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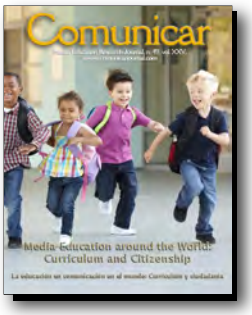

Dimensions and Indicators of the Information Quality in Digital Media

Dimensiones e indicadores de la calidad informativa en los medios digitales

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ABSTRACT

The current information ecosystem, crossed by a logic mediamorphosis, is increasingly generating the emergence of digital media and information portals that do not follow the formal publishing procedures of conventional media. The crisis of traditional media has also changed the way we become informed. However, information quality remains a factor for discussion in the absence of unified criteria for analysis. In this regard, the question arises: how do we evaluate and assess the quality of information in digital media? This study aims to seek agreement between academics and media professionals on the areas and dimensions of information quality of digital media according to objective or quantifiable values. For this, a taxonomy of the dimensions related to information quality was created, based on the review of scientific literature and further evaluated and validated by 40 experts, including scholars and media professionals alike, who focused on verifying the classification´s reliability. As a result, three macro areas of information quality, containing 21 areas, inherently comprised of a total of 75 dimensions, were validated. Lastly, this study proposes a structured model that will allow for the analysis of information quality of digital media, both in its pre-information phase catalogued in the media-business and on the media-workers' socio-occupational characteristics, as well as its final product and informational content.

RESUMEN

El actual ecosistema informativo, atravesado por una lógica de mediamorfosis, está generando con gran velocidad el surgimiento de medios digitales y portales informativos que no siguen los procedimientos editoriales formales de los medios convencionales. La crisis de los medios de comunicación tradicionales ha cambiado también nuestra forma de informarnos. Sin embargo, la calidad informativa sigue siendo un factor de discusión al no existir unidad de criterios para su análisis. En este sentido surge la pregunta ¿Cómo evaluar y valorar la calidad informativa de los medios digitales? Este trabajo contribuye a buscar convergencias entre académicos y profesionales de la comunicación sobre las áreas y dimensiones de la calidad informativa de los medios digitales en función de valores objetivos o cuantificables. Para ello se ha realizado una taxonomía de dimensiones de la calidad informativa a partir de la revisión de la literatura científica, para posteriormente someterla a la evaluación y validación por juicio de 40 expertos, académicos y profesionales de la comunicación, para verificar su fiabilidad. Como resultado, quedaron validadas tres macroáreas de la calidad informativa, que contienen 21 ámbitos que consideran intrínsecamente un total de 75 dimensiones. Esta investigación propone finalmente un modelo estructurado que permitirá analizar la calidad informativa de los medios digitales, tanto en su fase pre-informativa, catalogadas en el medio-empresa, las características sociolaborales de los trabajadores del medio, así como el producto final y el contenido informativo.

KEYWORDS | PALABRAS CLAVE

Digital media, information quality, information, journalism, Internet, digital journalism, evaluation.
Medios digitales, calidad informativa, información, periodismo, Internet, periodismo digital, evaluación..

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1. Introduction

Communication media are a fundamental pillar of society, as it is through the construction of information that public discourse is created, shaping the realities of our surroundings (Gieber, 1964; Searle, 1997; Watzlawick, 1976: 173). The role or public opinion as a counterweight guarantees democracy (Shoemaker, 2006; Shoemaker & Cohen, 2006), inserted in a context of western liberties and values (Schultz, 2000; McQuail, 1992: 23-66).

Mediamorphosis, characterized by a process of changing consumption habits, and the immediacy and gratuity of most of the media found on the Internet (Aguaded & Romero-Rodríguez, 2015: 45-56), has made many traditional media move to digital interfaces, pitting them "head-to-head" with novel undertakings that take advantage of the Net's simplicity for their development. This evidences the imposition of the information production model of the written press in these new stages (Barnhurst, 2013), and even calls into question the belief that the digital media generate novel information, different from what is produced by their conventional analogues (van-der-Wurff, 2008).

This information stage, ruled by immediacy and pushed into an ecosystem that does not necessarily rely on an editorial validation process, can decline into superficiality, imprecision and even infoxication and disinformation (Salaverría, 2005; Craig, 2011; Urban & Schweiger, 2014). Moreover, as commercialization difficulties increase, ergo the financial management of the media, due to exponential growth in competition, they (news outlets) could plunge into vices and violations of information quality norms in order to stay in the market (Bogart, 2000; Beck, Reineck & Schubert, 2010).

Therefore, it is very common and obvious to see a reduction of payroll in communication media outlets, cancellation of correspondents abroad, pay cuts and the violation of information worker's rights, in order to reduce information production costs to guarantee the media outlet's subsistence. All of this while the contents gravitate towards sensationalism (Gómez-Mompart, Gutiérrez-Lozano & Palau-Sampio, 2015; Romero-Rodríguez, De-Casas-Moreno, & Torres-Toukoumidis., 2015: 33), leisure and pseudo-information to garner attention from audiences and to increase internet traffic, which is translated as returns of capital investment.

This loss of media quality has led to loss of credibility from audiences (Ramírez-de-la-Piscina, Zabalondo, Agirre, & Aiestaran, 2015), due to the factual errors, as well as to the ignorance of journalistic principles of equality and impartiality. These were the conclusions of a 3-year public-opinion study conducted by the "American Society of Newspaper Editors" (1998), coinciding with later analysis such as those conducted by Wyss (2000), Singer (2005), Fortunati and others (2009) and Gómez-Mompart, Gutiérrez-Lozano and Palau-Sampio (2013). These analyses insist on prioritizing the creation of theories on dimensions and indicators of information quality of the media in view of being able to determine the right formulas for offering high-quality journalism.

2. Information quality: State of the art

Defining informational quality is not easy, as the term "quality" covers dimensions where the characteristics of an object –in this case the information product- are compared with certain standards that are linked to norms and values (Rosengren, Tagerud, & Carlsson, 1996). Therefore, quality is an indefinable term, defined through the subjective perception and interpretation of the user (Leggat, 1996). In practice, having a single criterion that is agreed upon by journalists, academics and audiences is a near impossible task (Wallisch, 1995; Gómez-Mompart & al., 2013; Urban & Schweiger, 2014). While for audiences that read some kind of information, quality can be expressed and defined by the clarity of presentation of a message or it is derived implicitly from the media outlet's brand or agency that created it, for a journalist, this could be based on the time it took to conduct the investigation, access to reliable sources, and the contrasting of information. However efforts have been made in the academic world to try to define quality and its components, based on more or less objective criteria.

For Picard (2004: 54-66), information quality is present when the amount of self-produced information is greater than that generated by external agents, and when information and education take precedence over leisure content. Also, it should be taken into account that said content should follow a method of information obtention, such as relying on diverse and contrasting of informational sources, as well as technical efficiency of the organization that allows the products to be well organized and understandable.

For Schultz (2000), information quality depends on three existing elements: availability of adequate resources, political and legal regulations that protect and guarantee the exercise of freedom by the communication media, and the journalist's adherence to professional standards. In addition, other essential aspects are the diversity of media and ideologies represented, as well as objectivity. In addition, the author explains

that informational quality is not only subject to internal conditions of the media, but also to the context where it is found.

This understanding is also supported by McQuail (1992: 23-66), who defines informational quality from the perspective of public interest, where the evaluation criteria are deduced from Western values such as liberty, equality and order. The authors do not conceive that information quality of the media could exist in countries that have democratic deficit, limitations to the exercise of associated liberties such as expression, information, access to official sources, nor in those countries lacking adequate available resources –whether economic, human or technological– for the journalistic endeavor.

Rosengren (1979: 31-45) arrived at the conclusion that the most adequate method for verifying the existence of information quality was to measure the journalistic discourse against statistical data or independent documentation. However, this method is limited to understanding quality only in terms of truthfulness or contrast, but does not take into account events that do not come or are not shown in official documents.

Two decades earlier, Lang and Lang (1953: 2-12) ensured that the formula for measuring truthfulness and objectivity of a journalist narrative is the comparing and contrasting of published information directly with witnesses present at the event. Halloran, Elliot and Murdock (1970) as well as Meyer (1987) have also recommended this method, but this is an evaluative process that due to the complexity of its execution, is impossible to perform for a representative amount of samples.

A third group of authors, among which we find Martin (2008), Bird (2010), Madianou (2010) and Costera-Meijer (2012), consider that excellence in the exercise of journalism is confronted with changes in the habits of information consumption, a tendency that prioritizes leisure content over any evidence of quality.

2.1. Taxonomies and models of evaluation

Most of the structural efforts for cataloguing normative dimensions of information quality have been performed by German and Dutch academia (Schatz & Schulz, 1992; Pottker, 2000; Arnold, 2009). Urban and Schweiger (2014: 823) unify these catalogs into six basic dimensions of informational quality: 1) diversity (of points of view and sources); 2) relevance (in terms of the usefulness of the information for the making of decisions); 3) exactness (of the information with respect to the events); 4) understandability (so that it is understandable by the audiences); 5) impartiality (to guarantee neutral and balanced informational coverage); 6) ethics (respect the fundamental rights of the people and maintain moral attitudes). On is part, Costera-Meijer (2012) presented a second method of evaluation and evaluation of journalism through the experiences of the user through common patterns such as participation (interactive component), representation (semantic component) and presentation (aesthetic component).

A third model, from authors van-der-Wurff and Schönbach (2011), catalogues and evaluates the elements of informational quality, as a function of codes of conduct and transparency using a 5-point scale, as follows: Carefully verify the facts (4.7); Separate editorial content from advertising (4.6); Complete identification of the sources (4.5); Avoid using journalist pseudonyms (4.4); Not manipulating images or declarations (4.4); Diversity of opinions (4.4); Understandability of the information (4.2); Transparency (4.1); Separating facts from opinion (4.1); Objectivity (3.9); Protection of privacy (3.8); Classification of the news as a function of their importance (3.7); Separate

> This means that information quality is not only subject to the final product of the media –the information–, but also to internal conditions and the context where the media is found. Therefore, when referring to quality and information standards of the media, far from being an unreachable subject due to its diverse subjective interpretations, all the stages of the productive process should obligatorily be taken into account, and the final product should be analyzed as an objective function of its indicators, dimensions and areas.

information from entertainment (3.5); Only publish information with informational value (3.0); Publish fast (2.9); Answer the audience's requests (2.4); and entertain the audience (2.2).

It is important to highlight that since 1995, a research team from the University of Chile, led by Silvia Pellegrini and Constanza Mujica (2006: 14-15), has started to apply a model of evaluation of journalistic quality in various countries in South America, creating the formula "Journalistic Added Value" (VAP). This formula is based on putting into operation concepts of equality, exactness, relevance and fairness –a concept inspired by Hagen (1995) and Hagen and Beren (1997: 158-178)–, so that they can be later measured in content analysis of the information (Alessandri, Edwards, & Porath, 1999: 114-115; Pellegrini & Mujica, 2006: 14-15). This analytical taxonomy studies the work by communication media exclusively through their content, taking into account two key moments in the journalistic process: the selection of information and the creation of units of information, each one with their respective indicators. Another important research effort is the one by Iglesias-García y González-Díaz (2012), who analyzed the quality of the digital newspaper VilaWeb through a model constructed "ad hoc" where indicators and score values were verified.

On their part, De-Pablos and Mateos (2004: 341-365) have developed a set of quality tags for printed media, which they state should be freely available to audiences. These take into consideration two aspects of the internal context of information production: media as a business and media as a place of work, as well as how information product (content) would be evaluated.

With regard to the first aspect, related to the business dimensions of the medium, De-Pablos and Mateos (2004: 359) explain that the composition of shareholders, the state of the accounts and distribution and sales data should be made available to the public. These data would allow readers to understand the economic and political interests of the medium, as well as its editorial inclination. In second place, in agreement with the social-work dimension, the authors ask that worker conditions be measured as a function of their number, productivity, professional qualification, degree of specialization on the designated source, deontological and style norms, degree of labor conflict, salary, shifts and workdays, as well as the staff's work benefits. Lastly, the model of quality tags, as well as the VAP model explained above (Pellegrini & Mujica, 2006), reviews the content as a function of the final product's quality, evaluating aspects such as: diversity of sources, frequency of use of corporate sources, use of document databases, percentage of their own subject matter, percentage of investigative journalism and degree of linguistic correctness.

We now proceed to posit an articulated taxonomy for the evaluation and assessment of information quality of digital communication media, focused on "online" editions of printed media, as well as those that have only a digital presence. The analysis of cyber-media aims to determine parameters of quality and to identify guidelines or tendencies. Also, the objective is to establish comparisons between the many existing digital media, and to create a reliable model of information quality.

3. Materials and methods

Starting with the literature review and the analysis of diverse methods mentioned in the academic literature, we now proceed to posit an articulated taxonomy for the evaluation and assessment of information quality of digital communication media, focused on "online" editions of printed media, as well as those that have only a digital presence. The analysis of cyber-media aims to determine parameters of quality and to identify guidelines or tendencies. Also, the objective is to establish comparisons between the many existing digital media, and to create a reliable model of information quality. For this, we start by structuring three macro-areas or index that have close relationship with information quality. These are: a) Business characteristics of the medium; b) Social-work conditions of the information professionals; c) Content and final product.

For each of these macro-areas or index, a set of areas and dimensions that come from the academic literature review are established a priori, especially the works by Alessandri and others (1999: 114-11), De-Pablos and Mateos (2004: 341-365), Pellegrini and Mujica (2006: 14-15), van-der-Wurff and Schönbach (2011) and De-Urban and Schweiger (2014: 823).

After the initial structuring of the taxonomy of information quality elements and their organization intro three macro-areas that contain 21 areas and 75 dimensions, their evaluation and validation by expert judgement was performed in order to verify the reliability of the model. Also, the granting of a quantitative assessment to each dimension would in practice allow for obtaining a score for each unit of analysis of the digital media.

3.1. Methodological strategies

The methodological framework that supports this empirical study was conducted through a selective methodology, with the objective of obtaining quantitative information from the population or professional branch, using a design that externally controls the correct selection of the elements of analysis and the systematization of the gathering of data on information quality of digital media (Gómez, 1990). In order to create the questionnaire, the main theoretical references that comprise this research were taken into account, pointing to the most-significant indicators to justify the object of study. In this sense, the validation of areas, dimensions and indicators was made through a quantitative poll comprised of 75 questions using a Likert scale of 1 to 5, where 1 corresponds to "completely disagree" and 5 to "completely agree".

Therefore, an expert judgement was used for the development of this tool which, according to Cabero and Llorente-Cejudo (2013: 14), consists in soliciting a set of people's judgements towards an object or opinion on a specific aspect. In this way, a total of 40 evaluators were used, of which 32 were European and 8 Latin American. We intended to delve into a double academic and professional viewpoint, with the aim of attaining an instrument with high index of reliability. From the total sample, 55% belonged to the academic sector, and 45% were journalism professionals or another sector related to communication. In order to obtain a high-quality tool, construct validation of the content was performed (Jaime, Galán, & Pacheco, 2016: 9). This was done with the aim of studying the units of analysis of the digital communication media, as well as the order and coherence of the proposed items, to subsequently conduct an exploratory factorial analysis tending to the mean and the standard deviation of each of the 75 items.

To measure the degree of agreement between the experts consulted, the statistical program SPSS was used, establishing the need to not reject the subjective elements that the judging could provide. In this way, if the agreement was high, there would be a greater consensus in the process of assessment, and therefore, a greater possibility of response by the instrument of measurement (Escobar-Pérez & Cuervo-Martínez, 2008; Robles & Rojas, 2015).

The internal consistency of the test was highly reliable, with a Cronbach's Alpha of .884, confirming the measuring of the multiple inter-related factors. According to George and Mallery (2003: 231), when the Alpha coefficient is >.90, we could say that the reliability of the instrument is excellent, and if it is >.80, we can say that it is good. On their part, Welch and Comer (1988) confirm that the reliability and internal consistency of the questionnaire can be calculated with Cronbach's Alpha and the correlation of the items through the use of a Likert-type scale that were used in this study. Then, when comparing the different items proposed, it can be stated that the internal consistency is good, as none of the indicators had a Cronbach's Alpha that was below .879.

4. Analysis of the results

In order to explain the validation of the instrument, it should be noted that the descriptive statistical data of the 75 items are presented, as well as the means, thus establishing a differentiation between the groups of those polled (academics or professional) that comprised our sample of expert judgment.

The first macro-area, focused on the business characteristics of the medium, received values close to 3, at the academic as well as at the professional level. The overall high values were found for items 10, 8 and 2, while the lowest scores were detected in items 4, 15 and 1. Also, the highest values in the academic sector were linked to items related to economic interests (4.77/item 2), the obligation of the right to respond (4.77/i10) and the code of ethics rules (4.64/i8). On their part, at the professional level, the values that garnered the highest results were the existence of a code of ethics rules (4.89/i8), the obligation of the right to respond (4.89/i10) and the acceptance of prizes given to journalists (4.78/i6).

On the other hand, the data on the lowest scores granted by the economic sector were those related to the legal entity (3.45/i1), the personnel hiring laws (3.82/i5) and the acceptance of prizes (3.91/i4). On

their part, the professional sector granted the lowest scores to the legal entity (3.61/i1), the personnel hiring laws (3.72/i15) and the acceptance of prizes (3.89/i4). Despite having an elevated mean in the work area, it can be concluded that there was unanimity among those polled (table 1).

Table 1. Descriptive statistical data of the business areas of the media

	Work type of those polled		
	Academia	Professional	Total
Business areas of the media			
1. Legal entity	3.45	3.61	3.52
2. Economic interest links	4.77	4.72	4.75
3. Transparency	4.41	4.39	4.40
4. Mean acceptance of prizes	3.91	3.89	3.90
5. Acceptance of prizes-editor	4.36	4.00	4.20
6. Acceptance of prizes journalists	4.23	4.78	4.47
7. Norms prizes and perks	4.23	4.22	4.23
8. Code of ethics norms	4.64	4.89	4.75
9. Disciplinary procedure norms	4.41	4.61	4.50
10. Obligation to reply norms	4.77	4.89	4.83
11. Right to reply norms	4.50	4.61	4.55
12. Obligation to rectify norms	4.09	4.06	4.07
13. Policies of internal communication	4.45	4.44	4.45
14. Plans for continuous training	4.18	4.22	4.20
15. Hiring of personnel norms	3.82	3.72	3.77
16. Manual of obligations and functions	4.05	4.06	4.05
17. Complaints and dismissals	4.00	4.22	4.10

The second macro-area, related to the social-work conditions of the professional sector, received a score close to 3, with some high scores in a few dimensions. The high scores at the academic level were given to items related to the mean of editor and directors in communication media (4.82/i20), the mean of members of the Editorial Board (4.77/i19). Lastly, the mean of members of the Management Board, the mean of staff and the mean of photographers, all obtained the same score (4.5/i18, i21, i22). As for the professional sector, the highest assessment was linked to the mean of the members of the Editorial Board and the mean of editor and directors, both with the same score (4.83/i19, i20), and the mean of staff and the mean of photographs, also with similar values (4.72/i21, i22).

On the other hand, the lowest-scored items in the group of academics were given to the columnist's salary (3.50/i31), the percentage of junior journalists (3.41/i37) and health coverage (3.18/i33). On their part, the professional sector gave the lowest scores to study grants (3.44/i34), the average salary of their collaborators (3.33/i32) and health coverage (3.11/ i33).

It should be noted that this dimension had a more centered mean, despite counting with elevated values in some items. Also, it is necessary to indicate that there is a differentiation between the answer of some polled according to the sector they belonged to, but overall, only on the lowest scores (table 2).

Lastly, the third macro-area, whose aim was to analyze the content and the final product, received very high mean values, closer to 4. From the total obtained, the higher calculations corresponded to items 73, 75, 71 and 72, while the lowest scores belonged to items 60, 64 and 65. Therefore, the results that had the highest scores as given by the academic sector were found for the items related to: the coherence of the photographs (4.86/i75), linguistic correctness and understandability (4.77/i73) and with the same values, the use of primary sources, the ideological equilibrium of the columnists, the process of selection of front page news, and the statistical indicators (4.55/i49, i66, i71, i74). As for the professional sector, the data with the highest scores were connected to linguistic correctness and understandability (4.83/i73), coherence of photographs (4.72/i75) and the quality of basic elements of information (4.67/i72).

On the other hand, the lowest scores given by the academic sector were associated to the average of international information from agencies (3.64/i46), the average of news from geographical sub-areas per issue (3.59/i64) and geographical diversity of the columnists (3.18/i65). While in the professional field, the items with the lowest scores were those like the average of pseudo-information (3.56/i63) and with the same value, the use of self-created photographs, the average of educational content and the average of entertainment content (3.50/ i47, i59, i60).

In this last dimension, besides showing high values on the average, a lack of consistency between both sectors was also showed, coinciding with the acceptance of few similar items (table 3).

5. Discussion and conclusions

Designing a taxonomy for the evaluation and assessment of informational quality of media, specifically for digital media, is not an easy task, in the sense that quality is a polysemic term under subjective evaluation (Leggatt, 1996; Rosengren & al., 1996).

However, the present work shows and validates, through expert judgement, a series of areas, dimensions and indicators as selected by journalists (45%) and academics (55%). This task, in agreement with Wallisch (1995) and Urban and Schweiger (2014), was practically impossible due to the dissimilarities coming from the variety of interpretations of informational quality of the media that these two groups could have. Likewise, the present model allows for the combining the idea of the parameters and indicators, which, as indicated by Codina and others (2014), turns into a sort of "grammar" of evaluation, allowing the development of studies of cyber-media with the help of the dimensions and indicators posited in this study.

The model presented unifies and adapts models presented by Alessandri and others (1999: 114-115), De-Pablos and Mateos (2004: 341-365), Pellegrini and Mujica (2006: 14-15), van-der-Wurff and Schönbach (2011) as well as Urban and Schweiger (2014: 823), classifying information quality into three macro-areas. Two of these are related to the pre-production and journalistic production stages (Media-Business and Social-Work Aspects), and one analyzes the content of the media as a result or final product. These macro-areas are organized into 21 areas that intrinsically include total 75 dimensions.

In the first place, the macro-area "Business characteristics of the media", which contains 17 dimensions, achieved a score of acceptance of 4.2 points over 5. The dimension related to the legal form of the media (private, public or mixed capital) received the lowest score, with a total of 3.52/5. The area "Social-work conditions of professional media workers", with a total of 26 areas, obtained an average acceptance score of 3.93 points over 5. Within it, we found the dimension with the lowest score of the model, related to the health coverage given to journalists, with a score of 3.15. In third and last place, the macro-area "Content and final product of the media", which comprises 32 areas, was scored with an average of 4.14/5, with the lowest score given to the item relating to the geographical diversity of the columnist, with a score of 3.42/5. In this way, the evaluation performed by the experts leaves the model with an average score of 3.95/5. This score allows us to deduce that the experts consulted wholly approved the model presented, as the assessment of all the dimensions and indicators shown received a score above 3/5. Likewise, the global reliability of the instrument used for the gathering of data had a Cronbach's Alpha of 0.884, clearly indicating that the reliability was excellent, as the value was close to >0.9 (George & Mallery, 2003: 231).

These results equally back ideas proposed by Schultz (2000) in the sense that information quality was dependent on the availability of adequate resources, political and legal order that protects and guaran-

Table 2. Descriptive statistical data of the social-work areas of media workers

	Work type of those polled		
	Academia	Professional	Total
Social-work areas of media workers			
18. Mean members of the Management Board	4.50	4.39	4.45
19. Mean members of the Editorial Board	4.77	4.83	4.80
20. Mean editor and directors	4.82	4.83	4.83
21. Mean staff	4.50	4.72	4.60
22. Mean photographers	4.50	4.72	4.60
23. Average pay directors	3.86	3.50	3.70
24. Average pay coordinators	3.82	3.67	3.75
25. Average pay senior journalists	3.95	3.94	3.95
26. Average pay middle journalists	4.00	3.94	3.97
27. Average pay junior journalists	4.00	3.78	3.90
28. Average pay intern journalists	3.68	3.56	3.62
29. Average pay photographer	3.82	3.89	3.85
30. Average pay layout staff	3.77	3.83	3.80
31. Average pay columnists	3.50	3.56	3.53
32. Average pay collaborators	3.64	3.33	3.50
33. Health coverage	3.18	3.11	3.15
34. Study grants	3.68	3.44	3.57
35. Prizes for productivity	3.73	4.17	3.93
36. Percentage of interns	3.55	3.56	3.55
37. Percentage of junior journalists	3.41	3.61	3.50
38. Percentage of middle journalists	3.55	4.11	3.80
39. Percentage of senior journalists	3.68	4.22	3.92
40. Average years of stability photographers	4.41	4.39	4.40
41. Average years of stability columnists	3.86	3.78	3.83
42. Average years of stability collaborators	3.91	3.72	3.82
43. Average main occupation (full-time job)	4.18	3.89	4.05

Table 3. Descriptive statistical data of the information content and final product areas

	Work type of those polled		
	Academia	Professional	Total
Information content and final product areas			
44. Procedure for the defense of the reader	4.14	4.22	4.18
45. Mean of national information from agencies	3.82	4.06	3.93
46. Mean of international information from agencies	3.64	3.94	3.78
47. Use of self-created photographs	3.91	3.50	3.73
48. Use of corporate sources	4.18	3.78	4.00
49. Use of primary sources	4.55	4.39	4.48
50. Average of sources per information unit	4.41	4.44	4.43
51. Average of evidence and information variety	4.45	4.44	4.45
52. Average of sources identified	4.14	4.17	4.15
53. Credits in photography	3.77	3.89	3.83
54. Credits on the information	4.18	4.17	4.18
55. Credits in corporate information	4.27	4.22	4.25
56. Mean of information per issue	3.86	4.11	3.98
57. Mean of journalistic journalism	4.32	4.22	4.28
58. Mean of opinion per issue	3.91	3.72	3.83
59. Mean of educational content	4.05	3.50	3.80
60. Mean of leisure content	3.77	3.50	3.65
61. Mean of hard news per issue	4.18	3.78	4.00
62. Mean of social information per issue	3.95	3.83	3.90
63. Mean of pseudo-information	3.91	3.56	3.75
64. Mean of news from geographical sub-areas	3.59	3.67	3.62
65. Geographical diversity of columnists	3.18	3.72	3.42
66. Ideological equilibrium of the columnists	4.55	4.39	4.48
67. Selection process of columnists	4.41	4.33	4.38
68. Selection process of writers	4.45	4.39	4.43
69. Selection process of letters to the director	4.09	3.94	4.02
70. Process of titling of the information	4.36	4.50	4.42
71. Selection process of information on front page	4.55	4.50	4.53
72. Quality basic elements of the information	4.41	4.67	4.53
73. Linguistic correctness and understandability	4.77	4.83	4.80
74. Statistical indicators	4.55	4.44	4.50
75. Coherence of the photographs	4.86	4.72	4.80

tees the liberty of journalism and the journalist's adhesion to professional standards. This means that information quality is not only subject to the final product of the media –the information–, but also to internal conditions and the context where the media is found. Therefore, when referring to quality and information standards of the media, far from being an unreachable subject due to its diverse subjective interpretations, all the stages of the productive process should obligatorily be taken into account, and the final product should be analyzed as an objective function of its indicators, dimensions and areas. To conclude, the research presented supports future studies and activities that back the information quality of digital media. Likewise, future research could complete the unfinished list of indicators and dimensions that could help improve the weaker aspects of the evaluation of cyber-media.

References

Aguaded, I., & Romero-Rodríguez, L.M. (2015). Mediamorfosis y desinformación en la infoesfera: Alfabetización mediática, digital e informacional ante los cambios de hábitos de consumo informativo. *Education in the Knowledge Society*, 16(1), 44-57. doi: http://dx.doi.org/10.14201/eks20151614457

Alessandri, F., Edwards, C., & Porath, W. (1999). *Estudio de la calidad informativa de la crisis eléctrica. Actas del Seminario de Análisis Crítico de la Información Económica en Chile*. Santiago: Asociación Internacional de Periodistas de Economía y Finanzas (AIPEF). (http://goo.gl/UDa2nl) (2016-02-27).

American Society of Newspaper Editors (1998). *Examining our Credibility, why Newspaper Credibility has been Dropping?* Columbia: ASNE. (http://goo.gl/NXfUXX) (2016-01-14).

Arnold, K. (2009). *Qualitaetsjournalismus: Die Zeitung und ihr Publikum [Quality Journalism: The Newspaper and its Audience]*. Konstanz: UVK. (https://goo.gl/r41VF2) (2016-01-11).

Barnhurst, K.G. (2013). Newspaper´s Experiment Online: Story Content after a Decade on the Web. *Journalism*, 14(1), 3-21. doi: http://dx.doi.org/10.1177/1464884912448898

Beck, K., Reineck, D., & Schubert, C. (2010). *Journalistische Qualitaet in er Wirtschaftskrise [Journalistic Quality in the Economic Crisis]*. Konstanz: UVK. (https://goo.gl/X67pmC) (2016-02-05).

Bird, S.E. (2010). News Practices in Everyday Life: Beyond Audience Response. In S. Allan (Ed.), *The Routledge Companion to News and Journalism* (pp.417-427). London: Routledge. (http://goo.gl/VZAjcP) (2016-01-18).

Bogart, L. (2000). *Commercial Culture: The Media System and the Public Interest*. New Brunswick, NJ: Transaction.

Cabero, J., & Llorente-Cejudo, M. C. (2013). La aplicación del juicio de experto como técnica de evaluación de las tecnologías de la información (TIC). *Eduweb*, 7(2), 11-22. (https://goo.gl/SHpG44) (2016-02-05).

Craig, D. (2011). *Excellence in Online Journalism: Exploring Current Practices in an Evolving Environment*. Thousand Oaks, CA: Sage. (https://goo.gl/dEVJf4) (2016-01-14).

Codina, L., Pedraza, R., Noci, J.D., Rodríguez-Martínez, R., Pérez-Montoro, M., & Cavaller-Reyes, V. (2014). Sistema Articulado de Análisis de Cibermedios (SAAC): Una propuesta sobre el qué y el cómo para estudiar medios de comunicación digitales. *Hipertext.net*, 12. (http://goo.gl/IwXtwM) (2015-01-21).

Costera-Meijer, I. (2012). Valuable Journalism: A Search for Quality from the Vantage Point of the User. *Journalism*, 14(6), 754-760. doi: http://dx.doi.org/10.1177/1464884912455899

De-Pablos, J.M., & Mateos, C. (2004). Estrategias informativas para acceder a un periodismo de calidad en prensa y TV: Patologías y tabla de medicación para recuperar la calidad en prensa. *Ámbitos*, 11-12, 341-365. (http://goo.gl/QuLPFr) (2016-04-12).

Escobar-Pérez, J., & Cuervo-Martínez, A. (2008). Validez de contenido y juicio de expertos: una aproximación a su utilización. *Avances en Medición*, 6, 27-36. (http://goo.gl/IM2Wg2) (2015-03-14).

Fortunati, L., & al. (2009). The Influence of the

Internet on European Journalism. *Journal of Computer-mediated Communication*, 14(4), 928-963. doi: http://dx.doi.org/10.1111/j.1083-6101.2009.01476.x

George, D., & Mallery, P. (2003). SPSS for Windows Step by Step: *A Simple Guide and Reference. 11.0 Update*. Boston: Allyn & Bacon.

Gieber, W. (1964). News is what Papermen Make It. In L.A. Dexter, & D. Manning (Eds.), *White, People, Society and Mass Communications* (pp.173-178). New York: Free Press.

Gómez, J. (1990). Metodología de encuestas por muestreo (pp. 239-310). In J. Arnau, M.T. Anguera, & J. Gómez (Eds.), *Metodología de la Investigación en Ciencias del Comportamiento*. Murcia: Secretariado de Publicaciones de la Universidad de Murcia.

Gómez-Mompart, J.L., Gutiérrez-Lozano, J.F., & Palau-Sampio, D. (2013). *La calidad periodística. Teorías, investigaciones y sugerencias profesionales*. Barcelona: UPF. doi: http://dx.doi.org/10.7203/puv-alg26-9164-8

Gómez-Mompart, J.L., Gutiérrez-Lozano, J. F., & Palau-Sampio, D. (2015). Los periodistas españoles y la pérdida de la calidad de la información: el juicio profesional [Spanish Journalists and the Loss of News Quality: Professional Judgements]. *Comunicar*, 45(23), 143-150. doi: http://dx.doi.org/10.3916/C45-2015-15

Hagen, L. (1995). *Informationsqualität von Nachrichten. Meßmethoden und ihre Anwendung auf die Dienste von Nachrichtenagenturen [Information Quality of News. Measurement Methods and their Application to the News Agency Services]*. Opladen: Westdeutscher.

Hagen, L., & Beren, H. (1997). *Relevanz von Nachrichten. Messmethoden für ein zentrales Qualitätskriterium und ihre Anwendung auf Dienste von Nachrichtenagenturen [Relevance of Messages. Measurement Methods for a Central Quality Criterion and its Application to News Agency Services]*. Rundfunk und Fernsehen, 43, 158-178. (https://goo.gl/SELHzD) (2016-01-12).

Halloran, J., Elliot, P., & Murdock, G. (1970). *Demonstrations and Communication: A Case of Study*. Hammondsworth: Penguin.

Iglesias-García, M., & González-Díaz, C. (2012). Análisis de la calidad de la web del ciberdiario VilaWeb. *Hipertext.net*. Anuario Académico sobre Documentación Digital y Comunicación Interactiva. (http://goo.gl/Li6QH3) (2016-02-13).

Jaime, J.H., Galán, Y.I., & Pacheco, J.D. (2016). *Diseño y validación de un cuestionario para explorar el perfil del nuevo estudiante del siglo XXI*. México: Congreso Virtual sobre Investigación Educativa, CIED. (http://goo.gl/gVuZnT) (2016-02-11).

Lang, K., & Lang, G. (1953). The Unique Perspective of Television and its Effect: A Pilot Study. *American Sociological Review*, 18, 2-12. (http://goo.gl/uyUAHi) (2016-01-16).

Leggatt, T. (1996). Identifying the Indefinable. An Essay on Approaches to Assesing Quality in the UK. In S. Ishikawa (Ed.), *Quality Assesment of Television*. Bedfordshire: John Libbey Media.

Madianou, M. (2010). Living with News: Ethnographies of News Consumption. In S. Allan (Ed.), *The Routledge Companion to News and Journalism* (pp. 428-438). London: Routledge. (https://goo.gl/eQfzeo) (2016-03-12).

Martin, V.B. (2008). Attending the News: A Grounded Theory about a Daily Regimen. *Journalism*, 9(1): 76-94. doi: http://dx.doi.org/10.1177/1464884907084341

McQuail, D. (1992). *Media Performance: Mass Communication and the Public Interest*. London: Sage.

Meyer, P. (1987). *Ethical Journalism*. New York: Longman.

Pellegrini, S. & Mujica, M.C. (2006). Valor agregado periodístico (VAP): La calidad periodística como un factor productivo en un entorno medial complejo. *Palabra Clave*, 01, 11-28. (http://goo.gl/jB24MR) (2015-01-11).

Picard, R.G. (2004). Commercialism and Newspaper Quality. *Newspaper Research Journal*, 25(1), 54-66. (https://goo.gl/niq2rQ) (2016-01-16).

Pottker, H. (2000). *Kompensation von Komplexitaet: Journalismustheorie als Begruendung journalistischer Qualitaetsmaßstaebe [Standards Journalism Theory as Justification on Journalistic Quality: Compensation of Complexity]*. In M. Loeffelholz (Ed.), Theorien des Journalismus. (pp. 375-390). doi: http://dx.doi.org/10.1007/978-3-322-97091-6_19

Ramírez-de-la-Piscina, T., Zabalondo, B., Agirre, A., & Aiestaran, A. (2015). La calidad de la prensa europea de referencia analizada por académicos, profesionales y usuarios. *Estudios sobre el Mensaje Periodístico*, 21, 31-46. doi: http://dx.doi.org/10.5209/rev_ESMP.2015.v21.50649

Robles, P., & Rojas, M. (2015). La validación por juicio de expertos: dos investigaciones cualitativas en Lingüística aplicada. *Revista Nebrija de Lingüística Aplicada*, 9(12). (http://goo.gl/Sn53qW) (2015-02-18).

Romero-Rodríguez, L.M., De-Casas-Moreno, P., & Torres-Toukoumidis, A. (2015). Estereotipos, tópicos y lenguaje de la programación sensancionalista en la televisión: Programa «Corazón» de TVE. *Alteridad*, 10(1), 31-43. doi: http://dx.doi.org/10.17163/alt.v10n1.2015.03

Rosengren, K.E. (1979). Bias in News: Methods and Concepts. *Studies of Broadcasting*, 15, 31-45.

Rosengren, K.E., Tagerud, Y., & Carlsson, M. (1996). Quality in Programing: Views from North. In Ishikawa, S. (Ed.), *Quality Assesment of Television*. Bedfordshire: John Libbey Media.

Salaverría, R. (2005). An Immature Medium: Strength and Weaknesses of Online Newspapers on September 11. *Gazette*, 67(1), 69-86. doi: http://dx.doi.org/10.1177/0016549205049179

Searle, J.R. (1997). *The Construction of Social Reality*. New York: The Free Press.

Schatz, H., & Schulz, W. (1992). Qualitaet von Fernsehprogrammen: Kriterien und Methoden zur Beurteilung von Programmqualitaet im dualen Fernsehsystem [Quality of Television Programs: Criteria and Methods for Assessing Program Quality in the Dual Broadcasting System]. *Media Perspektiven*, 11, 690-712.

Shoemaker, P.J. (2006). News and Newsworthiness: A Commentary. *Communications*, 31, 105-111. doi: http://dx.doi.org/10.1515/COMMUN.2006.007

Shoemaker, P.J., & Cohen, A.A. (2006). *News around the World: Practitioners, Content and the Public*. Oxford: Routledge.

Schultz, W. (2000). Preconditions of Journalistic Quality in an Open Society. *Proceedings of International Conference News Media and Politics: Independent Journalism*. Budapest. (http://goo.gl/5b33wM) (2015-01-11).

Singer, J.B. (2005). The Political J-Blogger: 'Normalizing' a New Media Form to fit old Norms and Practices. *Journalism*, 6(2), 173-198. doi: http://dx.doi.org/10.1177/1464884905051009

Urban, J., & Schweiger, W. (2014). News Quality from the Recipients' Perspective. *Journalism Studies*, 15(6), 821-840. doi: http://dx.doi.org/10.1080/1461670X.2013.856670

Van-der-Wurff, R. (2008). The Impact of Internet on Media Content. In Küng, L., & al. (Eds.), *The Internet and the Mass Media*. London: Sage Publications.

van-der-Wurff, R., & Schönbach, K. (2011). Between Profesionals and Audience. Codes of Conducts and Transparency as Quality Instruments for off - and Online Journalism. *Journalism Studies*, 12(4), 407-422. doi: http://dx.doi.org/10.1080/1461670X.2010.506055

Wallisch, G. (1995). *Journalistische Qualitaet: Definitionen (Mo-*

delle) Kritik [Journalistic Quality: Definitions (Models) Review]. Konstanz: UVK.

Watzlawick, P. (1976). *How Real is Real*. New York: Random House.

Welch, S., & Comer, J. (1988). *Quantitative Methods for Public Administration: Techniques and Applications*. California: Books/Cole Publishing.

Wyss, V. (2000). Online-Journalismus in Europa: das Beispiel Schweiz [Online Journalism in Europe: The Case of Switzerland]. In Klaus-Dieter & al. (Eds.), *Online-Journalismus: Perspektiven fu¨r Wissenschaft und Praxi* (pp. 335-346). Wiesbaden: Westdeutscher Verla.