

ARTICLE

NEWS EXCHANGE BETWEEN BRAZIL AND PORTUGAL BASED ON A QUANTITATIVE ANALYSIS OF GOOGLE NEWS



DOUGLAS FARIAS CORDEIRO¹

Universidade Federal de Goiás, Goiânia – Goiás – Brazil
ORCID: 0000-0002-5187-0036

CARLOS LOPEZOSA²

Universitat de Barcelona, Barcelona – Catalunya – Spain
ORCID: 0000-0001-8619-2194

JAVIER GUALLAR³

Universitat de Barcelona, Barcelona – Catalunya – Spain
ORCID: 0000-0002-8601-3990

JORGE PEDRO SOUSA⁴

Universidade Fernando Pessoa, Porto – Portugal
ORCID: 0000-0003-0814-6779

DOI: 10.25200/BJR.v21n1.2025.1719

Received in: July 22nd, 2024

Desk Reviewed in: August 17th, 2024

Desk Review Editor: Fred Tavares

Revised on: October 11th, 2024

Approved on: October 29th, 2024

1 Universidade Federal de Goiás, Goiânia – Goiás – Brazil. E-mail: cordeiro@ufg.br

2 Universitat de Barcelona, Barcelona – Catalunya – Spain. E-mail: lopezosa@ub.edu

3 Universitat de Barcelona, Barcelona – Catalunya – Spain. E-mail: jguallar@ub.edu

4 Universidade Fernando Pessoa, Porto – Portugal. E-mail: jpsousa@ufp.edu.pt

ABSTRACT – This article investigates the exchange of news between Brazil and Portugal through a quantitative analysis of news aggregation in the Brazilian and Portuguese versions of Google News from February to April 2024. The data were extracted using scraping techniques and consolidated into a tabular structure, enriched with the use of artificial intelligence models for the categorization of the geographical origin of the news. A quantitative analysis was conducted using statistical methods to identify patterns of distribution and frequency of the news, especially from the perspective of news exchange between the two countries. A topic analysis model was applied to identify the main topics and highlight the dynamics of content and specific interests between the countries. The results reveal a greater presence of Brazilian sources and news about Brazil in the Portuguese version of Google News, mainly covering Brazilian politics, economy, and health. Comparatively, the Brazilian version of Google News shows a lower frequency of mentions of Portugal, both in terms of sources and content, with the identified topics mainly related to Portuguese political issues and their relations with Brazil.

Key words: Google News. News. Brazil. Portugal. News interaction.

INTERCÂMBIO NOTICIOSO ENTRE BRASIL E PORTUGAL A PARTIR DE UMA ANÁLISE QUANTITATIVA DO GOOGLE NEWS

RESUMO – Este artigo investiga a troca de notícias entre Brasil e Portugal por meio de uma análise quantitativa da agregação de notícias nas versões brasileira e portuguesa do Google News entre fevereiro e abril de 2024. Os dados foram extraídos por meio de técnicas de raspagem de dados e consolidados em uma estrutura tabular, enriquecidos com o uso de modelos de inteligência artificial para a categorização da procedência geográfica das notícias. Foi realizada uma análise quantitativa utilizando métodos estatísticos, com o objetivo de identificar padrões de distribuição e frequência das notícias, especialmente sob a perspectiva da troca de notícias entre os dois países. Aplicou-se um modelo de análise de temas para identificar os principais tópicos e apontar as dinâmicas de conteúdo e interesses específicos entre os países. Os resultados revelam uma maior presença de fontes brasileiras e notícias sobre o Brasil na versão portuguesa do Google News, abordando principalmente notícias sobre política brasileira, economia e saúde. Comparativamente, na versão brasileira do Google News há uma menor frequência de menções a Portugal, tanto em termos de fontes quanto de conteúdos, sendo os temas identificados relativos, principalmente, a questões políticas portuguesas e suas relações com o Brasil.

Palavras-chave: Google News. Notícias. Brasil. Portugal. Interação noticiosa.

INTERCAMBIO DE NOTICIAS ENTRE BRASIL Y PORTUGAL A PARTIR DE UN ANÁLISIS CUANTITATIVO DE GOOGLE NEWS

RESUMEN – Este artículo investiga el intercambio de noticias entre Brasil y Portugal a través de un análisis cuantitativo de la agregación de noticias en las versiones brasileña y portuguesa de Google News entre febrero y abril de 2024. Los datos se extrajeron mediante técnicas de raspado de datos y se consolidaron en una estructura tabular, enriquecidos mediante el uso de modelos de inteligencia artificial para la categorización de la procedencia geográfica de la noticia. Se realizó un análisis cuantitativo utilizando métodos estadísticos, con el objetivo de identificar patrones de distribución y frecuencia de las noticias, especialmente desde la perspectiva del intercambio de noticias entre los dos países. Se aplicó un modelo de análisis de temas para identificar los principales temas y señalar las dinámicas de contenido e intereses específicos entre países. Los resultados revelan una mayor presencia de fuentes brasileñas y noticias sobre Brasil en la versión portuguesa de Google News, abordando principalmente noticias sobre política brasileña, economía y salud. Comparativamente, en la versión brasileña de Google News hay una menor concurrencia de menciones a Portugal, tanto en términos de fuentes como de contenidos, siendo los identificados relativos, principalmente, a temas políticos portugueses y sus relaciones con Brasil.

Palabras clave: Google News. Noticias. Brasil. Portugal. Interacción noticiosa.

1 Introduction

The historical relations between Brazil and Portugal date back to the beginning of the colonial period in the 16th century, evolving in phases that culminated in a strengthening of cultural and economic ties. These relations were significantly marked by Brazil's independence in 1822 when both countries entered a context of cooperation and exchange. In the realm of the press, mutual historical influences have also played an important role, with the Portuguese press exerting notable influence on the formation of Brazil's first newspapers and publications, contributing to the spread of political and cultural perspectives. On the other hand, the Brazilian press also influenced Portuguese media, especially in more recent periods, such as during Portugal's transition to democracy in the 1970s (Lohn, 2023). These historical influences shaped how the press in both countries addresses related issues, creating a complex network of social, cultural, and informational interactions and exchanges that still resonate in contemporary journalistic coverage.

The amount of information about Brazil in the Portuguese press is considerable and reveals Portugal's interest in issues related to bilateral relations and events in Brazil (Sousa, 2002). Lopes and Sousa (2020), through a study on representations of Brazil between 1834 and 1922 in articles published in Portuguese illustrated magazines, identified a substantial frequency of content addressing Brazilian personalities, geography, and history. This scenario became particularly evident during Brazil's political transition in the 1970s, which became a topic of great repercussion in the Portuguese media (Lohn, 2023). In this context, the Portuguese press emerged as an international forum for discussions on Brazilian politics, covering a variety of topics, including international connections of Brazilian opposition groups, criticism of the existing dictatorial regime, the human rights situation in the country, and denunciations by organizations regarding repression in Brazil. Furthermore, Brazil's social, political, and economic advancements over time, as well as its intrinsic relations with Portugal, increased the interest of Portuguese journalism in covering issues related to Brazil (Viana et al., 2017).

Sousa (2002), in a study on a set of news published in 1999, observes that, while the absolute number of news pieces about Brazil is relatively low compared to the volume of news in Portuguese

newspapers, there is a genuine interest in following events in Brazil. Although Sousa's (2002) analyses refer to observations from 1999, when technological news aggregation platforms like Google News did not yet exist, they are relevant as they signal the informational landscape between Brazil and Portugal during a period when journalism began to embrace opportunities derived from advances in information and communication technologies, offering a valuable comparative view. Sousa (2002) points out that prominent Portuguese press portrayed Brazil predominantly as a country of music, television, and soccer, thus emphasizing its ability to produce and export cultural content and sports talent. Moreover, Brazil was represented as a nation with significant economic opportunities, both globally and for Portuguese companies interested in international expansion. The study also indicated a lesser focus on Brazilian political issues and bilateral relations between Brazil and Portugal.

Sousa's (2002) research reveals a Lusocentric bias in some journalism about Brazil, prioritizing Portuguese audience preferences and relying on stereotypes of Brazil as a country focused on soccer and entertainment. In this regard, Viana (2014) observes a tendency to represent Brazil through a cultural image, emphasized by artistic productions and attractions that converge in an exotic, paradisiacal setting. Similar aspects are pointed out by Azevedo and Sousa (2022), specifically regarding the coverage of Brazil's independence centenary in the Portuguese press, where the magazines *Ilustração Portuguesa* and *ABC* were analyzed, noting that Brazil was represented in a simplified and stereotyped manner.

Pim and Kristensen (2007) describe the Portuguese journalistic discourse as presenting Brazil ambiguously, with contrasting views ranging between admiration and deconstruction, reflecting a complex and historical relationship between the two countries. Additionally, the authors suggest that, although there is an academic interest within the communication communities of Portugal and Brazil, there is a lack of studies that delve into these reciprocal images in the media. At this point, a gap is particularly noticeable in studies about the presence of news depicting events related to Portugal in the Brazilian press or regarding Brazil's influence on the Portuguese press. Notably, some studies explore the growth of the Brazilian press and its relations with Portugal, both during a period when Brazil was part of a united kingdom with Portugal and after Brazilian independence, including the creation of Luso-Brazilian

media outlets (Sousa, 2021). Furthermore, some essays enumerate the presence of Brazilian literature in the Portuguese press, such as Santos (2020), which addresses the presence of Brazilian writer Álvares de Azevedo in Coimbra's academic press, and Silveira (2019), who discusses the trajectory of Gaspar da Silva as a cultural mediator, promoting Brazilian literature in Portugal and Portuguese literature in Brazil through the press.

Immersed in this complex scenario of journalistic interconnections and exchanges between Brazil and Portugal, the present study aims to understand, from a quantitative approach, the presence of news related to Brazil on the Portuguese version of the Google News platform and news related to Portugal on the Brazilian version. For this purpose, we analyze a dataset composed of daily aggregated news records from both versions of Google News, collected over three months, from February to April 2024. The methodology employed is based on the use of data scraping techniques, descriptive statistics, data visualization, and artificial intelligence.

The following research questions are considered:

RQ1. What is the frequency and distribution of news related to Brazil on the Portuguese version of Google News and news related to Portugal on the Brazilian version of Google News during the study period?

RQ2. What are the observed differences and similarities in the primary sources of news about Brazil on the Portuguese version of Google News and about Portugal on the Brazilian version of Google News?

RQ3. How does the recurrence of news related to Brazil on the Portuguese version and to Portugal on the Brazilian version of Google News vary in terms of the number of aggregated news pieces per tab and terms of central themes addressed?

2 Theoretical framework

There is a vast body of academic research examining the Google News platform from various perspectives. These studies address topics such as news dissemination and consumption, impact on public opinion, content personalization, health news coverage, information retrieval, natural language processing, and its relationship with the media (Lopezosa et al., 2024).

In studies on news dissemination via Google News, consumption patterns, and impact on readers' decisions, analyses have focused on its geographic coverage, identifying affiliated media outlets, and the types of news featured on the homepage. These studies include specific cases in countries such as the United States and India (Watanabe, 2013), Germany (Schroeder & Kralemann, 2005), Brazil, Colombia, and Mexico (Cobos, 2018, 2021), Spain and Brazil (Cordeiro, 2024), as well as Brazil, Colombia, Mexico, Portugal and Spain (Cordeiro et al., 2024), among others. Moreover, these works explored the reception of news through specific Google News search responses, including queries about local news (Fischer et al., 2020) or specific terms used by readers (Wilson & Maceviciute, 2013).

In this context, studies have been conducted on the impact of Google News on public opinion and, ultimately, on readers' decisions. Noteworthy are studies that examined how information obtained through Google News influences financial decisions (Du & Song, 2022), as well as analyses of the international news section to assess the agenda set by this aggregator and its effect on readers (Young & Atkin, 2022).

Regarding research on Google News and its personalization, studies cover various aspects, such as evaluation of the degree of news personalization generated by search algorithms (Evans et al., 2022), exploration of the effects of implicit and explicit personalization on content and source diversity (Haim et al., 2018), analysis of the level of personalization in web searches to assess the risk of "filter bubbles" (Cozza et al., 2016), and investigations on how Google News search results adapt to each user's browsing history (Le et al., 2019).

Another predominant theme in studies on Google News is health news coverage and its aggregation within this news service. Some of the most relevant research focuses on specific medical topics, such as colorectal cancer (Basch et al., 2022), mammography (Young-Lin & Rosenkrantz, 2017), and breastfeeding (Seror et al., 2010). While each mentioned study has its methodological focus, all share the goal of analyzing Google News and the news it presents in relation to the respective topics investigated.

Furthermore, in terms of the relationship between Google News and the media, research lines have addressed different aspects. On one hand, they sought to understand the experiences and perceptions of editors-in-chief, directors, and owners of media outlets

indexed on Google News, exploring their views and experiences with the aggregator (Cobos, 2018). On the other hand, they analyzed the application of regulations, such as Intellectual Property Laws in Spain (Guallar, 2015). This latter case includes the suspension of Google News in Spain and its impact on online media outlets following its shutdown in 2014 (Calzada & Gil, 2020).

Finally, a significant group of prominent studies on Google News focuses on information retrieval, addressing aspects such as controlled vocabularies, algorithms, and technical factors related to product development and search and aggregation protocols on Google News.

These studies cover various research areas on Google News. For example, they explored learning for information filtering and data mining (Montejo-Ráez et al., 2009, 2010), algorithms and natural language processing used by Google News (Wubben et al., 2010), with specific focuses on languages like Chinese (Hong et al., 2006, 2009) and Arabic (Alzahrani, 2013). They also examined news flow on Google News (Das et al., 2007), as well as text and social network mining within this platform (Joshi & Gatica-Perez, 2006).

By summarizing the main research themes on Google News since 2005, this work seeks to complement and expand upon some of the previously described research lines. Therefore, it proposes a comparative analysis of news coverage provided by Google News in Brazil and Portugal. For this purpose, several variables were examined, such as news updates, sources used, and topics covered.

3 Materials and methods

This study adopted a descriptive and quantitative approach to analyze the news exchange in the news aggregation of the Google News platform. Data were collected daily from the set of news aggregated by the Brazilian and Portuguese versions of Google News, between February 1, 2024, and April 30, 2024. The following pages (sections) of each version of Google News were considered: Homepage, Top Stories, World, Business, Science & Technology, Entertainment, Sports, and Health. The data extraction was conducted through a script written in Python, employing web scraping strategies (Mitchell, 2024) for the identification and collection of the data of interest.

For each published news article, the following attributes were

considered at the time of data extraction: headline (title), source, publication date, aggregation date, and the section of Google News in which the extracted news was present. The obtained data were consolidated into a semi-structured file in CSV format, suitable for the automated execution of analytical procedures (Fernandes & Cordeiro, 2016). This format simplifies data analysis and enrichment using AI.

In the data enrichment phase, artificial intelligence models were employed to identify the geographical origins of the news articles. A co-learning strategy was utilized, based on a pre-trained multilingual BERT (Bidirectional Encoder Representations from Transformers) model (Devlin et al., 2019) and Named Entity Recognition (NER) technique (Li et al., 2022). In the first step, the BERT-based model predicts the geographical origin based on the textual content of the news article's title. In the second step, NER-based routines seek to identify names of cities or countries, cross-referencing potential results with an official database containing global geographical records. Finally, the results are compared to verify their agreement; if confirmed, the predicted country is assigned to the news article. If the country of origin cannot be identified, the country corresponding to the analyzed version of Google News is attributed to the news article.

The quantitative analysis process applied in this study, considering the context of the dataset of news indexed in Google News, aimed to extract indicators through a tabular approach. The tables provided a summary of the news aggregation landscape for each version, through metrics that highlight numerical characteristics of the aggregation and news exchange between countries, focusing on two main dimensions: the presence of foreign sources and the identification of news related to other countries. Although the analyses indicated the presence of a variety of countries, it is important to emphasize that the primary focus was on the two countries analyzed, namely Brazil and Portugal.

Measures of central tendency were employed, such as the accumulated total, mean, and coefficient of variation, analyzed concerning different dimensions of interest. By exploring these indicators, a more detailed understanding of the distribution and variability of news exchange can be obtained from a perspective based on news aggregation in Google News. This allowed for capturing nuances and particularities related to the dynamics present in the two countries. Furthermore, in the context of the news identified

between countries, visualizations were created through word clouds, which highlight terms that contribute to a better understanding of the themes present in the sample.

4 Results and discussions

Based on the data extraction procedures applied, a total of 138.998 news headlines were retrieved for Brazil and 120.444 news headlines for Portugal. Table 1 presents the general statistical indicators related to the data from the Homepage and Top Stories sections. These indicators allow for the observation of quantitative fluctuations present in the news aggregation by Google News in its respective versions. In terms of volume, the Brazilian version exhibits a slightly higher news aggregation than the Portuguese version, with a difference of 2.58% for the records from the Homepage and 17.79% for the Top Stories section. Consequently, the average daily volume of news also shows a difference between the two countries, with a higher value for Brazil, as well as a lower coefficient of variation, indicating greater consistency in the average volume of news delivery by the Brazilian version. The update rates observed between the two versions are close, with a higher percentage for Google News Brazil.

Table 1
Descriptive indicators for Homepage and Top Stories

	Homepage		Top Stories	
	BR	PT	BR	PT
Total volume	3252	3170	23048	19566
Average daily volume	36.13	35.22	256.08	217.40
Coeff. of variation	3.5%	6.0%	10.8%	11.0%
Update index	96.1%	95.1%	95.3%	90.4%

Similarly to what is observed in the data from the Homepage and Headlines, the secondary pages showed a significant increase in quantity for Google News Brazil, except for the Entertainment section, which exhibited notably similar values for both versions and the Health section, where the Portuguese version had the highest quantity, with a percentage 169.54% higher than the volume of records from Google News Brazil (table 2). It is also noteworthy that the Health section of Google News Portugal displayed one of the highest coefficients of variation, at 43.14%, second only to the Science & Technology section,

also from the Portuguese version, which presented a coefficient of variation of 59.60%, indicating substantial fluctuation in news aggregation for these sections throughout the analyzed period. As for the update rates, a similar percentage proximity was observed between the two versions of Google News.

Table 2
Descriptive indicators for secondary pages

	World		Business		Science & Technology		Entertainment		Sports		Health	
	BR	PT	BR	PT	BR	PT	BR	PT	BR	PT	BR	PT
Total Vol.	17293	16079	21259	12071	17581	10105	15476	15190	18716	12071	4717	12714
Avar. Vol.	192.14	178.65	236.21	135.62	195.34	112.27	171.95	168.77	207.95	187.47	52.41	141.26
Coeff. Var.	21.77%	14.41%	5.84%	15.10%	12.13%	59.60%	31.31%	7.99%	24.01%	21.85%	15.04%	43.14%
Upd. Index	88.3%	89.2%	88.4%	88.5%	84.8%	84.6%	92.7%	88.0%	94.1%	89.8%	89.2%	82.0%

Continuing with a focus on the main sources aggregated by the two versions of Google News, table 3 presents a comparison of the records from the Homepage and Top Stories. In the context of Google News Brazil, particularly for the Homepage, a higher percentage is noted for the news portal g1, which belongs to one of the leading journalistic groups in the country. From this, other outlets are identified, which include, in addition to general media, news portals from verification agencies, the financial news portal InfoMoney, and, from the Headlines section, the sports news site UOL Esporte. Digital native outlets are present among the Brazilian top ten. In the Portuguese version of Google News, traditional media outlets are prominent, including those originally created in print format, such as the newspapers Expresso and Jornal de Notícias. As in the Brazilian version, in addition to general news portals, specific content sites were identified, such as the site Dioguinho on the Homepage, and the sports news sites A Bola and O Jogo, which appeared in the Top Stories pages. No sources originating from a country other than those of the mentioned versions of Google News in table 3 were identified.

Table 3

Percentage of presence of top ten news sources for Homepage and Top Stories

Homepage				Top Stories			
BR (252)		PT (187)		BR (773)		PT (598)	
g1	13.6	Público	9.0	g1	9.5	RTP Notícias	7.0
UOL Confere	7.3	RTP Notícias	7.7	Terra	6.5	Público	6.5
Terra	4.7	Observador	5.2	UOL Confere	5.3	A Bola	5.4
UOL	3.4	Expresso	5.0	Metrópoles	4.8	Expresso	4.5
Poder360	3.2	Diário de Notícias	4.8	UOL	4.3	O Jogo	3.8
Globo.com	2.8	Dioguinho	4.7	Globo.com	3.6	Observador	3.6
Aos Fatos	2.7	Notícias ao Minuto	3.5	Poder360	3.4	Diário de Notícias	3.5
Metrópoles	2.5	Polígrafo	3.3	UOL Esporte	2.6	Jornal de Notícias	3.3
Lupa	2.3	O Minho	3.2	R7	2.5	SIC Notícias	3.0
InfoMoney	2.0	SIC Notícia	3.1	O Antagonista	2.3	SAPO	2.5

Note: the values in parentheses in the header refer to the number of unique sources identified.

The main sources from the secondary pages of the records of Google News Brazil are listed in table 4, signaling the presence of exclusively Brazilian media across all analyzed tabs. While Business, Science & Technology, and Sports show a notable presence of specialized media, the significant presence of general media in Entertainment and Health is striking. The predominance of specialized outlets in certain categories may indicate a demand for more detailed and technical information in these areas, while the presence of general media in others suggests a trend toward more superficial or varied consumption, or it may be related to the fact that general media are more accessible to the public.

Table 4

Percentage of participation of the top ten news sources of secondary pages of Google News Brazil

	World (731)	Business (976)	Science & Technology (617)	Entertainment (429)	Sports (470)	Health (615)					
Terra	7.5	InfoMoney	8.6	TudoCelular	8.3	Terra	12.4	Globo Esporte	20.9	g1	8.8
UOL Confere	7.2	E-investidor	4.5	TechTudo	6.1	Splash	10.1	UOL Esporte	9.6	VivaBem	7.1
UOL	6.5	UOL	4.0	Olhar Digital	5.6	Globo	8.2	Terra	6.8	Metrópolis	6.1
g1	6.3	UOL Economia	3.4	MeuPlayStation	5.5	Metrópolis	4.8	ESPN Brasil	5.8	UOL	4.4
O Antagonista	4.4	g1	3.0	Terra	4.9	O Dia	4.6	LANCE!	5.0	Terra	3.9
R7	3.4	Money Times	2.9	Canaltech	4.2	Notícias da TV	3.1	O Dia	3.7	Catraca Livre	3.8
Poder360	3.3	Terra	2.6	TecMundo	3.7	Correio Braziliense	2.8	Meu Timão	3.0	R7	2.6
Gazeta do Povo	3.2	Investing Brasil	2.5	Adrenaline	3.0	g1	2.8	No Ataque	2.9	UOL Confere	2.0
Metrópolis	2.0	R7	2.1	R7	2.5	Extra	2.8	Gazeta Esportiva	2.6	Correio Braziliense	1.7
Correio Braziliense	1.9	Poder360	2.1	UOL	2.4	O Tempo	2.2	O Tempo	2.0	O Tempo	1.6

Note: the values in parentheses in the header refer to the number of unique sources identified.

For the records of secondary pages from Google News Portugal, table 5 lists the ten main sources identified. Unlike what is observed in Google News Brazil, the main sources include a considerable number of Brazilian media outlets, except for Entertainment. Highlights primarily emerge in Science & Technology, where eight of the ten main identified sources are Brazilian, and in Health, where nine identified sources are Brazilian. This predominance of Brazilian media in specific categories of Google News Portugal suggests an interconnectivity between the news ecosystems of the two countries, especially from Brazil to Portugal, reflecting historical, cultural, and linguistic ties. Additionally, the strong presence of Brazilian sources in Science & Technology, as well as in Health, may indicate a perception of quality and relevance attributed to the content produced by these sources. Conversely, the relative absence of Brazilian sources in Entertainment could reveal differences in media consumption and production patterns related to specific themes, associated with a trend of regionalization in consumption.

Table 5
Percentage of participation of the top ten news sources of secondary pages of Google News Portugal

World (574)		Business (559)		Science & Technology (548)		Entertainment (477)		Sports (394)		Health (1474)	
Público	6.1	Jornal de Negócios	9.5	TudoCelular.com	9.5	Dioguinho	9.9	A Bola	12.1	Metrópoles	4.2
Terra	5.6	Notícias ao Minuto	7.1	Terra	6.5	Flash	8.1	O Jogo	7.8	g1	3.7
UOL Notícias	5.5	ECO	6.9	Olhar Digital	5.5	Notícias ao Minuto	6.2	Record	7.4	Notícias ao Minuto	3.6
Notícias ao Minuto	4.5	Executive Digest	6.2	Canaltech	3.8	TVI	5.4	Globo Esporte	5.4	Terra	3.4
Executive Digest	4.5	O Jornal Económico	6.1	TechTudo	3.4	Selfie	3.7	MaisFutebol	4.9	Catraca Livre	3.3
g1	3.7	SAPO	5.3	MeuPlayStation	2.8	Público	3.5	Notícias ao Minuto	4.3	R7	2.7
Folha de S.Paulo	3.4	Expresso	2.9	TecMundo	2.6	Expresso	3.2	zerozero.pt	3.2	Folha de S.Paulo	1.7
Diário de Notícias	3.3	Público	2.8	Giz Brasil	2.6	A Televisão	2.7	RTP Notícias	3.1	VivaBem	1.6
RTP Notícias	2.9	InfoMoney	2.2	4gnews	2.5	SAPO Lifestyle	2.6	SAPO Desporto	2.7	Estado de Minas	1.5
SAPO 24	2.8	Razão Automóvel	1.7	Notícias ao Minuto	2.2	Fama Show	2.5	UOL Esporte	2.5	Correio Braziliense	1.4

Note: the values in parentheses in the header refer to the number of unique sources identified.

Table 6 presents the percentage distribution of news mentions between Brazil and Portugal, considering the application of the artificial intelligence model used for geographical identification, where the notation “BR → PT” indicates news from Portugal identified in the Brazilian version of Google News, and “PT → BR” indicates news from Brazil in the Portuguese version. For the records from the Homepage, only 0.4% of the news in Google News Brazil was identified as from Portugal, while 14.2% of the news in the same section of Google News Portugal was identified as from Brazil. In the records of Top Stories, the distribution is similar, with 0.3% of Portuguese news in the Brazilian version and 15.5% of Brazilian news in the Portuguese version. Similarly, in the secondary pages, the proportion remains at 0.4% of Portuguese news in Google News Brazil and 17.5% of Brazilian news in Google News Portugal. This distribution reveals a notable asymmetry in news coverage between the two countries, with a significantly greater presence of Brazilian news in the Portuguese version of Google News compared to the presence of Portuguese news in the Brazilian version. Considering the algorithmic characteristics of indexing and aggregation of

Google News, such asymmetry may reflect a greater interest among Portuguese readers in events in Brazil, possibly reflecting historical, and cultural ties, and the significant presence of Brazilian citizens in Portuguese territory. Conversely, the low percentage of news about Portugal in the Brazilian version of Google News suggests a lesser interest among Brazilian readers in news from Portugal.

Table 6

Percentage distribution of mentions Brazil↔Portugal (total records)

Homepage		Top Stories		Secondary pages	
BR→PT	PT→BR	BR→PT	PT→BR	BR→PT	PT→BR
0.4	14.2	0.3	15.5	0.4	17.5

Table 7 presents the percentage distribution of international mentions. For the Homepage, Israel is the primary source of international news in Google News Brazil (20.2%), followed by the United States (16.7%) and Ukraine (7.0%). In contrast, in Google News Portugal, Brazil dominates with 48.5% of mentions, followed by Ukraine (7.6%) and Israel (5.8%). In the records of Top Stories, the United States predominates in Google News Brazil (13.4%), followed by Israel (12.4%) and Spain (6.7%), while in Google News Portugal, Brazil continues to be the primary source (51.6%), followed by Israel (9.3%) and Ukraine (8.5%).

Finally, in the dataset of the secondary pages, the United States leads in the Brazilian version (16.4%), followed by Ukraine (8.1%) and Israel (6.7%). In Google News Portugal, Brazil again dominates (55.8%), followed by Ukraine (5.9%) and the United States (5.8%). Regarding the presence of news identified as from Portugal in the Brazilian version of Google News, although it ranked among the ten most referenced countries, it presented a relatively low percentage compared to the most cited countries and, particularly, when analyzing the opposite situation, namely, the presence of news about Brazil in the Portuguese version of Google News.

Table 7
Percentage distribution of international mentions

Homepage				Top Stories				Secondary pages			
BR		PT		BR		PT		BR		PT	
Israel	20.2	Brazil	48.5	USA	13.4	Brazil	51.6	USA	16.4	Brazil	55.8
USA	16.7	Ukraine	7.0	Israel	12.4	Ukraine	7.7	Israel	9.3	Ukraine	5.9
Ukraine	8.1	Russia	6.7	Ukraine	7.6	Spain	5.2	Ukraine	8.5	USA	5.8
Russia	6.7	Israel	5.8	Spain	6.7	USA	4.5	Argentina	6.8	Spain	3.8
Iran	5.2	USA	4.8	Argentina	6.3	France	3.9	China	5.1	UK	3.3
Argentina	4.7	UK	3.3	UK	5.9	UK	3.8	Spain	4.3	Israel	2.7
Venezuela	3.4	Iran	3.1	Venezuela	4.0	Israel	3.6	UK	4.0	France	2.5
Spain	3.2	Spain	2.9	Russia	3.8	Russia	2.4	Portugal	3.3	China	1.9
Portugal	2.2	France	1.8	Portugal	3.4	Italy	1.4	Venezuela	3.1	Russia	1.7
UK	1.9	China	1.4	France	3.3	Iran	1.2	France	3.1	Italy	1.4


It is important to consider the significant percentage indicative of the presence of news pertaining to Brazil in the Portuguese version of Google News and its relationship with related migratory aspects. According to Fernandes et al. (2021), a strong wave of immigration of Brazilians to Portugal was observed starting in 2015, characterized not only by groups seeking job opportunities but also by the arrival of middle-class groups and retirees, emphasizing prolonged residency and, eventually, the acquisition of Portuguese nationality. Additionally, the recurrent devaluation of the Brazilian currency against the euro has made it attractive to send financial remittances from Portugal to Brazil, which has increased the search for the country as a work destination. Other highlighted factors, such as the recovery of the Portuguese economy, particularly in tourism, and changes in immigration laws that facilitate the acquisition of visas, have also contributed to the increase in this migratory flow. This scenario has made Portugal the second-largest Brazilian community abroad, exerting influences and contributions, for example, in economic, cultural, and social areas (Brum, 2024). Consequently, the increase of Brazilians in Portugal may lead to greater consumption of information related to Brazil, as reflected in the numerical indices observed in this study.

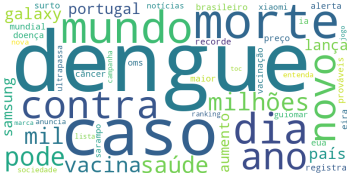
Continuing with the analysis of records identified in international mentions, specifically regarding the exchange of news between Brazil and Portugal, word clouds were generated to understand the themes

Table 8

[Homepage](#)

Braz. journal. res., - ISSN 1981-9854 - Brasília-DF - vol. 21 - N. 1 - April - 2025.

Top Stories	
	<p>Presidente de Portugal fala em reparação ao Brasil por escravidão; entenda o que significa na prática (g1)</p> <p>Reparação histórica: Portugal pretende pagar Brasil com espelhinho e cobertor com varíola (Revista Piauí)</p> <p>Associação de árbitros defende paralisação do Campeonato Brasileiro (Correio Braziliense)</p> <p>Governo do Brasil diz que declaração de Lula sobre Israel não vai contaminar G20 (SAPO)</p> <p>Lula manda embaixador em Israel voltar ao Brasil (Diário de Notícias)</p>

Secondary Pages	
	<p>Niterói é pioneira no Brasil em proteção de 100% pelo método Wolbachia contra a Dengue (O Dia)</p> <p>‘Dia D’ de combate à dengue: unidades de saúde pelo Brasil abrem para testes rápidos em pacientes com sintomas (g1)</p> <p>‘Salgadinho é mais barato que fruta’: subsidiados no Brasil, ultraprocessados causam 57 mil mortes no país, diz estudo (Três Passos News)</p> <p>Brasil vai contar com novo goleiro após 62 jogos (TNT Sports Brasil)</p> <p>Não Deixe o Samba Morrer: Como Curtir e Partilhar o Carnaval Brasileiro no Exterior (BrazilianTimes)</p>

Note: headlines and terms have been kept in the original language.

The analysis of mentions of Portugal in Google News Brazil, through word clouds and news excerpts, reveals a series of recurring themes and critical nuances that reflect contemporary concerns and interests (table 9). Regarding the records from the Homepage, the terms “party” (*partido*), “far-right” (*extrema-direita*), “election” (*eleição*), and “power” (*poder*) appeared most frequently in the word cloud. These terms indicate a strong focus on the political dynamics in Portugal, particularly highlighting the growth and impact of right-wing and far-right parties during the analyzed period. The Top Stories reinforces this trend, discussing the decisive potential of the right-

wing party Chega in the elections, the far-right party's criticisms of the Portuguese president's expulsion proposal, and the advancement of the right in parliament. The attention given to these themes suggests a relevance for the Brazilian version of Google News in the political context of Portugal.

Similarly, the results observed in the context of Top Stories records indicated a predominance of the terms "far-right" (*extrema-direita*), "right" (*direita*), "leader" (*líder*), "party" (*partido*), "Lula", and "Brazilian" (*brasileiro*). The main news includes electoral disputes between the right and left in Portugal, the rise of the radical right and its consequences, as well as statements from a far-right deputy using Lula as a negative example. There is also a cultural discussion about the influence of Brazilian Portuguese in Portugal. These highlights indicate an interest not only in Portuguese elections but also in cultural and social implications, reflecting an interconnection between the political contexts of the two countries.

Finally, in the results concerning Secondary Pages, a higher frequency of the terms "right" (*direita*), "government" (*governo*), "Brazilian" (*brasileiro*), "elections" (*eleições*), "investigation" (*investigação*), "Lula", "carnations" (*cravos*) and "revolution" (*revolução*) is observed. The presence of terms like "carnations" and "revolution" suggests a historical reference to the Carnation Revolution, while the other terms continue to reflect concerns about political rights. Additionally, the news highlights the relaxation of nationality laws benefiting Brazilians, the impact of legal changes, and legislative elections marked by the far-right attracting Brazilians. This news indicates a continuous interest in Portugal's nationality and immigration policies, along with concerns about the rise of the far right and its implications for Brazilians.

The critical discussion of these results points to Brazilian media coverage that emphasizes specific aspects of Portuguese politics, particularly the growth of the far right and its implications for Brazilians. The presence of recurring terms and themes across different sections of Google News Brazil suggests a consistent and focused narrative that may be influenced by editorial interests and the Brazilian political and social context. Furthermore, the intersection of Brazilian political figures, such as Lula, in news about Portugal indicates a tendency to compare the political contexts of the two countries. This may serve as an attempt to contextualize Portuguese events for the Brazilian audience or to reflect concerns about the influence of foreign



Portugal flexibiliza lei para obtenção de nacionalidade e beneficia brasileiros (O Tempo)

Mudança na Lei de Nacionalidade de Portugal poderá beneficiar brasileiros e é destaque nos jornais (Money Times)

Portugal às portas do inferno: Extrema direita "explode" em nova pesquisa (Revista Fórum)

Portugal dá a largada em eleições legislativas históricas marcadas por extrema direita que seduz brasileiros (CartaCapital)

Eleição em Portugal desafia brasileiros com favoritismo de partido anti-imigração (Terra)

Note: Headlines and terms have been kept in the original language.

5 Conclusions

As noted, the comparative analysis of the Brazilian and Portuguese versions of Google News reveals interesting and multifaceted dynamics regarding the informational exchange between Brazil and Portugal. In general terms, concerning the volume and diversity of news, analyses of the Brazilian version of Google News revealed greater consistency and a broader interest in global news, as well as a predominance of Brazilian sources across different tabs of the platform. Conversely, the Portuguese version of Google News exhibited, among international news mentions, a predominance of Brazilian news, suggesting a strong asymmetry in the geographical distribution of informational references between the two countries. This asymmetry may be attributed to Brazilian soft power, coupled with the migratory aspects observed between Brazil and Portugal, exerting significant cultural and informational influence. Brazilian soft power is associated with Brazil's ability to influence other countries and actors through its mass culture, active diplomacy, participation in dialogue forums, and regional integration projects (Heleno & Luiz, 2011).

The dominant presence of Brazilian sources in the Portuguese version of Google News not only indicates a response to a potential informational demand in Portugal but also contributes to the diffusion of cultural values and Brazilian perspectives, which may enhance Brazil's influence in the Lusophone landscape. In this regard, it is possible to observe that this phenomenon is related to how

media outlets serve as vehicles of cultural power and corroborates the notion that news aggregation platforms, such as Google News, play an important role in mediating interactions between different countries. Similar phenomena are observed in the media consumption of Brazilian content disseminated on social media platforms, as pointed out by Toledo and Faria (2023) regarding Portuguese children who speak only “Brazilian”.

The entire analytical scenario derived from the evaluation of the considered indicators points to a landscape where there is a greater presence of Brazil in the journalistic content aggregated in Google News Portugal, both in terms of sources and references to the country. This aspect suggests, to some extent, a reversal in the informational exchange between the countries. If previously the image of Brazil in the Portuguese media was consolidated from a relatively caricatured or secondary perspective, the advances achieved by Brazilian media indicate a strengthening that follows a path contrary to what was observed in the Brazilian press during the colonial, imperial, and early republican periods. It is important to note, however, that this is an indication limited to the interpretation of the analyzed data, necessitating a more in-depth exploration, both in terms of the breadth of sources and historical contexts.

Regarding the limitations of the present study, it is important to highlight that the reliance on the Google News algorithmic model for geographical recognition may, at times, introduce biases, especially in recognizing common terms between the contexts of the two countries. Moreover, the sample set used and the temporal period considered may not fully capture the complexity and fluidity of the informational exchange between Brazil and Portugal. Despite these limitations, it is believed that the analysis of Google News offers a valuable window into understanding the transnational communication dynamics between the two countries, reflecting cultural and informational interactions present in news aggregation, which reveal indicators of mutual exchange and influence. Furthermore, it is important to emphasize that the methodological instrumentation based on the use of computational solutions, such as data extraction scripts and artificial intelligence algorithms, enhances the analysis of textual data in communication and information studies. This strategy can be applied to a wide variety of contexts beyond news aggregators, including digital news portals, social media, blogs, and newsletters. Future studies may benefit from more refined approaches and broader datasets to deepen the understanding of the present communication dynamics.

REFERENCES

- Alzahrani, S. M. (2013). Building, profiling, analysing and publishing an arabic news corpus based on google news RSS feeds. In R. E. Banchs, F. Silvestri, TY. Liu, M. Zhang, S. Gao & J. Lang (Eds.), *Information Retrieval Technology* (pp. 488 – 499). Springer. DOI: 10.1007/978-3-642-45068-6_42
- Azevedo, C., & Sousa, J. P. (2022). “O beijo através do Atlântico”: a análise da cobertura noticiosa das revistas Ilustração Portuguesa e ABC sobre o centenário da independência do Brasil (1922). *Revista Brasileira de História da Mídia*, 11(1), 28-53. DOI: 10.26664/issn.2238-5126.111202212686
- Basch, C. H., Hillyer, G. C., & Jacques, E. T. (2022). News coverage of colorectal cancer on google news: Descriptive study. *JMIR Cancer*, 8(2), e39180. DOI: 10.2196/39180
- Brum, A. G. (2024). A emigração de brasileiros para Portugal: características e motivações de um fluxo migratório. *Caderno Humanidades em Perspectivas*, 8(19), 98 – 113. Retrieved from www.cadernosuninter.com/index.php/humanidades/article/view/2873
- Calzada, J., & Gil, R. (2020). What do news aggregators do? Evidence from Google News in Spain and Germany. *Marketing Science*, 39(1), 134 – 167. DOI: 10.1287/mksc.2019.1150
- Cobos, T. L. (2018). Perceptions and experiences about google news from the editors of latin-american news media indexed in the editions of Colombia and Mexico. *Estudios Sobre El Mensaje Periodístico*, 24(2), 1183–1198. DOI: 10.5209/ESMP.62208
- Cobos, T. L. (2021). Origin and weight of news media outlets indexed on google news: An exploration of the editions from Brazil, Colombia, and Mexico. *Brazilian Journalism Research*, 17(1), 28–63. DOI: 10.25200/BJR.v17n1.2021.1331
- Cordeiro, D. F. (2024). Perspectivas en Contraste: Análisis Comparativo Cuantitativo España y Brasil de la Cobertura del Conflicto Israelí-Palestino en Google News. *Documentación de la Ciencias y de la Información*, 47(1), 15–25. DOI: 10.5209/dcin.92187
- Cordeiro, D. F., Lopezosa, C., Guallar, J., & Vállez, M. (2024). Analysis of Google News coverage: a comparative study of Brazil, Colombia, Mexico, Portugal and Spain. *Contratexto*, (42), 177–208. DOI: 10.26439/contratexto2024.n42.7212
- Cozza, V., Hoang, V. T., Petrocchi, M., & Spognardi, A. (2016). Experimental Measures of News Personalization in Google News. In S. Casteleyn, P. Dolog & C. Pautasso (Eds.), *Current Trends in Web*

Engineering (pp. 93 – 104). Springer.

Das, A. S., Datar, M., Garg, A., & Rajaram, S. (2007). Google news personalization: Scalable online collaborative filtering. *Anais do 16th International World Wide Web Conference*. Association for Computing Machinery. DOI: 10.1145/1242572.1242610

Devlin, J., Chang, M., Lee, K., & Toutanova, K. (2019). Pre-training of Deep Bidirectional Transformers for Language Understanding. *Proceedings of the 2019 Conference of the North American Chapter of the Association for Computational Linguistics*. Association for Computational Linguistics.

Du, K., & Song, J. (2022). The impact of geotargeting on household information acquisition: Evidence from a google news redesign. *Research Policy*, 51(10), 104596. DOI: 10.1016/j.respol.2022.104596

Evans, R., Jackson, D., & Murphy, J. (2022). Google news and machine gatekeepers: Algorithmic personalisation and news diversity in online news search. *Digital Journalism*, 11(9), 1682–1700. DOI: 10.1080/21670811.2022.2055596

Fernandes, D., Peixoto, J., & Oltramari, A. P. (2021). A quarta onda da imigração brasileira em Portugal: uma história breve. *Revista Latinoamericana de Población*, 15(29), 34–63. DOI: 10.31406/relap2021.v15.i2.n29.2

Fernandes, J. L. F., & Cordeiro, D. F. (2016) Avaliação de formatos de publicação de dados abertos governamentais através de indicadores de usabilidade. *Tendências da Pesquisa Brasileira em Ciência da Informação*, 9(1), 65–84. Retrieved from <https://revistas.ancib.org/index.php/tpbci/article/view/377>

Fischer, S., Jaidka, K., & Lelkes, Y. (2020). Auditing local news presence on google news. *Nature Human Behaviour*, 4(12), 1.236–1.244. DOI: 10.1038/s41562-020-00954-0

Guallar, J. (2015). Prensa digital en 2013-2014. *Anuario ThinkEPI*, 9, 153–160. DOI: 10.3145/thinkepi.2015.37

Haim, M., Graefe, A., & Brosius, H. (2018). Burst of the filter bubble?: Effects of personalization on the diversity of google news. *Digital Journalism*, 6(3), 330–343. DOI: 10.1080/21670811.2017.1338145

Heleno, E., & Luiz, E. M. B. (2011). O soft power brasileiro em busca de uma identidade sul-americana. *Poder, Estratégia e Sociedade*, 1(0), 41–52.

Hong, C., Chen, C., & Chiu, C. (2009). Automatic extraction of new words based on google news corpora for supporting lexicon-based chinese word segmentation systems. *Expert Systems with*

Applications, 36(2), 3.641–3.651. DOI: 10.1016/j.eswa.2008.02.013

Hong, C., Chen, C., & Chiu, C. (2006). New word extraction utilizing google news corpuses for supporting lexicon-based chinese word segmentation systems. *Proceedings of the IEEE International Conference on Neural Networks*. IEEE.

Joshi, D., & Gatica-Perez, D. (2006). Discovering groups of people in google news. *Proceedings of the ACM International Multimedia Conference and Exhibition*. Association for Computing Machinery. DOI: 10.1145/1178745.1178757

Le, H., High, A., Maragh, R., Havens, T., Ekdale, B., & Shafiq, Z. (2019). Measuring political personalization of google news search. *Proceedings of the World Wide Web Conference (WWW 2019)*. Association for Computing Machinery. DOI: 10.1145/3308558.3312504

Li, J., Sun, A., Han, J., & Li, C. (2022). A survey on deep learning for named entity recognition. *IEEE Transactions on Knowledge and Data Engineering*, 34(1), 50–70. DOI: 10.1109/TKDE.2020.2981314

Lohn, R. L. (2023). Imprensa portuguesa e os debates sobre a transição política no Brasil (1976-1978): entre revolução, socialdemocracia e eurocomunismo. *Estudos Ibero-Americanos*, 49(1), e44437. DOI: 10.15448/1980-864X.2023.1.44437

Lopes, A. S. P., & Sousa, J.P. (2020). Transições na imagem do Brasil em Portugal veiculadas pela imprensa: um estudo sobre as matérias publicadas nas revistas ilustradas portuguesas (1834-1922). *P2P & Inovação*, 6(1), 257–269. DOI: 10.21721/p2p.2019v6n1.p257-269

Lopezosa, C., Vállez, M., & Guallar, J. (2024). The vision of Google News from the academy: scoping review. *Doxa Comunicación*, (38), 317–332. DOI: 10.31921/doxacom.n38a1891

Mitchell, R. (2024). *Web Scraping With Python: Data Extraction from the Modern Web*. O'Reilly Media.

Montejo-Ráez, A., Perea-Ortega, J.M., Díaz-Galiano, M.C., & Ureña-López, L.A. (2010). Experiments with Google News for Filtering Newswire Articles. In C. Peters, G.M. Nunzio, M. Kurimo, T. Mandl, D. Mostefa, A. Peñas & G. Roda (Eds.), *Multilingual Information Access Evaluation* (pp. 381–384). Springer.

Montejo-Ráez, A., Perea-Ortega, J. M., Díaz-Galiano, M. C., & Ureña-López, L. A. (2009). SINAI at INFILE 2009: Experiments with google news. *Proceedings of the CEUR Workshop*. University of Jaén.

Pim, J. E., & Kristensen, B. C. (2007). Quinhetos ano de quê?: as comemorações do achamento na imprensa portuguesa. In X. López & R. Aneiros (Eds.), *Comunicación e Cultura en Galicia e Portugal: Relatorios e Comunicaciós do III Congreso Luso-Galego de Estudos*

Xornalísticos (pp. 527-542). Consello da Cultura Galega.

Santos, N. G. de S. (2020). Nas grandes e pequenas folhas: Álvares de Azevedo na imprensa lusa oitocentista. *Via Atlântica*, 21(1), 156-189. DOI: 10.11606/va.v0i37.170071

Schroeder, R., & Kralemann, M. (2005). Journalism ex Machina – Google news germany and its news selection processes. *Journalism Studies*, 6(2), 245-247. DOI: 10.1080/14616700500057486

Seror, J., Amar, A., Braz, L., & Rouzier, R. (2010). The google news effect: Did the tainted milk scandal in China temporarily impact newborn feeding patterns in a maternity hospital? *Acta Obstetricia Et Gynecologica Scandinavica*, 89(6), 823-827. DOI: 10.3109/00016349.2010.484046

Silveira, C. R. (2019). O Itinerário de Gaspar da Silva na imprensa paulista em fins do século XIX: mediador cultural entre Brasil e Portugal. *Revista Diálogos Mediterrânicos*, (16), 136-154. DOI: doi.org/10.24858/349

Sousa, J. P. (2002). Imagens do Brasil na imprensa portuguesa de grande circulação. *INTERCOM – Revista Brasileira de Ciências da Comunicação*, 25(1), 27-46. DOI: 10.1590/rbcc.v25i1.440

Sousa, J. P. (2021). *Portugal – Pequena história de um grande jornalismo I: da manufatura à indústria*. ICNOVA. DOI: 10.34619/hyc1-qblv

Toledo, A., & Faria, P. (2023). Há crianças portuguesas que só falam “brasileiro”: a ideologia linguística da norma na imprensa portuguesa. *Todas as Letras - Revista de Língua e Literatura*, 25(2), 1-15. Retrieved from <https://editorarevistas.mackenzie.br/index.php/tl/article/view/16193>

Viana, B. C. B. (2014). A imagem do Brasil na mídia impressa portuguesa: Um estudo do caso Diário de Notícias e Público. *Ciberlegenda*, 30. Retrieved from <https://periodicos.uff.br/ciberlegenda/article/view/36953>

Viana, B. C. B., Frias, P., & Faustino, J. P. J. (2017). As representações do Brasil nos media online portugueses. In XI Encontro Nacional de História da Mídia. São Paulo, SP. Retrieved from https://drive.google.com/file/d/1pMu7Be6SjZsN_GpnXEfchCgf3oOLzq6k/view

Watanabe, K. (2013). The western perspective in yahoo! news and google news: Quantitative analysis of geographic coverage of online news. *International Communication Gazette*, 75(2), 141-156. DOI: 10.1177/1748048512465546

Wilson, T. D., & Maceviciute, E. (2013). What's newsworthy about 'information seeking'? An analysis of Google's News Alerts.

Information Research, 18(1). Retrieved from <http://InformationR.net/ir/18-1/paper557.html>

Wubben, S., van den Bosch, A., & Krahmer, E. J. (2011). Paraphrasing Headlines by Machine Translation Sentential Paraphrase Acquisition and Generation using Google News. In T. Markus, P. Monachesi, & E. Westerhout (Eds.), *Computational Linguistics in the Netherlands 2010: Selected Papers from the Twentieth CLIN Meeting* (pp. 169-183). LOT.

Young, A., & Atkin, D. (2022). An agenda-setting test of google news world reporting on foreign nations. *Electronic News*, 17(2), 113-132. DOI: 10.1177/19312431221106375

Young Lin, L. L., & Rosenkrantz, A. B. (2017). The U.S. online news coverage of mammography based on a google news search. *Academic Radiology*, 24(12), 1.612–1.615. DOI: 10.1016/j.acra.2017.05.011

DOUGLAS FARIAS CORDEIRO. Professor and researcher at the Faculty of Information and Communication at the Universidade Federal de Goiás. He holds Ph.D. in Computer Science and Computational Mathematics from the Universidade de São Paulo. He completed a postdoctoral fellowship in Journalism at the Universidade Fernando Pessoa (2023) and another at the Faculty of Information and Audiovisual Media at the Universitat de Barcelona. Contribution to the article: conception; conceptualization; methodology; data collection; indicator generation; analysis and discussion of results; writing – review and editing; review and approval of the final version of the article; validation. Email: cordeiro@ufg.br

CARLOS LOPEZOSA. PhD in Journalism from Universitat Pompeu Fabra and serves as an assistant professor at the Universitat de Barcelona. His doctoral thesis focused on studying the positioning factors of content-intensive sites, particularly online media, and evaluating SEO analysis tools. He specializes in search engine positioning and

monetization systems based on quality content strategies. Contribution to the article: conception; conceptualization; methodology; analysis and discussion of results; writing – review; review and approval of the final version of the article; validation. Email: lopezosa@ub.edu

JAVIER GUALLAR. Ph.D. in Communication from the Universitat Pompeu Fabra (UPF) and Ph.D. in Information and Documentation from the Universitat de Barcelona (UB). He is a professor at the Faculty of Information and Audiovisual Media at UB and a member of the UB's Center for Information, Communication, and Culture Research (CRICC). Author of over 50 publications indexed in WoS or Scopus, his main research areas include content curation, journalistic documentation, and social media. Contribution to the article: conception; conceptualization; methodology; analysis and discussion of results; writing – review; review and approval of the final version of the article; validation. Email: jguallar@ub.edu

JORGE PEDRO SOUSA. Full professor at Universidade Fernando Pessoa (Porto, Portugal) and an integrated researcher at ICNOVA – NOVA Institute of Communication (Lisbon, Portugal). He coordinates the Ph.D. program in Communication Sciences at Universidade Fernando Pessoa. His research focuses on journalism history, the historical-cultural analysis of journalistic discourse, and photojournalism. He earned his Ph.D. in Information Sciences – Journalism from the Universidad de Santiago de Compostela (1997) and completed a postdoctoral fellowship at the same university (1999-2000). Contribution to the article: conceptualization; analysis and discussion of results; review and approval of the final version of the article. Email: jpsousa@ufp.edu.pt

FINAL REVISION: Michelle Seidel

FINANCING: This work is part of the Project “Parameters and strategies to increase the relevance of media and digital communication in society: curation, visualisation and visibility (CUVICOM)” funded by MICIU/AEI/PID2021-123579OB-I00 and by “ERDF/EU”, Ministerio de Ciencia, Innovación y Universidades, Spain.