide as affecting countries hit by the recent ongoing economic crisis. Taking this into consideration, the results of this analysis confirm the existence of a digital divide among citizens in Andalusia. This divide is understood as a considerable difference among citizens of Andalusia in terms of employment, salary, and education, aspects which this study shows to be directly correlated to the level of media literacy, and which is in line with the now universal recognition of their indisputable importance in combating exclusion and marginalization (Jimoyiannis & Gravani, 2011; Selwyn, 2004a, 2004b). If we accept this fact, then the existence of direct correlations between levels of education and training and the level of media literacy in part confirm the validity of the indicators used.

The conglomerates' analysis confirms the higher levels of new media literacy among the youngest and better educated adults, which leads to greater control in terms of interaction and the language used. The youngest have a superior knowledge of the use of social networks and the numerous resources and applications available on the Net and in mobile phones. However, adults over 30 are more capable in terms of the critical and participative dimensions of the media, as they scored highest in the dimensions of reflection, analysis, creation, and action. Analysis forms part of the critical understanding of the media and its regulations, as well as awareness of citizens' rights, authorship, concentration, and pluralism. Greater control over the competences of action is proof of the greater social involvement of this collective. These results corroborate the evidence from other studies (Calvani, Fini, Ranieri, & Picci, 2011) that show that the youngest citizens – defined as digital natives (Prensky, 2001a, 2001b), the Net generation (Oblinger & Oblinger, 2005; Tapscott, 2008) – are not so competent as generally defined especially when considering media literacy as a concept that transcends dimensions that are strictly technical and interactive to include the critical and ethical dimensions.

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Notes

1. www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+REPORT+A6-2008-0461+0+DOC+XML+V0//ES

2. http://ec.europa.eu/avpolicy/media_literacy/docs/recom/c_2009_6464_es.pdf
3. http://ec.europa.eu/avpolicy/media_literacy/docs/recom/c_2009_6464_es.pdf, p. 6 numeral I.2.
4. http://ec.europa.eu/avpolicy/media_literacy/docs/recom/c_2009_6464_es.pdf, p. 3 numeral 7.

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