Analysis of the Notoriety of General Press and Radio Media in Spain

Álvaro Serna-Ortega; Antonio Castillo-Esparcia; Andrea Moreno-Cabanillas

Álvaro Serna-Ortega
https://orcid.org/0000-0001-5374-4722
Universidad de Málaga, Facultad de Ciencias de la Comunicación, Departamento de Comunicación Audiovisual y Publicidad
León Tolstoi, s/n. 29010 Málaga, España
amso@uma.es

Antonio Castillo-Esparcia
https://orcid.org/0000-0002-9751-8628
Universidad de Málaga, Facultad de Ciencias de la Comunicación, Departamento de Comunicación Audiovisual y Publicidad
León Tolstoi, s/n. 29010 Málaga, España
acastilloe@uma.es

Andrea Moreno-Cabanillas ✉
https://orcid.org/0000-0002-1169-1607
Universidad de Málaga, Facultad de Ciencias de la Comunicación, Departamento de Comunicación Audiovisual y Publicidad
León Tolstoi, s/n. 29010 Málaga, España
amorenoc@uma.es

Abstract

Digitalisation has transformed the dynamics of interaction between the media and its audience, requiring rapid transmission of information and adaptation to the diversity of approaches in the current media space (**Casero-Ripollés**, 2010; **Peña Fernández et al.**, 2019). This research seeks to determine the notoriety of the main Spanish national generalist press and radio media. It also aims to evaluate the differences in recognition according to the socio-demographic characteristics of the subjects. The study is of an inferential-correlational type and employs a quantitative approach methodology, with a questionnaire as a data collection tool and a sample of 385 participants randomly distributed throughout Spain. Statistical procedures such as correlation matrices and analysis of variance (ANOVA) were applied to study the relationships between variables. The results reveal that *El País* leads in notoriety among newspapers, while *SER* stands out among general radio stations. The select groups are completed by *El Mundo* and *ABC*; and the *COPE*, respectively. Level of education, nationality, age and socio-economic status are the variables that show statistically significant inter-group differences in terms of cumulative recognition indexes. However, in the case of radio, relevant variations are also observed in terms of ideological issues, potentially marked by a circumstantial component. It is worth noting that in none of the scenarios measured does gender act as a differentiating variable. The conclusions reveal a notoriety of the media relatively in line with their audience ratings, although there are other conditioning elements, such as the trajectory of the medium.

Keywords

Radio, Press, General Media, Notoriety, Media, Digitalisation, Media Audience, Recognition, Media Space, Top of Mind, Select Group.

1. Introduction

The speed of information in the media has increased due to constant interconnection and social digitisation, enabling instant global news dissemination and democratising the dissemination of information. Digital platforms and social networks have diversified information agents, encouraging participation and multi-platform access to journalistic content. The current media landscape emphasises speed, diversity of voices and perspectives, challenging traditional

media to adapt and remain relevant.

Interpretation of context is crucial, and a purely economic approach can lead to the industrialisation of communication. In contrast, a deep and long-term analysis considers all dimensions for successful decision-making.

This section examines the context of the generalist press and radio in the Spanish landscape, introducing the concept of notoriety.

1.1. Context of the Generalist Press in Spain

The current media landscape is characterised by digitisation (**Peña Fernández et al.**, 2019; **Casero-Ripollés**, 2010). The increased use of the Internet and electronic devices has led to a gradual migration of the reading public towards digital media. Most Spanish newspapers have an online presence, offering content through their websites or mobile applications (**Salaverría**, 2008).

In addition, newspapers have gradually refined their online information practices, introducing innovative elements in the form of multimedia content (**Guallar et al.**, 2010; **Peña-Fernández et al.**, 2022) and implementing measures that allow readers to participate in the news production process through opinion sections, comments and other interaction-enhancing tools (**Pastor**, 2012).

Another consequence of the digital transformation of newspapers is the use of social networks as platforms for content distribution (**Herrero-Curiel**, 2011). The use of these social media has had positive effects, strengthening newspapers, expanding their reach and reaching new audiences through virality (**Peña-Fernández et al.**, 2022), and negative effects, posing challenges in terms of verifying information and controlling the spread of false or misleading news (**Bernal-Triviño; Clares-Gavilán**, 2019). In addition, social networks often serve as sources of information for journalists (**Benaissa Pedriza**, 2018).

The digital transformation of the press is clearly reflected in the evolution of the penetration of digital newspapers compared to print. In 2017, the value was already higher for online newspapers, and since then the gap has increased exponentially. It is important to highlight that the cumulative penetration (including print and digital newspapers) reflects relatively stable data throughout the 21st century; in fact, the 22 values obtained during this period can be grouped around 42%, with a variation of +-5% (**AIMC**, 2023).

The ease, accessibility and low cost of technology for content distribution has led to a huge growth in small online newspapers. This has required the spontaneous creation of an information ecosystem in which they can coexist with large newspapers (**Cabrera-González**, 2001). In addition, many of these media have a local or regional reach, leading to a much closer relationship between sender and receiver. This fragmentation of the media has had an obvious consequence: audiences have also fragmented (**Aguirre Romero**, 2007; **Jódar**, 2010). Consumers are increasingly looking for content with a higher degree of specialisation that is more specific to their interests.

One of the main challenges in the current media environment is fake news. The ethical factor in this environment and the need for transparency and quality of published content are important topics of debate. Media consumers want accurate and verified information to ensure that they are not victims of manipulation or deception (**Sádaba; Salaverría**, 2023; **Gutiérrez-Martín; Tyner**, 2012). This has led to a greater interest on the part of readers in knowing the sources of news.

It is clear that the impact of digitisation on press consumption in Spain has consequences at all levels. The media offer is much broader online and consumers, who are becoming more specialised, have dispersed accordingly. Misinformation also plays an important role, as the public is increasingly aware of the need for media literacy. In general, it can be said that newspapers are able to adapt more or less satisfactorily to changes in the environment.

1.2. Context of Generalist Radio in Spain

In the case of radio, penetration has remained relatively stable throughout the 21st century. The values have always fluctuated between 52.4% and 61.9% (**AIMC**, 2023). Despite this stability, it is true that from 2012 to 2022 there is a gradual decline (-0.75% per year).

Once again, digitisation is the main determinant of the evolution of the radio medium in recent years (**Fernández**, 2005; **Turner**, 2023; **Tretyakova et al.**, 2019). Innovations such as streaming technology through online platforms or the emergence of podcasts (**Gallardo-Camacho; Núñez**, 2022; **Balsebre-Torroja et al.**, 2023) have allowed the medium to open up to new audiences and adapt content to new forms of information consumption. However, the significant consolidation of this medium in the analogue format hinders its transition to the online sphere (**Bonet Bagant**, 2007), so the impact of the Internet on radio has not been as massive as in other media.

Generalist radio stations have recently maintained a very stable penetration. On the contrary, thematic stations have seen an increase in consumers, especially between 2007 and 2012. **Gutiérrez-García and Barrios-Rubio**

(2019) point out that consumers of generalist and thematic radio are not too similar, which is reflected in the small difference between the sum of generalist and thematic radio penetration compared to the total penetration of the medium.

In terms of listening time and location, a more or less constant trend can be observed over the last few years. Peak consumption hours are in the morning, with daily penetration levels remaining close to 15% between 08:00 and 11:00. The most frequent place of consumption is also the home, although very high indices are observed in the car and in the time slots that coincide with the start and end of work (**AIMC**, 2023). In terms of minutes listened to, from 2000 to the present day, the average has always been between 92 and 118 minutes per day, with the lowest value corresponding to the year 2021 (**AIMC**, 2023; **Statista**, 2023c).

In general, the development of the digital information context has not had the same impact on the radio medium as in other sectors of mass communication. It is true that there have been variations such as podcasts, which are quite successful in El País (**Blanco *et al.***, 2013; **Pérez-Alaejos *et al.***, 2018); but radio, in its conventional conception, continues to maintain a privileged position in the national media environment. If appropriate strategies and actions can be developed, trying to reach younger audiences, the medium will have a promising future.

1.3. Notoriety and Derived Elements

Notoriety is a concept of great relevance in media and advertising. The saturation of stimuli and information has made notoriety management essential for brands to achieve a strong market position and capture the attention of potential consumers. This section examines the concept of notoriety from a number of perspectives, exploring different names and conceptualisations, as well as the classification of brands within a sector based on reputation.

Fundamentally, brand awareness refers to the consumer's awareness of a brand, i.e. the ability to recognise it (**Del Moral**, 2006). **Hoyer and Brown** (1990) follow this perspective by associating the concept exclusively with consumer identification of a brand. **Aaker** (1996) and **Keller** (1993) go one step further and introduce the idea that brand awareness is the consumer's ability to associate a brand with a particular quality category. **Rossiter and Percy** (1987) express a similar view, adding that to be considered notorious, a brand must be sufficiently well known within its industry to influence purchase decisions or recommendations to third parties. In general terms, a consensus definition of fame can be "the ability of a brand to be recognised by consumers in the sector in which it operates".

Del Moral (2006), delving deeper into the concept, identifies a number of variables that can serve as explanatory and dependent factors of brand awareness. He therefore considers notoriety management as a process with causes and consequences. The author asserts that three influential variables determine the degree of brand awareness: commercial communication, market presence or share, and the penetration of products or services among users in the brand's sector. Among the variables that are modified as a result of brand awareness management strategies or actions, both **Del Moral** (2006) and **Nedungadi and Hutchinson** (1985) highlight product recall and recognition.
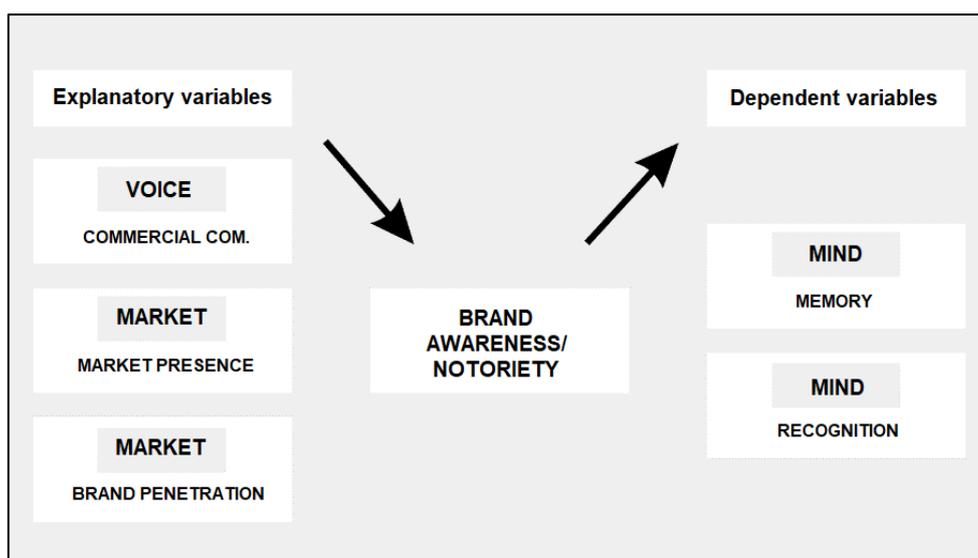
Figure 1: Explanatory and Dependent Variables of Brand Awareness/Notoriety.
Source: Del Moral (2006)

On the basis of the various definitions of the concept and the perspectives offered by different authors, it can be said that awareness has the capacity to be transformed into a quantitative value, which makes it possible to establish an order between companies in the same sector, determining which brand is more or less famous. **Bogart and Lehman** (1973) emphasise the importance of quantifying this concept and finding a standardised way of measuring it.

Capriotti (1999) defines four groups into which notorious companies in a market can be categorised: "top of mind", which refers to the best known company in the sector; "select group", which includes companies with a high degree of recognition; "recall group", composed of organisations whose brand and sector are identified by consumers; and "recognition group", which refers to companies that do not appear spontaneously in the consumer's mind, but are identified through assisted or suggested recall. In addition, the author identifies two groups of unrecognised organisations: the "confusion group", which refers to companies that evoke a slight recollection in the consumer's mind, and the "unknown group", which consists of organisations that are not recognised.

Therefore, as stated in the previous paragraph, there are two types of notoriety: spontaneous and suggested. Spontaneous notoriety refers to the ability of an organisation to be identified without prior mention to the consumer. Suggested notoriety, on the other hand, refers to the possibility of recognition of the brand (name, activity, sector, etc.) once it has been mentioned (**García Rodríguez**, 1999). **Kapferer** (1992) introduces a slight variation, considering that the top-of-mind brand in each sector requires a different type of notoriety, since it is not realistic to include them in the same group as the organisations spontaneously identified by the consumer (cited in **García Rodríguez** (1999)).

There is a consensus in the academic community that notoriety management is a fundamental aspect of building a brand and ensuring its success in the marketplace. The factors relevant to notoriety in a company's communication have been extensively analysed. One of the most emphasised elements is the definition and maintenance of brand attributes (**Rangaswamy** *et al.*, 1993; **Coupey** *et al.*, 1998). This involves defining specific characteristics that consumers may associate with the brand, such as quality, price, design, innovation or reliability. Once defined, the company must ensure that these attributes are communicated effectively, consistently, coherently and consistently over time.

Media companies are part of a business sector and compete with each other according to market norms. Digitalisation and globalisation have increased the competitiveness of these organisations and contributed to the industrialisation of the information production and distribution process. In this context, the need to manage notoriety is not foreign to media organisations, which have recognised the importance of their market positioning for their survival. As a result, this research is proposed and its methodological development, presentation of results and conclusions are elaborated below.

2. Objectives and Hypotheses

The main objective of the research is to determine the level of awareness (spontaneous and suggested) of the leading generalist media with national reach in the field of print, digital press and radio. In addition, as a secondary objective, the study aims to assess differences in awareness based on the socio-demographic characteristics of the subjects. Considering these objectives, and taking into account the media audience in the year 2022, two hypotheses are formulated:

H1: There is a correlation between the audience data of different media and their awareness indices.

H2: The most important media, in terms of awareness will be *El País* in the case of printed newspapers and *Cadena SER* in the case of radio. The select group in both categories is completed by the newspaper *El Mundo* and the radio station *COPE*.

3. Methodology

The proposed methodology adopts a quantitative approach with the aim of acquiring knowledge to explain and establish relationships in phenomena without a specific practical objective (**Bunge**, 2000). A rationalist method is used to structure the phenomenon and allow conclusions to be drawn for a wider population (**Ugalde Binda; Balbastre-Benavent**, 2013). In addition, quantitative methodology is ideal for subjecting the data obtained to statistical analysis (**Skinner** *et al.*, 2000).

In terms of the scope of the study, it is primarily descriptive-inferential, seeking to describe phenomena as they occur in reality (**Hernández-Sampieri** *et al.*, 2017). This scope combines description with correlation, establishing relationships between demographic characteristics and recognition indices, which serves as a first step in identifying causal relationships (**Tamayo**, 2003).

As data collection takes place at a single point in time, the design is non-experimental and transactional (**Agudelo** *et al.*, 2008). In order to minimise the bias of non-randomness, information is collected by telephone, which is considered the medium with the lowest possible sampling discrimination ratio.

The survey is used as the data collection technique, ánstrumentalised through a questionnaire. It proves to be a versatile and practical tool for collecting data from a large number of individuals (**Meneses**, 2016). Surveys bring order and are very useful in the systematisation of information (**García Muñoz**, 2003). In terms of data analysis, all the data collected are transformed into values with the potential for numerical study, since the technique used is statistical analysis.

The fame analysis values are subjected to a descriptive statistical analysis, distinguishing between spontaneous and suggested fame. A distinction is also made on the basis of criteria, using subject characteristics as contrasting variables.

Using the total notoriety analysis scores for each individual, a correlation matrix is created to identify significant relationships based on subject characteristics (**Elosua Oliden; Zumbo**, 2008). To complement the matrix, the data are also subjected to a comparison of means (**López-Roldán; Fachelli**, 2016; **Boqué; Maroto**, 2004). Since there is a numerical contrast variable and several grouping variables, an analysis of variance (ANOVA) is carried out to assess the differences between the subject groups. In this case, the aim is not to find a correlation between two variables, but to observe differences between the subject groups in the sample (each grouping element is assessed independently).

With regard to the sample, two must be defined. The first corresponds to the print newspapers and radio stations included in the awareness analysis. The universe or population includes all newspapers and radio stations in the country, but only the five national generalist media with the highest number of consumers in 2022 (**Kreab**, 2023; **AIMC**, 2023) are part of the sample. The type of sampling is therefore non-probabilistic or purposive, using audience as the distinguishing criterion. The number of media included in the study is justified on the basis of **Capriotti**'s (1999) recommendation for notoriety analyses. For print: *El País*, *El Mundo*, *La Vanguardia*, *ABC* and *El Correo*. For radio: *Cadena SER*, *COPE*, *Onda Cero*, *RNE* (*Radio Nacional Española*) and *EsRadio*.

The second sample corresponds to the individuals who will be subject to the questionnaire. The universe is made up of 40,911,420 individuals (**INE**, 2022), i.e. all people aged 14 and over who are resident in Spain (identical to the EGM). This approach is common in media research, as these are general consumption products. With a confidence level of 95% and a margin of error of 5%, the sample is made up of 385 people. The sampling method is stratified random by Autonomous Community to ensure maximum representativeness. In order to ensure the correct selection of the sample, a computer code is developed that takes into account the proportion of each Autonomous Community in the total population and randomly determines the number of sample subjects belonging to each Autonomous Community (see Annexes).

Before presenting the results, the final characteristics of the sample are described. In total, of the 385 respondents, 178 are male (46.23%) and 207 are female (53.77%). In terms of nationality, 331 are Spanish (85.97%) and 54 are foreign (14.03%). The age distribution of the subjects is in line with the general parameters of the country.

The socio-economic status is mainly middle class, with a clear bell-shaped distribution towards the lower and lower-middle classes. In this respect, it is important to consider the job stability of the respondents; the majority of subjects enjoy a high level of job stability, which is reflected in a consistent upward trend across the different levels.

In terms of educational level, 135 subjects have primary education (35.06%), 95 have secondary education (24.68%) and 155 have higher education (40.26%). The marital status is mainly married with 214 persons (55.58%). This is followed by single with 141 (36.62%) and widowed with 30 (7.80%).

Finally, the data on ideology are discussed. 142 respondents declared themselves to be right-wing (36.88%), 111 left-wing (28.83%), 99 centre-right (25.72%) and 33 preferred not to declare their ideology (8.57%).

4. Results

The results for press are presented first, followed by those for radio. Each section begins with a general statistical description, followed by a detailed examination of the data using multivariate analysis techniques.

### 4.1. Results Concerning the Press

The newspaper with the highest spontaneous recognition is *El País*, with 65.19% (n=251). It is followed by *ABC* with 56.36% (n=217) and *El Mundo* with 53.5% (n=206). *La Vanguardia* and *El Correo* show significantly lower values: 27.29% (n=105) and 13.76% (n=53) respectively. The data for suggested notoriety shows a very similar scenario. Again, *El País* is the leading newspaper with 92.2% (n=355), followed by *ABC* (89.35%; n=344), *El Mundo* (77.4%; n=298), *La Vanguardia* (59.22%; n=228) and *El Correo* (36.1%; n=139). Therefore, in both categories of awareness, the newspaper *ABC* breaks the correlation between the number of daily readers and awareness, being the second most recognised and the fourth most read.

When calculating the awareness indices (spontaneous and suggested) for each of the newspapers on the basis of the criteria defined in the characteristics of the sample, significant differences are observed in certain groups (see Table 1). For example, the lower and higher age groups have much lower relative awareness levels than the others (19.8% for young people and 26.1% for older people). In turn, the nationality of the respondents is also a key element in this awareness analysis, with foreigners showing 14.9 absolute percentage points (25.2 relative) less than those of Spanish nationality. With regard to socio-economic status, there is a slight positive variation with an upward trend. The trend is constant for the first four groups, but it is particularly pronounced at the level that separates the upper-middle and upper classes.

Table 1: Detailed Results of the Press Newspaper's Notoriety Analysis.

Newspaper	*País*	*Mundo*	*Vanguardia*	*ABC*	*Correo*	*País*	*Mundo*	*Vanguardia*	*ABC*	*Correo*
Notoriety			Spontaneous					Suggested		
Sex										
Male	64.6	59.5	25.8	60.1	12.9	93.2	79.2	58.9	87	38.7
Female	65.7	48.3	29.4	53.1	14.5	91.3	75.8	59.4	91.3	33.8
Age										
14-19	50	30	0	50	0	80	60	40	80	30
20-24	73.6	63.1	10.5	42.1	5.2	94.7	78.9	36.8	100	36.8
25-29	80.7	73	15.4	61.5	7.7	100	92.3	61.5	96.1	46.1
30-34	56	60	20	76	24	96	92	56	88	40
35-39	66.6	66.6	43.3	53.3	20	93.3	80	60	83.3	46.6
40-44	65.1	48.8	32.5	67.4	13.9	88.3	79	76.7	97.6	25.5
45-49	63.8	55.3	29.7	63.8	17	91.4	76.5	61.7	91.4	42.5
50-54	63.8	40.4	25.5	40.4	8.5	89.3	63.8	53.1	85.1	27.6
55-59	76.9	53.8	46.1	61.5	23	94.8	87.1	69.2	89.7	51.2
60-64	75.8	32	37.9	55.1	17.2	93.1	82.7	72.4	93.1	37.9
65-69	72	64	32	60	12	96	76	56	88	32
70-74	56.2	56.2	12.5	62.5	6.2	93.7	81.2	62.5	93.7	18.7
75-79	25	25	6.2	37.5	0	93.7	43.7	31.2	68.7	18.7
80+	46.1	23	23	30.7	15.3	76.9	69.2	38.4	76.9	30.7
Nationality										
Spanish	67.6	55.5	29.3	58	14.5	95.1	80.6	61	93	36.8
Other	50	40.7	18.5	46.2	9.2	74	57.4	48.1	66.6	31.4
Socioeconomic Status										
Low	67.3	50	30.4	50	6.5	89.1	67.3	54.3	89.1	39.1
Middle-Low	55.6	51.1	22.7	50	19.3	88.6	73.8	55.6	88.3	35.2
Middle	66.9	55.1	29.7	60.3	12.7	93.3	79.2	61.3	90.5	35.8
Middle-High	70.9	51.6	22.5	54.8	19.3	93.5	80.6	54.8	87	38.7
High	87.5	62.5	37.5	62.5	0	100	100	87.5	87.5	25
Studies										
Primary	46.6	33.3	13.3	36.2	5.1	87.4	62.2	37	81.4	18.5
Secondary	66.3	50.5	22.1	53.6	9.47	94.7	77.8	53.6	89.4	33.6
Higher	80.6	72.9	43.8	75.4	23.8	94.8	90.3	81.9	96.1	52.9
Employment Stability										
Low	61.1	42.5	12.9	50	5.5	87	68.5	48.1	88.8	27.7
Middle-Low	64.7	58.8	32.3	55.8	16.1	94.1	82.3	63.2	88.2	38.2
Middle	67.1	56.1	27.3	64.3	17.8	91.7	72.6	58.9	89	39.7
Middle-High	64.7	56.4	29.4	57.6	10.5	92.9	81.1	55.2	92.9	36.4
High	66.6	51.4	31.4	53.3	16.1	93.3	79	65.7	87.6	36.1
Civil Status										
Married	64.9	52.3	31.7	57.9	15.4	91.5	75.7	61.2	87.3	34.5
Single	65.9	56.7	23.4	56.7	11.3	91.4	79.4	57.4	90.7	38.2
Widower	63.3	46.6	20	43.3	13.3	100	80	53.3	96.6	36.6
Ideology										
Right	52.8	59.8	27.4	68.3	11.2	88.7	80.2	57.7	89.4	30.9
Left	80.1	47.7	27.9	45.9	11.8	94.5	71.1	54.9	84.6	37.8
Centre	70.7	51.5	28.2	54.5	12.1	95.9	81.8	68.6	93.9	42.2
NA	51.5	51.5	27.2	45.4	15.1	87.8	72.7	51.5	90.9	33.3

The variable that undoubtedly shows the greatest internal variation is the level of education. To a greater or lesser extent, in all ten cases studied (five for spontaneous awareness and five for suggested awareness), the order of recognition coincides with the level of education of the respondents (see Graph 1). The weighted mean of each of the three groups clearly reflects this assertion. The average is 42.1% for those with primary education, 55.1% for those with secondary education and 71.2% for those with tertiary education.
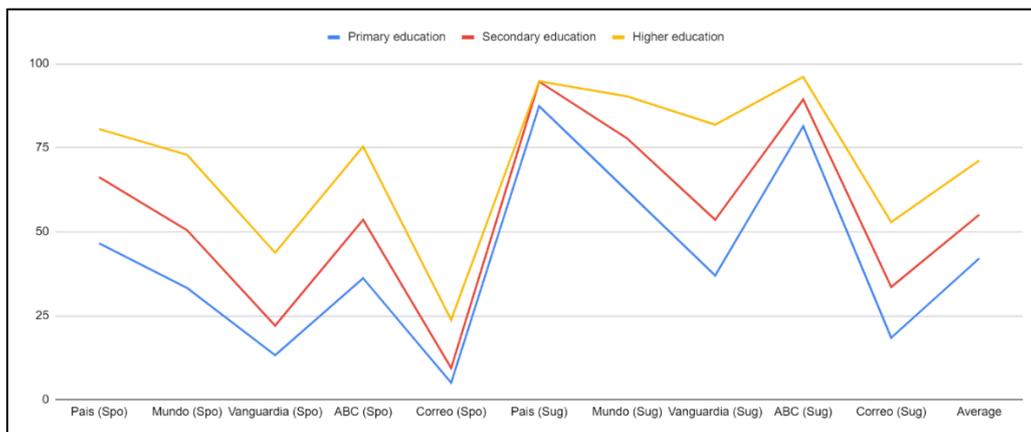

Graph 1: Notoriety based on Educational Level (Press).

In terms of ideology, a distinction has to be made between spontaneous and induced awareness. The data on autonomous recognition show a very clear trend: *ABC* and *El Mundo* are mentioned more often by right-wing subjects and *El País* by left-wing subjects. If we evaluate the results obtained in terms of oriented awareness, the order is more defined; the first place in different scenarios is closely contested between *El País* and *ABC* (*ABC* dominates among right-wing respondents, while *El País* leads among left-wing respondents). This is followed by *El Mundo*, *La Vanguardia* and *El Correo*, which do not show statistically significant changes in any of the four scenarios.

From these data, the total awareness is obtained by summing the positive identifications (spontaneous and suggested) for each person and storing this value in a numerical variable with indices ranging from zero to ten. When these values are compared with the characteristics of the sample, a series of statistically significant correlations are obtained.

As expected, there are obvious internal correlations between sample characteristics, such as between socio-economic status and job stability, or between age and marital status. However, only two variables show a significant correlation with the total number of newspapers identified: level of education and nationality. There is a positive and particularly strong correlation with the level of education of the respondents (see Graph 2).
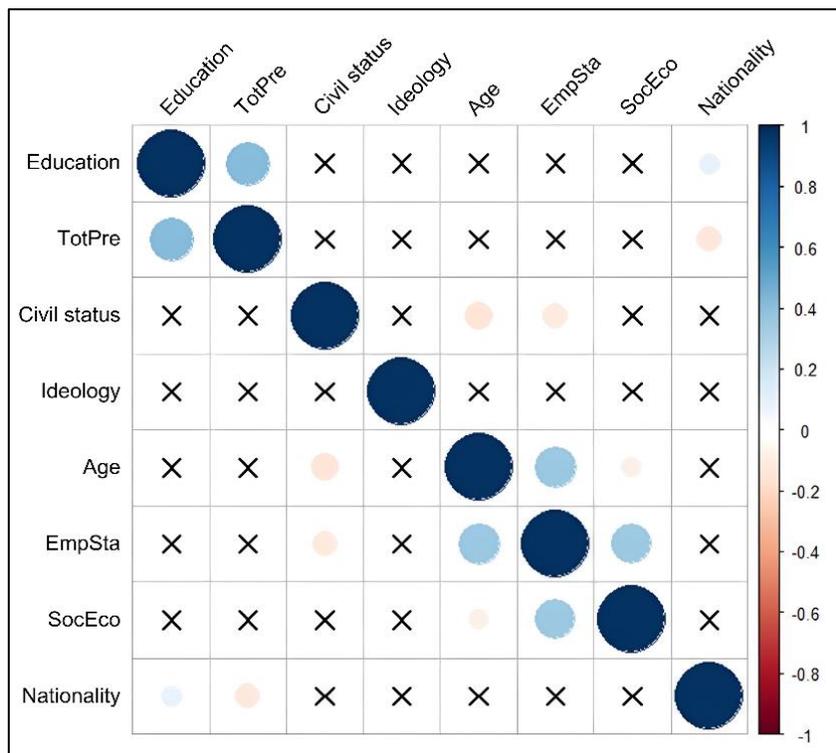

Graph 2: Correlation Matrix (Press).

Beyond the correlations, whose potential for depth is limited, it is interesting to assess the variance between the different groups, using the total amount of notoriety across newspapers as a contrasting variable. Due to the non-parametric nature of the data, a non-parametric ANOVA is carried out for this purpose (see Table II and Graph 3).

In addition to education level and nationality, there are two other p-values that allow the null hypothesis of equality of means to be rejected: age and socio-economic status. This means that, although the difference is not positive or negative proportionality, there are statistically significant representative differences between the groups on the basis of each of these criteria. In the case of age, the values reflect higher awareness indices among middle-aged groups (25 to 70 years old), and in the case of socio-economic status, a proportional increase is observed that is not large enough to claim a correlation.

Table 2: ANOVA Classification Table (Press).

Grouping variables	p_value	Significance
Studies	2,00E-16	***
Nationality	1,13E-07	***
Age	0,000102	***
Socioeconomic status	0,015871	*
Sex	0,089266	
Employment stability	0,411927	
Ideology	0,443954	
Civil status	0,989152	
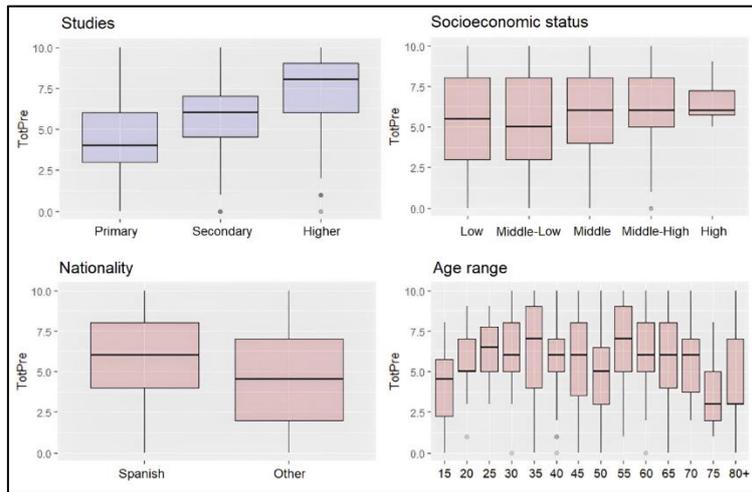
Graph 3: Grouping Variables with ANOVA Variations (Press).

4.2. Results Concerning the Radio

In the case of radio stations, the highest level of spontaneous awareness is recorded by the *Cadena SER*, with 65.71% (n=253). *COPE* shows a similar level of recognition with 63.11% (n=243). Meanwhile, *Onda Cero* also has an index above 50%, reaching 54.28% (n=209). *RNE* (17.4%; n=67) and *EsRadio* (22.07%; n=85) are mentioned much less frequently by the respondents. The order in which the five chains are ranked in terms of perceived awareness is the same as the order in which they are ranked in terms of daily listeners: *SER* (93.5%; n=360), *COPE* (88.31%; n=340), *Onda Cero* (83.63%; n=322), *RNE* (56.36%; n=217) and *EsRadio* (44.15%; n=170).

Apart from the fact that there are no differences based on gender or marital status, the same is true for age. Nationality remains an important differentiating factor, which is reflected in the radio stations with almost 20% less absolute awareness among people of foreign origin (see Table III).

Table 3: Detailed Results of the Radio Stations Notoriety Analysis.

Radio Station	SER	COPE	Onda Cero	RNE	EsRadio	SER	COPE	Onda Cero	RNE	EsRadio
Notoriety			Spontaneous					Suggested		
Sex										
Male	64.6	66.2	56.7	14	25.2	91.5	86.5	83.7	58.4	47.7
Female	66.6	60.3	52.1	20.2	19.3	95.1	89.8	83.5	54.5	41
Age										
14-19	50	40	20	0	10	80	70	70	30	40
20-24	73.6	63.1	36.8	5.2	26.3	100	94.7	73.6	63.1	42.1
25-29	73	84.6	88.4	30.7	38.4	100	100	100	65.3	61.5
30-34	64	68	52	28	20	100	92	84	60	28
35-39	60	66.6	50	16.6	26.6	90	86.6	86.6	56.6	46.6
40-44	62.7	65.1	53.4	9.3	18.6	93	90.7	81.4	58.1	48.3
45-49	59.5	63.8	59.5	17	23.4	89.3	93.6	85.1	48.9	46.8
50-54	63.8	40.4	51	14.8	14.8	93.6	74.4	82.9	51	36.1
55-59	82	74.3	71.8	17.9	25.6	97.4	94.8	89.7	71.8	51.2
60-64	79.3	68.9	68.9	27.5	20.6	96.5	96.5	93.1	72.4	51.7
65-69	80	76	52	24	28	92	80	84	56	52
70-74	50	56.2	18.7	18.7	25	93.7	87.5	62.5	50	37.5
75-79	37.5	43.7	25	6.2	6.2	93.7	75	68.7	18.7	18.7
80+	53.8	53.8	46.1	15.3	15.3	76.9	84.6	76.9	53.8	30.7
Nationality										
Spanish	69.1	65.8	56.7	18.4	22.9	96.6	91.8	88.2	59.5	46.5
Other	44.4	46.2	38.8	11.1	16.6	74	66.6	55.5	37	29.6
Socioeconomic Status										
Low	60.8	60.8	56.5	21.7	23.9	91.3	91.3	84.7	60.8	41.3
Middle-Low	67	59	48	12.5	23.8	92	88.6	78.4	50	37.5
Middle	66.5	66.5	57.5	19.8	22.6	93.8	86.3	84.9	58.4	50
Middle-High	58	51.6	51.6	12.9	16.1	93.5	90.3	83.8	58	32.2
High	75	75	25	0	0	100	100	87.5	37.5	25
Studies										
Primary	51.1	44.4	37.7	10.3	12.5	89.6	80	74	36.2	28.8
Secondary	66.3	61	50.5	12.6	16.8	93.6	89.4	83.1	49.4	30.5
Higher	78.8	80.6	70.9	26.4	33.5	96.7	94.8	92.2	78	65.8
Employment Stability										
Low	62.9	55.5	44.4	5.5	22.2	87	88.8	75.9	46.2	37
Middle-Low	63.2	61.7	60.2	23.5	25	94.1	91.1	86.7	64.7	44.1
Middle	63	63	60.2	16.4	20.5	98.6	87.6	89	57.5	45.2
Middle-High	69.4	70.5	49.4	25.8	24.7	92.9	89.4	83.5	60	47
High	67.6	61.9	55.2	13.3	19	93.3	85.7	81.9	52.3	44.7
Civil status										
Married	64	61.6	57	19.6	21	92.9	86.9	84.5	57	42.9
Single	68.7	65.2	51	14.1	23.4	95	89.3	81.5	56	43.9
Widower	63.3	63.3	50	16.6	23.3	90	93.3	86.6	53.3	53.3
Ideology										
Right	47.8	72.5	65.4	19.7	33.8	89.4	91.5	84.5	51.4	54.9
Left	81	41.4	41.4	15.3	7.2	95.4	80.1	74.7	58.5	27
Centre	76.8	73.7	57.5	18.1	22.2	95.9	95.9	93.9	62.6	49.4
NA	57.5	63.6	39.3	12.1	21.2	96.9	78.7	78.7	51.5	39.3

Educational level is the element that shows the greatest differences between the groups. The values are very similar to those obtained in the analysis of the press, with an average awareness of 45.4% for those with primary education, 55.3% for those with secondary education and 71.7% for those with higher education.

In terms of ideology, *COPE* and *Onda Cero* clearly dominate among right-wingers in terms of undirected awareness (*EsRadio* also presents a comparatively high index). Conversely, among left-leaning respondents, the *Cadena SER* has the highest value, and *COPE* and *Onda Cero* have exactly the same indicator, at 41.4% (see Graph 4).
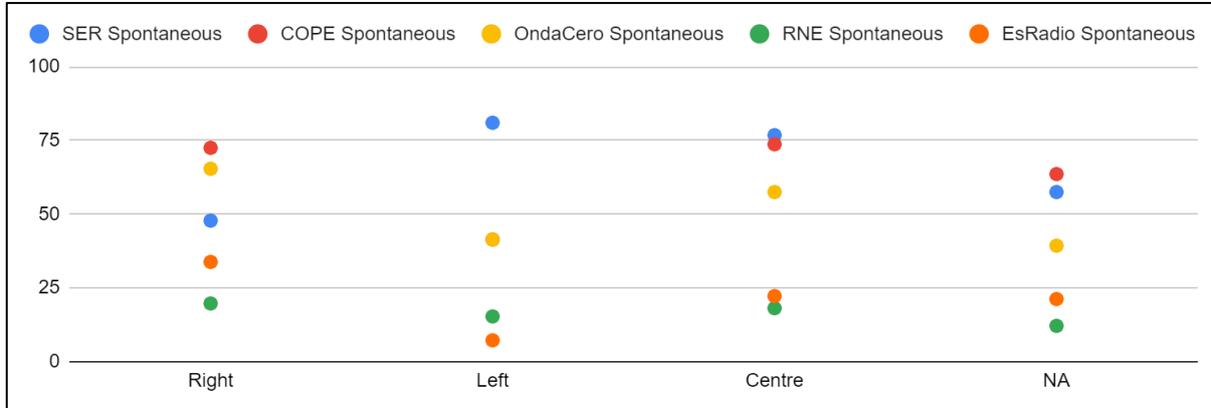

Graph 4: Spontaneous Notoriety based on Ideology (Radio).

The ANOVA to assess the variance between groups shows that education level and nationality again show relevant intergroup differences. As with newspapers, age again has a p-value below 0.05, but socio-economic status does not. On the contrary, ideology shows a much higher index among people from the centre and the right than among those from the left or those who do not declare their ideology (see Table IV and Graph 5).

Table 4: ANOVA Classification Table (Radio).

Grouping Variables	p_value	Significance
Studies	2,00E-16	***
Nationality	2,26E-11	***
Age	1,35E-06	***
Ideology	3,14E-05	***
Socioeconomic status	0,0674	
Sex	0,1534	
Employment stability	0,8058	
Civil status	0,9142	
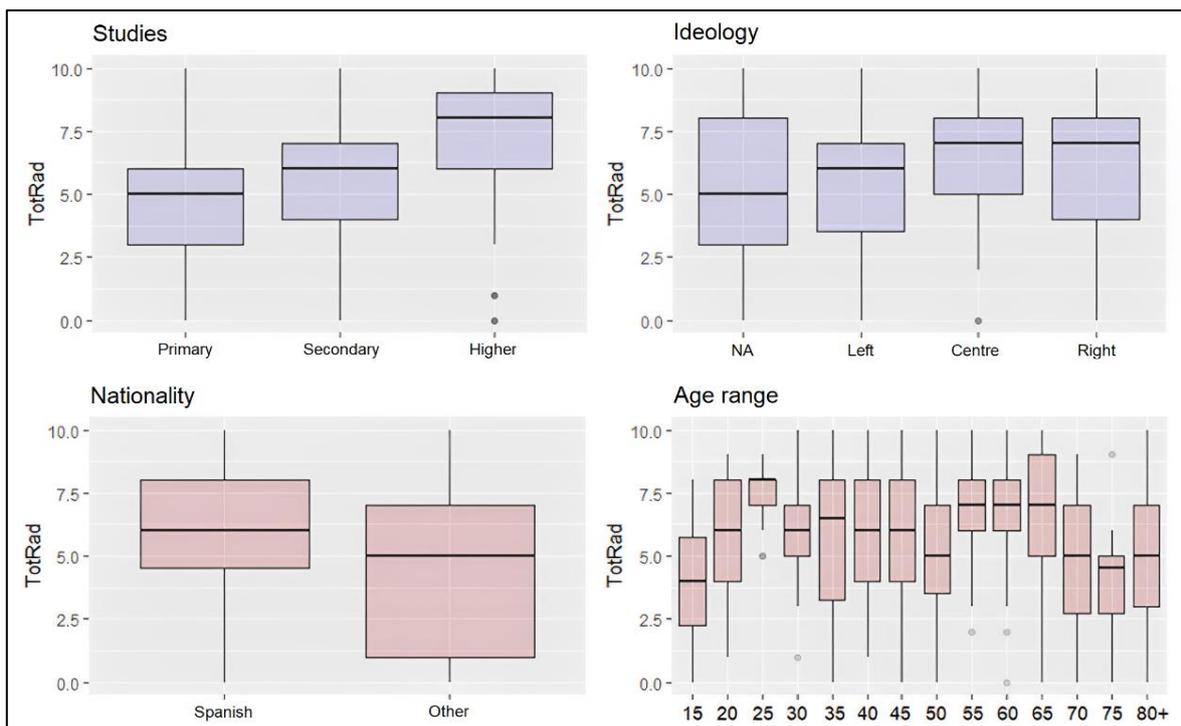
Graph 5: Grouping Variables with ANOVA Variations (Radio).

In the correlation matrix for radio, there are again two variables that show a statistically significant relationship with the total number of radio stations identified: the level of education and the nationality of the subjects. The correlation indices are similar and show the same tendency, favouring people with higher education and Spanish nationality.

4.3. Comparative Analysis between Press and Radio Results

As far as the overall awareness values are concerned, it can be seen that in both cases the order is similar to that based on their audience indices in 2022. In the case of newspapers, there is an exception to the trend represented by the *ABC* newspaper, which, despite a recent decline in readership, maintains a significant presence in the collective consciousness. In the case of radio stations, it should be noted that the ranking of suggested awareness follows the same order as the audience indices mentioned above.

With regard to the correlations identified from the grouping of the variables, it should be noted that in both cases a significant association is only observed in the context of education level and nationality (categorised as binary; therefore, with statistically significant variation between groups, there is a correlation).

Looking at the analyses of variance, it is noticeable that people on the right and in the centre identify more radio stations. This is a significant change compared to the values for the press, where no ideological differences in recognition are observed (see Graph 6).
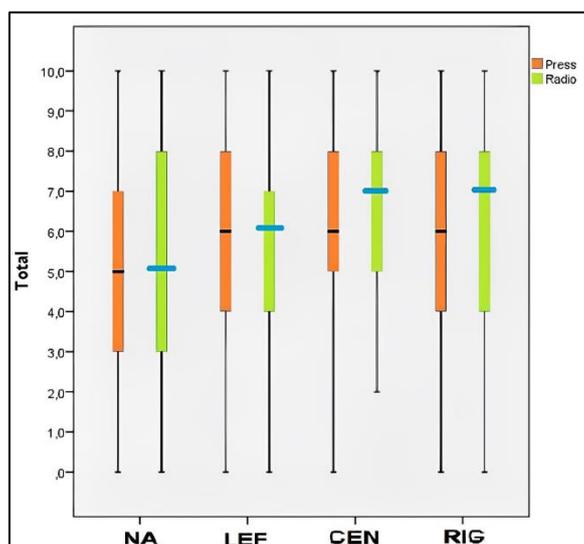
Graph 6: Variance between Groups Based on Ideology (Press and Radio).

5. Discussion and Conclusions

The analysis of awareness of general newspapers shows an identical order in both types of recognition (spontaneous and suggested). *El País* positions itself at the top of the list, with *ABC* and *El Mundo* completing the select group. The ranking based on the number of people identifying them corresponds to the average daily readership of each medium (**Kreab**, 2023; **Statista**, 2023a), with *ABC* and *El Mundo* exchanging positions.

Variables that show statistically significant correlation indices with the total positive identifications of newspapers are the level of education and the nationality of the subjects. This confirms **Larrañaga Rubio**'s (2009) claim that the average profile of newspaper readers is made up of people with a university education. In addition to the two grouping criteria mentioned, age and socio-economic status also show relevant differences in variance between the groups (although they do not follow a distribution that allows us to identify correlations). It is worth noting that the gender variable does not show any differences, even in terms of recognition, which contradicts the findings of **Statista** (2023b) and **AIMC** (2023).

With regard to radio, the evaluation of the awareness data, especially the proposed one, reflects a trend very similar to that observed in 2022 for the national consumption of this medium (**EGM**, 2022 cited in **Kreab** (2023)). *Cadena SER* is in first place, being the most popular general radio station in Spain, followed by *COPE*, which belongs to the select group, *Onda Cero*, *RNE* and *EsRadio* (although *EsRadio* has a higher index of spontaneous recognition than *RNE*). In terms of proportional identification values based on ideology, *SER* station is much more recognised by left-wingers, while *COPE*, *Onda Cero* and *EsRadio* are more recognised by right-wingers.

As with newspapers, p-values are observed for the level of education and the nationality of the respondents, indicating a correlation with the overall awareness index. However, in the analysis of variance of the means between groups, in addition to these two variables and age (which coincide with those identified in the newspapers), a statistically significant variation is observed on the basis of ideology. People in the centre and on the right identify a higher number

of channels than people on the left or those who do not declare their ideology. This could lead to the conclusion that conservative individuals consume more radio, but it is worth mentioning the possibility that the high overall awareness index of radio could be due to their selection, as three of the five most listened to radio stations in Spain have a conservative orientation. In the case of the press, the distribution of the five most consumed general media is more balanced across the ideological spectrum (**Guerrero-Solé**, 2022).

In conclusion, the study has successfully achieved its objectives by determining the spontaneous and suggested awareness of the main general media at national level, both in the press and radio categories. Disparities in awareness based on the socio-demographic variables of the subjects were also examined.

Both hypotheses were supported, as a relationship was found between awareness data and audience indices. However, it is important to note that in order to fully confirm the second hypothesis, it would be necessary to include the *ABC* newspaper in the set of general newspapers in Spain for a more comprehensive analysis.

The results of this research open up the possibility of future studies dealing with media notoriety and its possible causes. Reputation is closely related to brand awareness in the scientific literature; therefore, exploring the relationship between the notoriety of different media and their reputation is of great research interest. In addition, with the necessary resources, further research could be conducted on local or regional media to gain a fuller understanding of the subject of study.

6. Funding

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1. Annexes

```python
import random

poblacion = {
    'Andalucía': 8472407,
    'Aragón': 1326261,
    'Asturias': 1011792,
    'Baleares': 1173008,
    'Canarias': 2172944,
    'Cantabria': 584507,
    'Castilla y León': 2383139,
    'Castilla La Mancha': 2049562,
    'Catalunya': 7763362,
    'Com. Valenciana': 5058138,
    'Extremadura': 1059501,
    'Galicia': 2695645,
    'Com. Madrid': 6751215,
    'Murcia': 1518486,
    'Navarra': 661537,
    'País Vasco': 2213993,
    'La Rioja': 319796,
    'Ceuta': 83517,
    'Melilla': 86261
}

poblacion_lista = []
for comunidad, num_personas in poblacion.items():
    poblacion_lista += [comunidad] * num_personas

muestra = random.choices(poblacion_lista, k=385)

resultado = {}
for comunidad in poblacion.keys():
    resultado[comunidad] = muestra.count(comunidad)

print(resultado)
```

Figure 2: Computer Program to Establish the Distribution of the Sample by Regions.

1. Annexes