News platformization in Portugal: analysis of the dependence of the news media on social media and search engines

Plataformização das notícias em Portugal: análise da dependência dos media jornalísticos em relação às redes sociais e mecanismos de buscas

Fabrício Santos de Mattos*

*Instituto Universitário de Lisboa (ISCTE-IUL), Centro de Investigação e Estudos de Sociologia, Lisboa, Portugal (fabricio_santos_mattos @iscte-iul.pt)

Abstract

The research aims to understand the news platformization process based on the identification and analysis of the dependence that Portuguese news media have on social media and search engines in the process of distributed discovery of news. The method replicated the dependency analysis model proposed by Nielsen & Fletcher (2002) and Tambini & Labo (2016), selecting the 30 Portuguese journalistic media with the highest average volume of web traffic between July, August, and September 2022. Thus, the different types of access were identified with the SimilarWeb platform, used in the literature as a reference source in webometrics. The data showed that 19 news media have more than 50% of indirect traffic dependent on the platforms. As for the total volume, we found that, on average, 56.26% of news access originates from social media or search engines; 36.05% from direct access; 7.05% from reference links; and 0.31% from email, sponsored search, and advertising. Considering mobile devices, the average dependency increases to 57.35% and, on desktop devices, it drops to 50.05%. We found that there is variation according to the type of media and its content: those specializing in football have greater direct access, and those specializing in lifestyle and celebrities have greater indirect access. Digital native media also rely more on platforms, as do media coming from Radio and TV. We conclude that platformization is a relevant phenomenon in the news ecosystem in Portugal, with significant integration of journalistic media content in these digital infrastructures. Thus, media will have to find ways to counterbalance the power of platforms, which, at the same time, improve connection with the user and increase audience reach, control data, interaction patterns, as well as online advertising, operating in a logic of increased dependency.

Keywords: News platformization, reliance analysis, distributed discovery of news, Portugal news media.

Resumo

A investigação tem como objetivo compreender o processo de plataformização das notícias partindo da identificação e análise da dependência que os media jornalísticos portugueses tem das redes sociais e mecanismos de busca no processo de descoberta distribuída de notícias. O método replicou o modelo de análise de dependência proposto por Nielsen & Fletcher (2002) e Tambini & Labo (2016), selecionando os 30 media jornalísticos portugueses com maior volume médio de tráfego web entre os meses de Julho, Agosto e Setembro de 2022. Assim, identificamos os diferentes tipos de acesso com a plataforma SimilarWeb, utilizada na literatura como fonte de referência em webometrics. Os dados demonstraram que 19 media jornalísticos têm mais de 50% do tráfego indireto dependente das plataformas. Em relação ao volume total, verificou-se que, em média, 56,26% do acesso às notícias tem origem nas redes sociais ou mecanismos de buscas; 36,05% no acesso direto; 7,05% em links de referência; e 0,31% em e-mail, busca patrocinada e publicidade. Considerando os dispositivos móveis, a média de dependência aumenta para 57,35% e, no desktop, cai para 50,05%. Confirmou-se ainda variação segundo o tipo de media e seu conteúdo: enquanto os especializados em futebol tem mais acesso direto, os especializados em lifestyle e celebridades tem mais acesso indireto. Os media nativos digitais também dependem mais das plataformas, assim como os media provenientes das Rádios e TVs.

Conclui-se que a plataformização é um fenômeno relevante no ecossistema de notícias em Portugal, com integração significativa do conteúdo dos media jornalísticos nestas infraestruturas digitais. Assim, os media terão de encontrar formas de contrabalançar o poder das plataformas, as quais não deixam de auxiliar a conexão com o usuário, aumentam o alcance da audiência, controlam os dados, padrões de interação e publicidade online, operando em uma lógica de cada vez maior dependência.

Palavras-chave: Plataformização das notícias, análise de dependência, descoberta distribuída de notícias, meios jornalísticos em Portugal.

Introduction

In the digital environment, audiences increasingly access news through search engines, social media, news aggregators, email, and messaging apps, often using smartphones (Newman et al. 2023). Thus, the distribution of news content on platforms has turned them into relevant gatekeepers over the past two decades, influencing the values of journalism independence and news coverage, through processes of commodification, datification, and news selection (Van Dijck, Poell & de Wall, 2018).

As the structural transformation of the digital environment continues, platforms gradually become the central node that connects users, advertisers, and various complements, among them the news media, "hosting and organizing access to public information, creating new formats for it, encouraging (or not) investment in topics of public interest" (Nielsen & Ganther, 2022, p.13). While connecting distinct audiences and increasing the reach of news media, platforms have also increased media dependence on them.

Therefore, this research proposes a methodological application of the analysis of the dependence of news media on platforms, drawing on the models proposed by Tambini & Labo (2016) and Nielsen & Fletcher (2022), based on an understanding of direct and indirect access to news media, based on the case of Portugal.

Platforms, platformization, and the media environment

Platforms and mobile computing promoted the integration and infrastructural organization of the Web 2.0 digital environment that existed until the early 2000s (van Dijck & Poell, 2013). This process has been defined by Helmond (2015) as the platformization of the web and marks a change that began with a dual programming logic that both decentralized data production and re-centered it on platforms, with the development of software that served as an infrastructure for building applications from third-party developers, through plug-ins, trackers, logins and other digital tools that are integrated into platforms (Geerlitz & Helmond, 2013).

Thus, these digital infrastructures have also become multi-sided markets that combine advertisers, users, developers, and other actors, producing network effects whereby value increases for all participants as more people participate (Helmond, 2015). Currently, the five largest technology companies in the West, the Big Five – Alphabet (Google), Amazon, Facebook (Meta), Apple, and Microsoft – hold hierarchically organized and interdependent platform ecosystems that compete and cooperate at three different levels of the digital environment: *digital infrastructures* (hardware, operating systems, services, and cloud architecture, among others); *intermediate platforms* (identification or login services, payment systems, social media, search engines, and retail networks, among others); *and sectoral platforms,* which are linked to services such as mobility, health, news, education, and finance (van Dijck, 2022, p. 28-29).

In the case of news media, outlets relate directly to the intermediate platforms, seeking to reach a larger audience, particularly through two general but different strategies: the "on-site" strategy, i.e., publishing

links on the platforms to redirect access to their sites, and the "off-site" strategy of publishing content-like videos and photos natively on platforms (Sehl, Cornia & Nielsen, 2021). These strategies, however, are not mutually exclusive, and the positioning of the media is to seek to increase the popularity and traffic of their content, as well as the recognition of news brands and the ability to reach diverse audiences, including those who are not so interested in journalism. Anter (2023) argues that the content produced on platforms is adapted to each of them, and this production is the result of a constant negotiation between the characteristics of the platforms and professional standards.

In conceptual terms, platforms not only have a technological infrastructure dimension but are also discursive and cultural spaces in which audiences engage with content (Burgess, 2021). Poell, Nieborg & Van Djick (2020) define them as "(re)programmable digital infrastructures that facilitate and shape personalized interactions between end-users and complementors, organized through systematic collection, algorithmic processing, monetization and circulation of data". (Poell, Nieborg & Van Djick, 2020, p. 4). Poell et al. (2020) indicate platformization as a dynamic process of contemporary society, similar to industrialization, and which has not only technical but also cultural and social dimensions. The authors understand platformization as "the interpenetration of infrastructures, economic processes, and governmental structures of platforms across different economic sectors and spheres of life. And from the tradition of cultural studies, we conceive of this process as the reorganization of cultural practices and imaginations around platforms." (Poell et al., 2020, p. 5).

In the digital environment, news media compete with platforms for attention, consumer data, and advertising (Myllylahti, 2018), while at the same time relying on them to increase the reach of their brands, traffic to their sites, and online subscriptions, in a complex and ambivalent relationship, as platforms control the channels and most of the advertising (Sehl, Cornia & Nielsen, 2021). Seeking an empirical understanding of the relationship between news media and platforms, Nielsen and Ganther (2022) assess phenomena such as the growth of platform publishing by news media and the increasing dependence on *distributed news discovery*, rather than *direct news discovery*, whereby users go directly to the news media's website. Nielsen and Fletcher (2022) indicate that distributed news discovery can occur in three forms: through *intentional engagement*, which occurs when audiences follow news brands on platforms; through *automated serendipity* (Nielsen & Fletcher, 2018), which is when keywords and searches return content not previously accessed by audiences; and through *incidental exposure*, when audiences are exposed to news when they are using platforms for non-instrumental purposes, such as leisure, personal expression, and building and maintaining relationships (Boczkowski, Mitchelstein & Matassi, 2018).

On the side of news production, selection, and editing, platformized publishing is widely used by the news media in terms of adapting to platform algorithms, which in content editing processes use traffic-boosting tools such as Search Engine Optimisation (SEO) and Social Media Optimisation (SMO), as well as the growing role of social media editors, web video editors, designers or user-generated content-specialists in newsrooms (Anter, 2023; Sehl, Cornia and Nielsen, 2021) as a way of adapting their content to the logic of each platform (van Dijck & Poell, 2013).

The context of digital journalism and distributed news discovery

Portugal offers a case for studying direct and indirect media traffic as a media environment in transition, shifting from the dominance of TV to the rise of the internet and mobile in recent years. TVs are dominant in terms of audience reach in the offline environment and remain the main source of news for 51% of the

population, but these media face a more competitive online landscape, and the internet is consulted for news by 76.6% of the population, even though it is not the main source (Cardoso, Paisana & Pinto-Martinho, 2023, p. 90).

Furthermore, although the country ranks 3rd in the Reuters Digital News Report (RDNR) in terms of trust in the news media (Cardoso, Paisana & Pinto-Martinho, 2023), this is not reflected in terms of direct traffic. On the contrary, platforms have increased their influence in the country in recent years through indirect traffic: search engines rose by 6 percentage points (from 23.8% in 2018 to 29.8% in 2023); social media increased by 1.4 pp, from 23.3% in 2018 to 24.7% in 2023; and direct access fell by 11 pp, from 24.2% in 2018 to 13.4% in 2023. RDNR Portugal shows that 85% of respondents declared that accessing news was done indirectly, adding all types of modalities – social media, search engines, email, mobile notifications, and news aggregators. Platforms are increasingly relevant in Portugal's news ecosystem, in a scenario that exceeds the global average of 76% of indirect accesses (Cardoso, Paisana & Pinto-Martinho, 2023, p. 26).

Globally, the Reuters Digital News Report 2023 shows that, over the past five years, direct access to news websites and apps has fallen by 10 percentage points, from 32% to 22%; in the same period, access via social media has risen by 7 pp, reaching 30%; and access via search engines has increased by 1 pp, currently accounting for around 25% of access (Newman et. al. 2023, p.11).

However, the types of access platforms have been changing, as well as the format of the news most consumed, whether in text, video, or audio. The RDNR 2023 found that Facebook has been losing audience for the past 9 years: 28% of respondents reported accessing the platform in the last week for news in 2023, in contrast to 36% in 2014. The situation is different for other platforms, however, with Youtube having increased from 16% in 2014 to 20% in 2023; Twitter from 9% to 11%; Instagram from 2% to 14%; WhatsApp from 7% to 16%; Snapchat from 1% (in 2015) to 2% in 2023; and TikTok from 1% usage for news consumption in 2020 to 6% in 2023 (Newman et al. 2023, p. 13). It should be noted that Messenger remained at 6% throughout the timeframe studied.

There is a tendency for the communication environment to become increasingly video-based, due to changes in the Facebook algorithm (Messe & Hurcombe, 2020) and the rise of new platforms such as TikTok. While most audiences (57%) state that they still prefer to read the news, watching online videos (30%) comes second place, with 62% of respondents stating that they do so through one or more social media platform. In the meantime, video news consumption on news media websites has dropped from 31% in 2018 to 23% in 2023, increasing the gap between media consumption on platforms and news websites (Newman et al. 2023, pp.27-28). Among 18-24 year olds, the tendency to consume video news is higher, increasing from 66 percent in 2018 to 79 percent in 2023 (Newman et al. 2023, p.28).

The RDNR Portugal 2023 data shows that the Portuguese have come to agree less with the algorithmic choice criteria in the process of personalization and selection of news. In 2016, 41.9% agreed that "receiving stories selected for me by editors and journalists" was a positive factor, while in 2023 this number dropped to 38%. Likewise, in 2016, 45.3% of respondents agreed with the statement, "Receiving stories selected for me based on my past consumption is positive"; by 2023 this had fallen to 35.7%. Again, in 2016, 27.3% of respondents agreed with the statement, "Receiving stories selected for me based on my friends' consumption is positive"; in 2023, this figure was 24.3% (Cardoso et. al. 2023, pp. 15-16).

It is in this digital environment marked by the use of personal screens for news consumption (Boczkowski, 2021) that the distributed discovery of news takes place. This current trend of news consumption routines based on isolated items makes it difficult to recognize the news media that originally produced the news (Kalogeropoulos, Fletcher & Nielsen, 2019).

Methods

Research Questions

The main objective of this research was to identify and analyze the distributed discovery of news, based on the analysis of direct and indirect traffic (i.e., search engines and social media), to understand the dependence of the news media on platforms. Web traffic data were used to identify the different types of online media access and the proposal was to apply the methodological model proposed by Nielsen & Fletcher (2022) and Tambini & Labo (2016) from aggregated data from the Similar Web platform.

The following research questions were developed to understand how distributed news discovery (Nielsen & Ganther, 2022; Sehl, Cornia, & Nielsen, 2021) occurs in Portugal, as well as the levels of dependence that news media have on social media and search engines associated with this process:

RQ1: What proportion of news is accessed directly and indirectly (i.e., through social media and search engines) in the case of Portuguese news media?

As well as aiming to understand the proportions and flows of traffic in the news media (Tambini & Labo, 2016), it is also necessary to identify the differences between mobile and desktop access in the distributed news discovery process and relate them to the types of direct and platformized access. This analysis is presented in the second research question:

RQ2: What is the difference between access devices (smartphones and desktops) in levels of platform reliance?

In addition, this research also aims to understand the relationship between the discovery of distributed news and the characteristics of the types of media and the type of media content. To do this, the database of the Iberian Media Research & Fact-Checking (IBERIFIER) project was used, which typified 1229 news media in Portugal (Salaverría, et al., 2022). Based on the typification of the news media, it was possible to draw up the third research question:

RQ3: What types of media and content are related to higher and lower levels of platform dependency?

Considering these research questions, the method of analysis was divided into three phases. The first was developed after accessing SimilarWeb and collecting data on the types of traffic that exist in the 30 Portuguese news media, based on the average number of accesses for the period June, July, and August 2022. Two databases were created: one with the general sample (Tables 4, Appendix A and Table 5, Appendix B) and the second with the sub-samples of desktop and smartphone traffic types (Table 6, Appendix C), which internally have different relative accesses, for comparison purposes.

In the second phase, we aimed to understand the dependency relationship between news media and platforms. We applied the model proposed by Nielsen and Fletcher (2022) to compare direct access and indirect access via search engines and social media. We then compared the total volume of indirect accesses with the relative volume of these accesses to determine the degree of dependence on indirect traffic on the platforms.

In the third phase, we analyzed the types of media in terms of their digital origin and the type of content they carried, applying indirect traffic dependency analysis. *Datawrapper* was used to create the graphs and *SPSS 28.0* was used to analyze the data.

Data Collection

The sample was created by mapping 30 Portuguese news media. These media were chosen based on the highest average number of hits between July, August, and September 2022, using data from the SimilarWeb platform, which collects web traffic data for websites. The news media were selected by cross-checking information from the list of journalistic media from the RDNR Portugal 2022 (Cardoso et al., 2022), the list of media from Marktest web audience index data (2022), and the Iberian Media Research & Fact-Checking (IBERIFIER) project, which categorized 1229 journalistic media in Portugal (Salaverría et al., 2022).
The portals SAPO (sapo.pt) and IOL (iol.pt) were removed from the sample because they are portals that aggregate content from other news sites and because they have services such as e-mail and others. In addition to them, RFM and Radio Commercial stations were also removed from the analysis, due to the low rate of access to the site.

SimilarWeb as a tool for data collection

SimilarWeb is a private service for analyzing web-centric traffic data, i.e., *webometrics*. The platform provides web analytics data for one or multiple websites. "SimilarWeb uses a mix of user, site, and network-centric data collection approaches to triangulate data, reportedly collecting and analyzing billions of data points per day." (Jansen, Young & Salminen, 2022, p. 7).
The platform is broadly used in the literature as a secondary reference source in works investigating tourism in Portugal (Gonçalves et al., 2020), information consumption patterns (Crespo-Pereira et al., 2021), analyzing platform dependence and influence on media access in the digital environment (Tambini & Labo, 2016), website ranking (Prantl & Prantl, 2018) and measuring interactions with websites (Jansen et al., 2022).
The information available on the SimilarWeb website indicates that the data is obtained from various sources and uses a method that involves triangulation. Jansen et al. (2022), analyze SimilarWeb in comparison to Google Analytics, and they indicate that the tools are different, as Google Analytics is website-centric and provides proprietary data about the website itself, while SimilarWeb is a network-based competitor benchmarking service that has become essential for several areas of analysis:

> "Website analytics services are essential for a variety of reasons, including competitive analysis, advertising, marketing, domain purchasing, programmatic media buying, and firm acquisition, along with the use of website analytics services in academic research. They are also valuable for accessing the external view of one's website (i.e., what others who do not have access to site-centric analytics data see)." (Jansen et. al., 2022, p. 3).

The authors argue that SimilarWeb provides 19.4% lower data on website visits than Google Analytics, but the two tools are strongly and positively correlated, which means that the metrics are statistically close. The authors, therefore, recommend that SimilarWeb works well and can be used for website ranking (Jansen et. al., 2022). In this research, we apply the 19.4% correction proposed by authors to the SimilarWeb platform metric of total visits.
Prantl & Prantl (2018), however, argue that no tool can measure visits and website rankings with complete accuracy due to data privacy rules. Therefore, it must be taken into account that these are approximate values.

> "Due to the nature of these methods, it is impossible to gain all the visitor traffic data (particularly as a result of the protection of personal data, with users unwilling to share information on what websites they visit). However, these methods are sufficient to determine the approximate visitor traffic." (Prantl & Prantl, 2018 p. 434-435).

Model and Variables

The model used in this research aimed to analyze the role of digital intermediaries in the distributed news discovery process by analyzing direct and indirect traffic to news websites. This model was applied by Tambini & Labo (2016) in the United Kingdom, who sought to understand the proportions of web traffic passing through the platforms. Following Tambini & Labo (2016), we chose to use information from the SimilarWeb platform as a database, as the platform provides absolute and relative aggregated data for each news media.

Recently, Nielsen & Fletcher (2022) applied a model to understand the concentration of direct and indirect online traffic and the levels of reliance that news media in the UK have on platforms. The model proposed by the authors compares the distribution of direct traffic data with indirect traffic. But unlike the authors, our concern here was to understand the dependence of social media and search engines on traffic distribution. Therefore, the variables related to the traffic that comes from links from other sites and aggregators (referrals) are in the other variable, and traffic from e-mail, advertising, and paid searches are aggregated in the variable "others".

The differences between mobile and desktop access, the types of media about their digital origin, and the types of content were other variables included in our model, seeking empirical evidence on the influence of digital intermediaries in the news distribution process. The variables used are described in Table 1.

Table 1: Metrics and indicators on the SimilarWeb platform

Metric	Concept
Total Visits	Indicates the total visits of a website, measured by the sum of desktop and mobile visits. This number already considers the application of the 19.4% correction proposed by Prantl & Prantl (2020).
Average monthly access	Indicates the average monthly accesses; in this paper we consider the months of June, July, and August 2022.
Direct Traffic	Indicates traffic from users directly entering the URL, using a bookmark or saved links.
Desktop Traffic	Indicates a percentage of incoming traffic from the desktop.
Mobile Traffic	Indicates a percentage of incoming traffic from the mobile web.
Social Traffic	Traffic is sent from social media sites such as Facebook, Twitter, or Reddit (organic and paid).
Search Traffic	Refers to the search results of a search engine that cannot be influenced by paid advertising, i.e., organic search.

Metric	Concept
Referrals Traffic	Referral traffic includes traffic coming to a site through affiliates, links, content partners, and traffic from direct media buying or news coverage.
Others Traffic	Indicates the sum between the traffic coming from emails, advertising, and paid search.
Reliance Social Search	Indicates the sum between the number of visits from social media and search engines.

Source: SimilarWeb (2022b)

Regarding qualitative variables, we chose to use the coding proposed by the model developed by Salaverría et al. (2022), as described in Table 2.

Table 2: Qualitative variables of the news media

Characteristics	Concept	Indicator
Native Medium	Indicates a media outlet as a digital native if the journalistic brand started its activity mainly as an internet media, without television or radio broadcasting through terrestrial waves.	Yes / No
Thematic Scope	Indicates if a news media outlet has specialized or generalist information	General information Sports Economics and Business Entertainment and leisure

Source: Salaverría, Martínez-Costa, Negredo, Paisana, & Crespo (2022)

Research limitations

The main limitation of the data is that it does not capture the access that does not leave the platforms via links, and therefore we did not include in the analysis the "off-site strategy" of distributed content, i.e., when users do not need to leave the platforms to consume news (Sehl, Cornia, & Nielsen 2021). As such, the metrics are related to links that come from Facebook, Google, Twitter, Linkedin, and Reddit. This strategy is defined in the literature as an "on-site" strategy (Sehl, Cornia, & Nielsen 2021), i.e., when news outlets use these platforms to get users' attention from social media and search engines to their websites, where they can sell advertisements.

Considering the factors that also interfere with the dependence that news media have on platforms, the research also has the limitation of not discussing the context of news production for platforms (Pyo, 2022; Anter, 2023; Meese & Hercombe, 2020), instead of focusing on distribution. Another limitation is that the forms of revenue generated by traffic from social media and search engines are not explored in our data (Myllyati, 2018).

Yet another limitation comes from the fact that SimilarWeb does not make clear which traffic comes from news aggregators, such as Apple News, Flipboard, and others. Therefore, this category was not included in the analysis. Referral links are present in the sample description, but the analysis will focus on the role of

social media and search engines. SimilarWeb also doesn't differentiate between content from Search Engine Optimization and Social Media Optimization, as it analyses traffic data, and the platform only offers three months of traffic data visualization in its free version, which is why it was decided to use the average over this period.

Results

Sample characteristics

The first phase of the research aimed to describe the Portuguese news media and their characteristics. Thus, the sample contains 30 journalistic media, of which 18 are generalist media (60% of the sample), and 12 are specialized media (40% of the total). The specialized media are divided into 5 sports (16.7% of the total); 4 entertainment and leisure (13.3%); and 3 economy and business (10%). As for the digital origin, the majority come from TV, press, or radio, i.e., 22 journalistic media are not digital natives (73.3% of the sample), while 8 are digital natives (26.7% of the sample), as described in Table 3.

Table 3: Characteristics of the news media.

News media	**Website**	**Average 3 Months visits**	**Media Scope**	**Digital Native Medium**	**Platform Native**
A Bola	abola.pt	35.449.860	Sports (Soccer)	No	Press
Record	record.pt	31.426.080	Sports (Soccer)	No	Press
Correio da Manhã	cmjornal.pt	20.214.420	General information	No	Press
Notícias ao minuto	noticiasaominuto.com	19.390.560	General information	Yes	Online
Público	publico.pt	18.638.340	General information	No	Press
Jornal de Notícias	jn.pt	18.148.800	General information	No	Press
O Jogo	ojogo.pt	16.489.140	Sports (Soccer)	No	Press
Expresso	expresso.pt	15.844.380	General information	No	Press
CNN Portugal	cnnportugal.iol.pt	13.050.420	General information	No	TV
Observador	observador.pt	12.656.400	General information	Yes	Online
Flash	flash.pt	11.685.678	Entertainment and Leisure	Yes	Online
RTP	rtp.pt	9.445.734	General information	No	TV
Diário de Notícias	dn.pt	9.421.854	General information	No	Press
Nit - New In Town	nit.pt	8.583.666	Entertainment and Leisure	Yes	Online

News media	Website	Average 3 Months visits	Media Scope	Digital Native Medium	Platform Native
Zerozero.pt	zerozero.pt	8.082.186	Sports (Soccer)	Yes	Online
Sic Notícias	sicnoticias.pt	6.180.144	General information	No	TV
Mais Futebol	maisfutebol.iol.pt	5.054.202	Sports (Soccer)	Yes	Online
SIC	sic.pt	4.648.242	General information	No	TV
Jornal de Negócios	jornaldenegocios.pt	4.501.380	Economics and business	No	Press
ECO – Economia Online	eco.sapo.pt	3.991.542	Economics and business	Yes	Online
TVI	tvi.iol.pt	3.693.042	General information	No	TV
Sol	sol.sapo.pt	3.123.504	General information	No	Press
Ekonomista	e-konomista.pt	2.942.016	Economics and business	Yes	Online
Rádio Hiper FM	hiper.fm	2.844.108	Entertainment and Leisure	No	Radio
TSF	tsf.pt	2.667.396	General information	No	Radio
Sábado	sabado.pt	2.452.476	General information	No	Press
Visão	visao.sapo.pt	2.341.434	General information	No	Press
Correio da Manhã TV	cm-tv.pt	2.181.438	General information	No	TV
Nova Gente	novagente.pt	2.137.260	Entertainment and Leisure	No	Press
RR – Rádio Renascença	rr.sapo.pt	2.003.532	General information	No	Radio

Source: Salaverría, R. Martínez-Costa, M., Negredo, S., Paisana, M. & Crespo, M. (2022) / SimilarWeb (2022)

Types of news media traffic

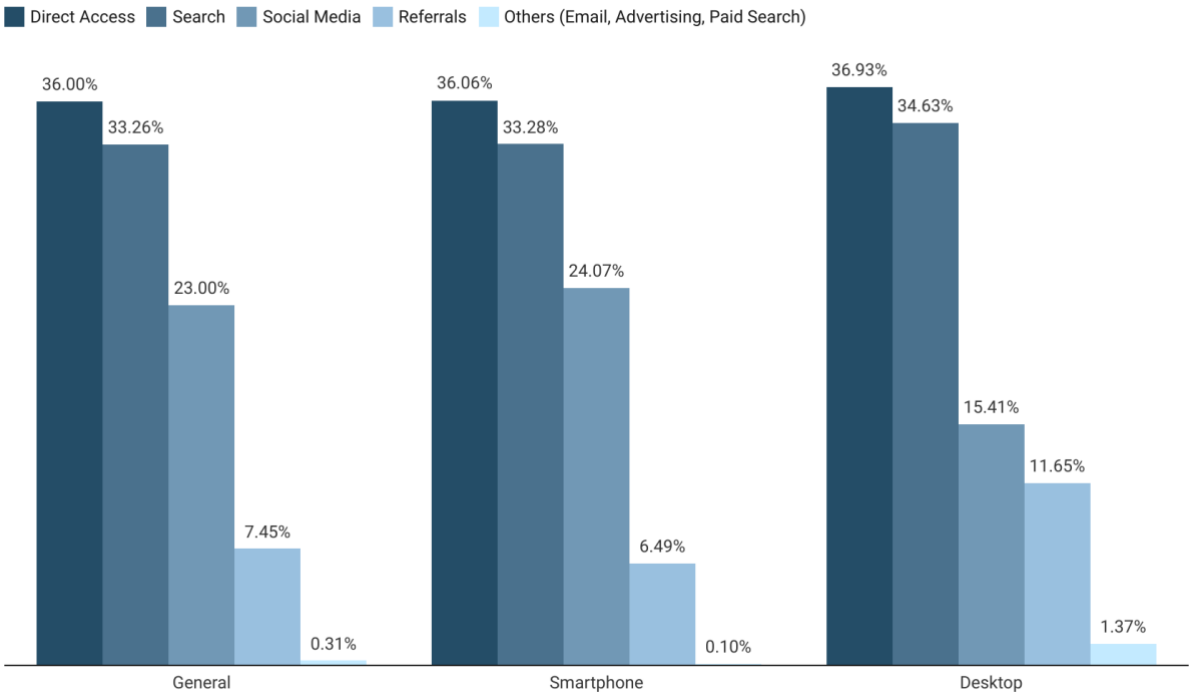
Table 4 (Appendix A) shows the overall data for direct traffic, social media, search, referrals links, and other (traffic from email, paid search, and advertising), as well as the relative percentages of the total and the sample average data. The relative average of direct traffic is 36.05% of the total, while the relative average of traffic via search engines is 33.26%, social media is 23.29%, in addition to 7.45% of referral links and 0.31% of accesses from other means (email, paid search and advertising).

Table 5 (Appendix B) presents the general data on access via smartphones and desktops. Mobile access represents 79.7% of total accesses, while desktop access represents 20.3%.

Table 6 (Appendix C) shows the internal access data in the mobile and desktop subsamples. It is possible to observe that the averages of the types of access via smartphone are closer to the overall averages in all

types of access. This means that smartphone access tends to better reflect overall access than desktop access. Figure 1 summarizes the information from Tables 3 and 5, comparing desktop and smartphone accesses.

Figure 1: Types of news media traffic



Source: SimilarWeb 2022

Direct access of the overall sample and direct access via desktop and smartphones have close averages, with no statistically significant differences, both in desktop access ($t_{(29)}$=-0,398; p=0,693, r=0,07) and smartphone access ($t_{(29)}$=-0,081; p=.936, r=0,01). To summarize, the sub-samples (smartphone and desktop) represent well the overall average of direct access.

In the case of access via search engines, the same occurs, the smartphone ($t_{(29)}$=-0,896; p=0,963, r=0,008) and desktop ($t_{(29)}$=-0,047; p=0,378, r=0,16) averages represent the overall average well, i.e. the averages of the subsamples are not statistically different from the overall average.

However, in the variable of access via social media, we found that there is a statistically significant difference with a large effect on access via desktop, when compared to the values of the general average ($t_{(29)}$=11,806; p<.001, r=0,90), while the average of access via smartphone is not statistically different[1] from the overall average ($t_{(29)}$=-2,405; p=.023, r=0,40). This means that smartphones represent overall behavior better than desktop social media access.

In the comparison of accesses via referral links from other sites, desktop devices have higher average access than the overall average, but this difference is not statistically significant even for desktop accesses ($t_{(29)}$=-2,525; p=.018, r=0,40), nor for access via mobile devices ($t_{(29)}$=2,236; p=.033, r=0,44).

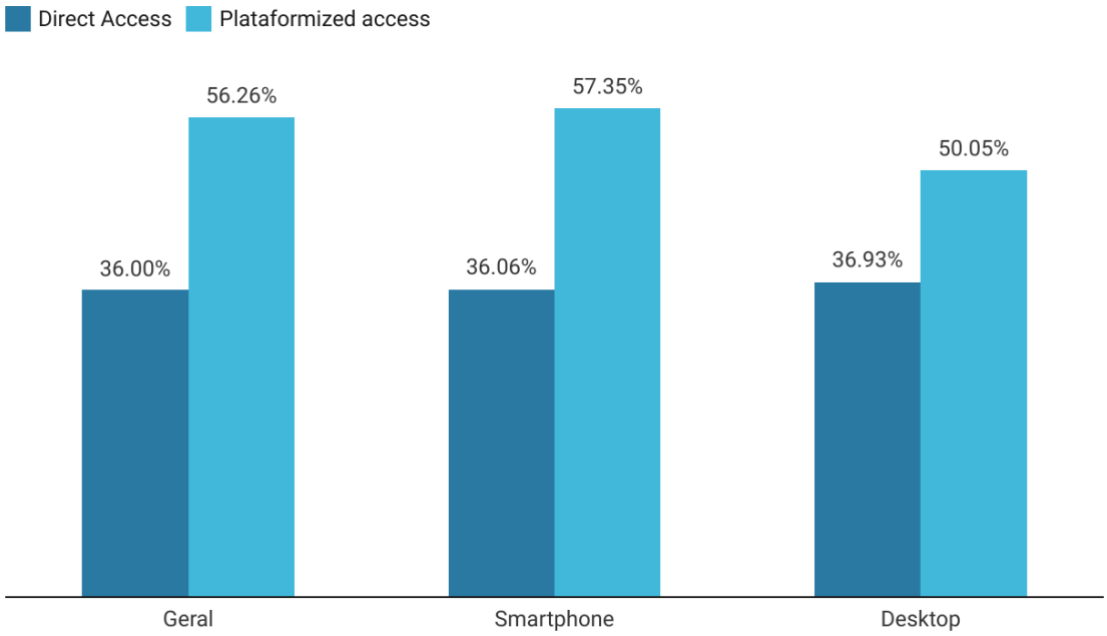
In the case of access via email, advertising, and paid search, there are also statistically significant differences between the desktop and the overall average, with a medium effect ($t_{(29)}$=-2,405; p<.001, r=0,69), and are statistically significant in the case of the comparison between smartphone accesses and the overall average,

[1] The significance level considered was p<0,01.

with a medium effect ($t_{(29)}$=3,339; p=.002, r=0,53). In this case, neither of the two sub-samples represented the mean of the overall sample.

As for platformized access, i.e., from social media and search engines, there are also statistically significant differences between general access and those via desktop, with a medium effect ($t_{(29)}$=4,743; p<001, r=0,66), whereas the average of accesses via smartphone is not statistically different from the overall average, with a small effect ($t_{(29)}$=-1,464; p=.154, r=0,26). Again, platformized access from smartphones better reflect the overall behavior of the sample, demonstrating that there are differences between device types (Figure 2).

Figure 2: Types of news media access



Source: SimilarWeb 2022

In summary, there are significant differences between access to news media content via mobile and desktop devices, when considering the variable of social media and platformized access. This is because access via social media is higher on smartphones (difference of 8.66 percentage points in the sample) and platformized access is higher on these devices too (difference of 7.3 percentage points in the sample). Thus, when analyzing data on indirect access to news media, researchers should take these two variables into account when extrapolating media consumption measured through desktop devices. In this type of analysis, access via smartphone tends to better represent the overall average.

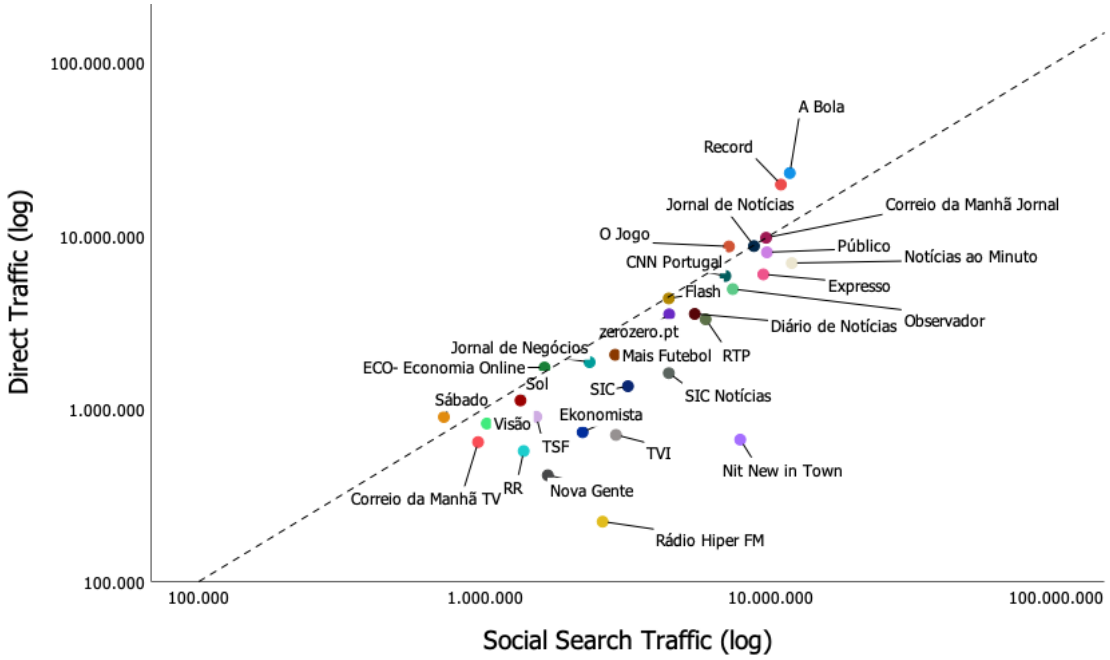
Reliance of the news media on platforms

There is a strong positive correlation among news media, social media, and search engine platforms in terms of Direct Traffic Volume data and Platformized Traffic Volume (r=0,795, p<001), i.e., when one increases, the other tends to behave in the same way. Figure 3 shows the correlations between the volume of direct traffic and the volume of traffic from social media and search engines of the Portuguese news media in the sample. Following the model proposed by Nielsen and Fletcher (2022), we applied the logarithmic

transformation to the Direct Traffic Volume data and Platformized Traffic Volume (i.e., Social Media and Search Engines Traffic) variables to facilitate visualization of the relationships between them.

The media outlets focusing on sports (*A Bola*, *Record*, and *O Jogo*) have a large volume of direct and indirect traffic. On the other hand, some journalistic media can balance a large volume of direct and indirect accesses from the platforms, such as the *Correio da Manhã* newspaper, *Público*, and *CNN Portugal*. Some media have a smaller volume of traffic but are more dependent on platforms, such as the *NiT (New in Town)*, *Rádio Hiper FM*, and *Nova Gente* websites.

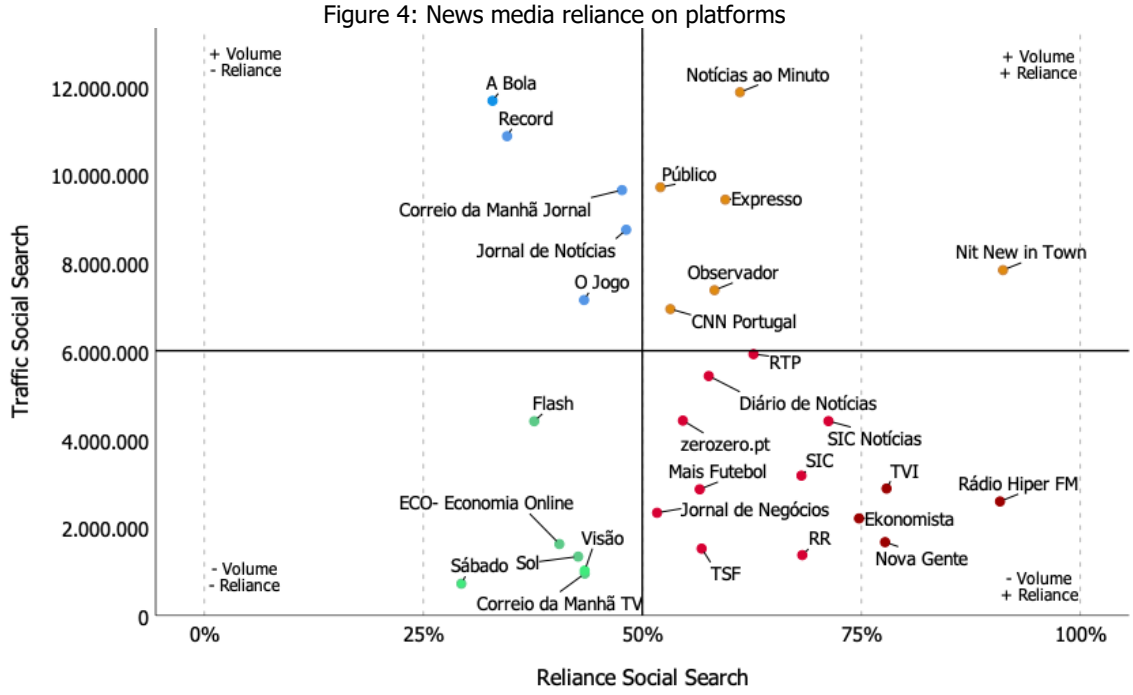
Figure 3: News media direct traffic plotted against social media and search traffic



Source: Author

Figure 4 shows the reliance relationships between news media and platforms, with the relative traffic volume of platforms and the absolute traffic volume, allowing the visualization of the profiles of each group of news media and their reliance relationships with platforms.

Figure 4: News media reliance on platforms



Source: Author

In general, 19 news media (63.3% of the sample) have indirect traffic that depends on the platforms at levels above 50%, 5 media (16.6% of the total) have their indirect traffic equal to or above 75% of dependence on platforms, and 11 media (36.6% of the sample) have levels of dependence lower than 50%.

In terms of the empirical profiles of the media, the first group is formed by journalistic media that have a *high volume of traffic and a low dependence* on social media and search platforms, among them the websites of the sports newspapers *A Bola*, *Record*, and *O Jogo*, as well as the website of the generalist newspapers *Correio da Manhã* and *Jornal de Notícias*. This profile represents 16.6.% of the sample, and they have a level of dependence on the platforms between 25% and 50%.

In the second quadrant, we have a group formed by six journalistic media (20% of the sample) that have a *higher volume of distributed traffic but a level of dependence above 50%,* with the *NiT* website (digital native journalistic media linked to entertainment, lifestyle, and gastronomy) being an extreme case, located in a range above 75% of dependence.

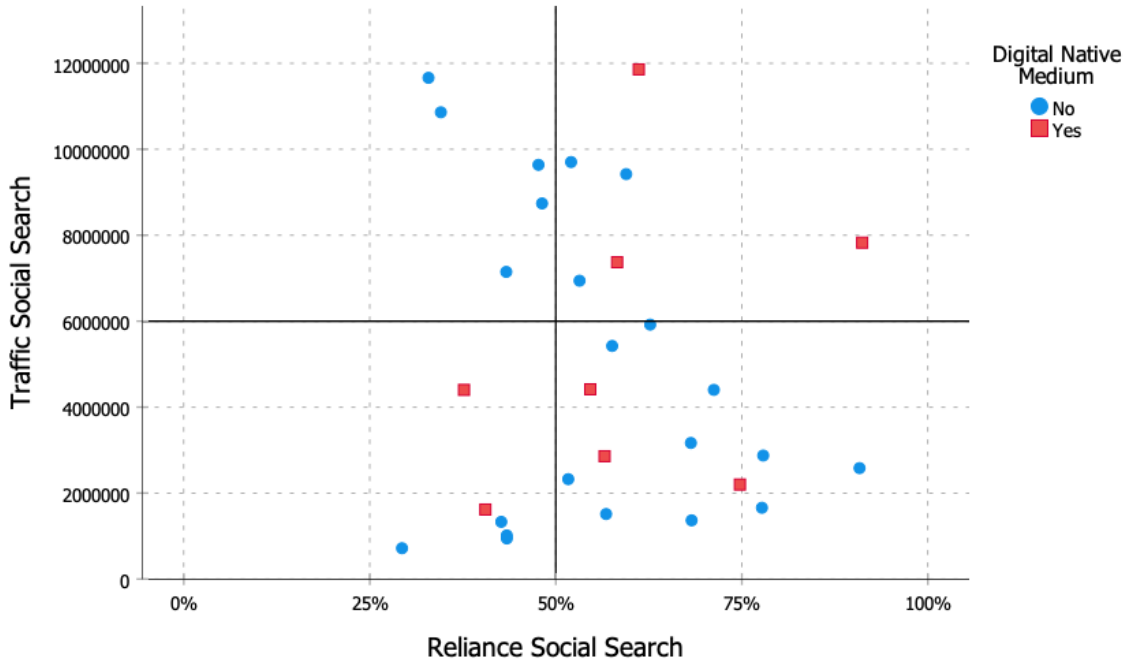
In the third quadrant are 13 journalistic media (43.4% of the sample) that have a *low volume of indirect traffic, but are very much dependent on the platforms,* with the extreme cases – equal to or above 75% dependence – being the *Ekonomista* website (digital native media specialized in economics and business), *TVI* (generalist TV channel website in Portugal), the *Nova Gente* magazine website (entertainment and celebrity magazine) and the *Rádio Hiper FM* website (radio focusing on music, entertainment and celebrity news).

In the fourth quadrant are six journalistic media (20% of the sample) that have a *low volume of indirect traffic and also depend less on social media platforms and searches*, such as the generalist magazine *Sábado* and the entertainment and celebrity website *Flash*, which depend less than 50% on platforms.

Reliance on platforms and media characteristics

About the total of each group, eight digital native news media are the ones with the most platform-dependent indirect traffic: 75% of them are above 50% dependent on this type of traffic, which shows that there is a platformized publishing strategy among these media. In the universe of 22 non-digital native media, 13 of them (59%) are at a level of dependence on social media higher than 50%, with three extreme cases, indicating that there is a convergence between the digital native and non-native media in terms of positioning around the platforms (Figure 5).

Figure 5: Digital native news media reliance on platforms



Source: Author

However, among the 3 radio stations in the sample, all of them (100%) have dependence above 50%; in the case of the TV sample (n=6), 5 of them (83.3%) have high dependence; among the 8 online media, 5 of them (62.5%) have high dependence; and among the 13 print media, 46.15% have a high level of dependence.

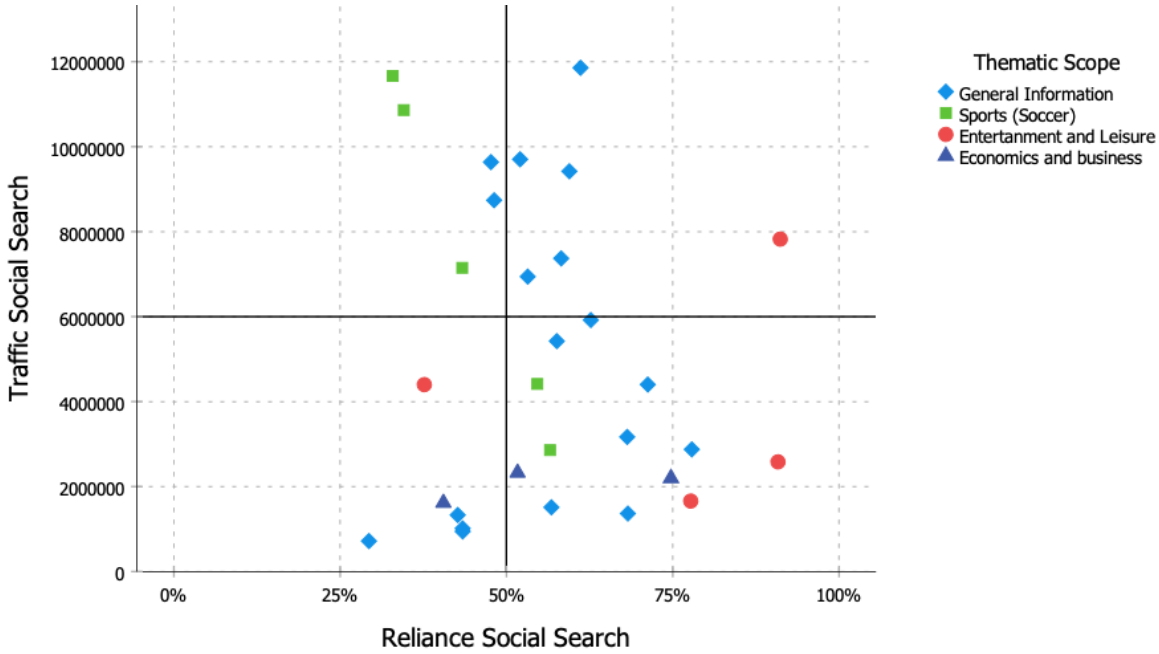
Radio and TV stations have invested heavily in platforms to get traffic and have integrated with them through online broadcasts, publications with links, and video direct posts, using on-site and off-site distribution strategies (Sehl, Cornia & Nielsen (2021). The differences may also have to do with Facebook's algorithm change, which since 2018 has favored videos over text and links (Messe & Hercombe, 2020; Myllylahti, 2018). Print media, on the other hand, has more direct traffic, while basing its distribution strategy mainly on links (Sehl, Cornia & Nielsen, 2021).

Regarding the content dimension (Figure 6), proportionally, entertainment and leisure media are the most dependent on platformized indirect access: 3 out of 4 (75% of them) are dependent on platforms at levels above 75%.

On the other hand, sports-related news media have a lot of access from platforms but are not as dependent on these digital infrastructures: 3 out of 5 (60% of them) are at levels of dependence below 50%. Among

business and economy media, 2 out of 3 (66.6% of them) are dependent on platform traffic above 50%. Among the 18 generalist media, 12 have more than 50% of their indirect traffic dependent on platforms (66% of this sub-sample).

Figure 6: Thematic scope of media reliance on platforms



Source: Author

In our sample, while the general picture of generalist media indicates around 50% of dependence on traffic, we have two extreme cases of specialized media that gravitate more between greater and lower dependence. Direct traffic from sports media has to do with brand recognition by users, who tend to access the content of these sites directly. On the other hand, news about celebrities, gossip, and fashion seems to be more articulated with the algorithmic curation of the platforms (Lischka & Garz, 2021).

Discussion

In this research, we aim to provide empirical data that contributes to an overview of the role of digital intermediaries in the process of distributing and accessing news, taking the Portuguese news media as a case study. By analyzing the role of social media and search engines, the results show how audiences access news mainly through distributed discovery processes and platform publications (Nielsen & Fletcher, 2022; Nielsen & Ganther, 2022; Sehl, Cornia, & Nielsen, 2021).

We had previously listed three questions concerning the role and influence of platforms in the distribution of news in Portuguese news media. Regarding the first question, concerning the proportion and comparison between news accessed directly and indirectly (i.e. through social media and search engines), we found that 56.26% of the sample of 30 Portuguese news media depend on search engines and social media in the news distribution process. This data shows that the digital environment in which news circulates is highly platformized, even though TV remains the main form of access to news for the majority of the Portuguese population (Cardoso et al., 2023).

We also found that, in Portugal, distributed news discovery relies more on search engines (32.26%) than on social media (23.29%), which is consistent with the findings of RDNR Portugal (Cardoso et al., 2023, pp. 92-93). This raises questions about the focus of future research, which should take this into account when analyzing platformization not only through social media.

Regarding the second question, we find that there are differences between access via desktop and on smartphones. The difference is mainly in social media, where distributed news discovery is higher on smartphones (57.5%) than on fixed devices (50.05%). As a background, we have a digital environment marked by the use of personal screens in which news discovery occurs as part of derivative routines, in which the correspondence between the medium and consumption practices are different. This makes it difficult to draw a direct correlation between the two, given their complexity and variability (Boczkowski, 2021). Researchers should take into account the specificity of smartphone access, which accounts for 79.7% of total traffic and better reflects the universe of news access.

The third research question addressed the characteristics of the media. We found that. in the Portuguese case, the media with the greatest direct access are news media specialized in sports and those with the greatest dependence are, proportionally, digital native media, legacy media such as radio and TV, which have migrated their content to a publishing strategy strongly based on platforms.

On the other hand, Meese & Hercombe (2020) argue that these moments of dependence are partial and transitory, and the media have historically positioned themselves on the platforms based on a struggle to incorporate new technologies into their institutional routine, altering their strategies according to changes in the platforms' algorithms and the revenue made from their presence therein.

Another relevant aspect is that, as Myllylahti (2018) demonstrates, direct traffic continues to be the main way for news organizations to sell digital advertising and maintain a profitable relationship. Traffic dependency is one indicator, but not the only one, as attention-seeking platforms do not necessarily generate dependency in terms of revenue for news outlets. The author finds estimated values between 0.03% and 0.14% for traffic profits on social media platforms. This means that even with a considerable amount of traffic coming from digital intermediaries, leaving these platforms would not cost the media much in terms of profit (Myllylahti, 2018).

In a short-term relationship, news media can increase traffic to websites and apps, brand reach, and online subscriptions (Selh, Cornia & Nielsen, 2021). What academics, media managers, and regulators are questioning is the media's dependence on platforms in the long-term process (Nielsen & Ganther, 2022), as well as the change in the communication environment with the entry of native content platforms such as Instagram and TikTok. In these cases, the "on-site" publishing strategy won't work, and the platforms will be used much more for native and off-site publishing, which can lead to increased dependency on the platform.

Conclusions

As intermediary platforms such as social media, search engines, and news aggregators dominate ways of finding and consuming news, the news media must adapt to them. Nielsen & Ganther (2022) point to platforms having specific powers to create patterns, establish connections, automate actions at scale, operate across multiple web domains, and keep their code and algorithms secret. This happens because of the power of the platforms, a generative form of power that is

> "exercised through socio-technical systems built by companies that draw many different third parties in by empowering them to do things that each one of them value and wants, while in the process leading them to become ever-more dependent on the platform in question, increasingly intertwined in highly asymmetric relations." (Nielsen & Ganther, 2022, p. 1-2)

Pyo (2022) argues that platforms have the power to create and define standards that even institutions like the news media end up having to follow. According to the author, the media's dependence on platforms occurs within a spectrum, ranging from greater to lesser dependence according to the size and strategy of the news media. Therefore, when analyzing the impact of platforms on the news ecosystem, future research should take into account the different journalistic practices that occur at an institutional level, i.e. based on the routines, norms, and values that govern journalistic practices (Pyo, 2022).

These power relations are constantly disputed between the news media and the platforms, with a growing and active negotiation in terms of adapting content for each of them (Anter, 2023). This ambivalence between the volume of traffic coming from the platforms and the media's strategies in the process of platformized publishing should be the target of further reflections, as should the low revenues obtained by the media when they make their content available (Myllylahti, 2018).

Another relevant factor is the changing environment of the platforms, with the increasing decline of Facebook in terms of use for news access, at both global and national scales (Newman et al., 2023; Cardoso et al., 2023), and the rise of other platforms such as Instagram and TikTok which do not have links as their main functionality, forcing the news media to adopt a native publishing practice, i.e. distributing content on these platforms and becoming more dependent on them.

Thus, with the data presented here and based on data from other investigations listed in this article, we can conclude that the platformization of news (van Djick et al., 2022), or platformized publishing (Nielsen & Ganther, 2022) is a relevant phenomenon for the news ecosystem in Portugal. It significantly affects news media traffic and is a process that has the potential to shape the way journalistic content is presented by these digital intermediaries. The media have different ways of dealing with the risks posed by the platforms and counterbalancing the power of these digital infrastructures which, while helping to connect with the user and increase the reach of the audience, also control the data, interaction patterns and online advertising, operating in a logic of dependence.

Acknowledgments

This research was funded by the Merit Grant of the Instituto Universitário de Lisboa (ISCTE-IUL).

Bibliographical references

Anter, L. (2023). How News Organizations Coordinate, Select, and Edit Content for Social Media Platforms: A Systematic Literature Review. *Journalism Studies*, 0(0), 1–21. https://doi.org/10.1080/1461670X.2023.2235428

Boczkowski, P. J., Mitchelstein, E., & Matassi, M. (2018). "News comes across when I'm in a moment of leisure": Understanding the practices of incidental news consumption on social media. *New Media & Society*, 20(10), 3523–3539. https://doi.org/10.1177/1461444817750396

Boczkowski, P. J. (2021). *Abundance: On The Experience Of Living In A World Of Information Plenty*. New York, NY: Oxford University Press.

Burgess, J. (2021). Platform Studies. *Creator Culture: An Introduction to Global Social Media Entertainment*, edited by Stuart Cunningham and David Craig, New York, USA: New York University Press, pp. 21-38. https://doi.org/10.18574/nyu/9781479890118.003.0005

Cardoso, G., Paisana, M., & Pinto-Martinho, A. (2023). Digital News Report Portugal. Lisboa: Obercom. Retrieved from: https://obercom.pt/digital-news-report-portugal-2023/ 01 Jul 2023.

Crespo-Pereira, V.; Vaca-Tapia, A. C.; Manciati-Alarcón, R. X.; Cabrera-Espín, S. I.(2022). Marketing and Digital Press: Information Consumption Patterns in Colombia During COVID-19. *International Conference on Communication and Applied Technologies, ICOMTA 2021*, 259,304-313.

Gerlitz, C., & Helmond, A. (2013). The Like economy: Social buttons and the data-intensive web. *New Media & Society*, 15,1348-1365. https://doi.org/10.1177/1461444812472322

Gonçalves, M. J. A.; Camarinha, A. P.; Abreu, A. J.; Teixeira, S. F.; Ferreira da Silva, A. (2020). An analysis of the most used websites in Portugal regarding accessibility web in the tourism sector. International Journal of Information Systems and Tourism (IJIST), 5(1), 19-28.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., & Tatham, R.L. (2009). Análise Multivariada de dados. Porto Alegre: Bookman. 6th ed.

Helmond, A. (2015). The Platformization of the Web: Making Web Data Platform Ready. *Social Media and Society*, *1*(2). https://doi.org/10.1177/2056305115603080

Kalogeropoulos, A., Fletcher, R., & Nielsen, R. K. (2019). News brand attribution in distributed environments: Do people know where they get their news? *New Media & Society*, 21(3), 583–601. https://doi.org/10.1177/1461444818801313

Meese, J., & Hurcombe, E. (2021). Facebook, news media and platform dependency: The institutional impacts of news distribution on social platforms. *New Media & Society*, 23(8), 2367-2384. https://doi.org/10.1177/1461444820926472

Myllylahti, M. (2018). An attention economy trap? An empirical investigation into four news companies' Facebook traffic and social media revenue. Journal of Media Business Studies, 15(4), 237–253. https://doi.org/10.1080/16522354.2018.1527521

Newman, N., Eddy, K., Nielsen, R.K., Fletcher, R., Robertson, C. (2023). Digital News Report 2023, Reuters Institute. United Kingdom. Retrieved from: https://policycommons.net/artifacts/4164711/digital_news_report_2023/4973510/ on 01 Jul 2023.

Nieborg, D. B., & Poell, T. (2018). The platformization of cultural production: Theorizing the contingent cultural commodity. *New Media and Society*, *20* (11), 4275–4292. https://doi.org/10.1177/1461444818769694

Nielsen, R. K., & Ganter, S. A. (2022). *The Power of Platforms*: Shaping Media and Society. New York: NY. Oxford University Press.

Nielsen, R. K., & Fletcher, R. (2022). Concentration of online news traffic and publishers' reliance on platform referrals: Evidence from passive tracking data in the UK. *Journal of Quantitative Description*: Digital Media, 2. https://doi.org/10.51685/jqd.2022.015

Poell, T., Nieborg, D., & Dijck, J. van. (2020). Plataformização. *Fronteiras - Estudos Midiáticos*, *22* (1), 2–10. https://doi.org/10.4013/fem.2020.221.01

Pyo, J. Y. (2022). Different stakes, different struggles, and different practices to survive: News organizations and the spectrum of platform dependency. *New Media & Society*, 0 (0). https://doi.org/10.1177/14614448221123279

Prantl, D., Prantl, M. (2018). Website traffic measurement and rankings: competitive intelligence tools examination, *International Journal of Web Information Systems*, 14 (4), pp.423-437, https://doi.org/10.1108/IJWIS-01-2018-0001

Salaverría, R. Martínez-Costa, M., Negredo, S., Paisana, M. & Crespo, M. (2022). IBERIFIER Digital Media Dataset (1.1.0) [Data set]. Zenodo. https://doi.org/10.5281/zenodo.7335551

SimilarWeb (2022a), "How We Measure the Digital World?" available at: https://www.similarweb.com/corp/ourdata/

SimilarWeb (2022b), "View Website Performance" available at: https://support.similarweb.com/hc/en-us/articles/360010749958-View-Website-Performance

Tambini, D., Labo, S. (2016), Digital intermediaries in the UK: implications for news plurality, *info*, Vol. 18 (4), pp.33 – 58. http://dx.doi.org/10.1108/info-12-2015-0056

Van Dijck, J. Van, Poell, T., & Waal, M. De. (2018). *The Platform Society*: public values in a connective world. New York, NY: Oxford University Press.

van Dijck, J., & Poell, T. (2013). Understanding Social Media Logic. *Media and Communication*, 1(1), 2-14. https://www.cogitatiopress.com/mediaandcommunication/article/view/70/60

Appendix A

Table 4: Traffic Data of Portuguese news media

News media	Direct Traffic (N)	Direct Traffic (%)	Social Media Traffic (N)	Social Media Traffic (%)	Search Traffic (N)	Search Traffic (%)	Referrals Traffic (N)	Referrals Traffic (%)	Others Traffic (N)	Others Traffic (%)
A Bola	22.801.350	64,32%	1.811.488	5,11%	9.851.516	27,79%	776.352	2,19%	212.699	0,59%
Record	19.565.877	62,26%	4.431.077	14,10%	6.429.776	20,46%	908.214	2,89%	94.278	0,29%
Correio da Manhã	9.646.321	47,72%	3.436.451	17,00%	6.201.784	30,68%	897.520	4,44%	32.343	0,16%
Notícias ao minuto	6.887.527	35,52%	4.581.989	23,63%	7.275.338	37,52%	577.839	2,98%	69.806	0,35%
Público	7.949.252	42,65%	3.992.332	21,42%	5.710.787	30,64%	892.776	4,79%	93.192	0,50%
Jornal de Notícias	8.638.829	47,60%	3.842.101	21,17%	4.898.361	26,99%	724.137	3,99%	45.372	0,25%
O Jogo	8.590.842	52,10%	2.953.205	17,91%	4.194.837	25,44%	704.086	4,27%	47.819	0,28%
Expresso	5.927.383	37,41%	4.748.561	29,97%	4.674.092	29,50%	473.747	2,99%	20.598	0,13%
CNN Portugal	5.807.437	44,50%	2.937.650	22,51%	4.005.174	30,69%	284.499	2,18%	15.661	0,12%
Observador	4.875.245	38,52%	2.309.793	18,25%	5.061.294	39,99%	363.239	2,87%	46.829	0,37%
Flash	4.307.341	36,86%	2.179.379	18,65%	2.221.447	19,01%	2.969.331	25,41%	7.011	0,07%
RTP	3.265.390	34,57%	903.012	9,56%	5.018.518	53,13%	212.529	2,25%	45.340	0,49%
Diário de Notícias	3.504.930	37,20%	1.455.676	15,45%	3.969.427	42,13%	473.919	5,03%	17.902	0,19%
Nit - New In Town	659.226	7,68%	3.921.019	45,68%	3.904.710	45,49%	44.635	0,52%	53.219	0,63%
Zerozero.pt	3.487.463	43,15%	825.191	10,21%	3.590.107	44,42%	158.411	1,96%	21.822	0,26%
Sic notícias	1.596.331	25,83%	2.254.517	36,48%	2.148.836	34,77%	171.808	2,78%	8.652	0,14%
Mais Futebol	2.036.338	40,29%	1.156.907	22,89%	1.701.244	33,66%	147.077	2,91%	12.636	0,25%
SIC	1.341.483	28,86%	1.083.505	23,31%	2.084.737	44,85%	102.726	2,21%	35.791	0,77%
Jornal de Negócios	1.845.566	41,00%	476.696	10,59%	1.849.617	41,09%	270.983	6,02%	58.518	1,30%
ECO – Economia Online	1.719.157	43,07%	544.047	13,63%	1.073.725	26,90%	643.437	16,12%	11.176	0,28%
TVI	701.678	19,00%	1.398.186	37,86%	1.477.955	40,02%	113.007	3,06%	2.216	0,06%
Sol	1.110.093	35,54%	576.286	18,45%	756.825	24,23%	673.427	21,56%	7.184	0,22%
Ekonomista	727.561	24,73%	273.019	9,28%	1.925.844	65,46%	5.590	0,19%	10.003	0,34%

News media	Direct Traffic (N)	Direct Traffic (%)	Social Media Traffic (N)	Social Media Traffic (%)	Search Traffic (N)	Search Traffic (%)	Referrals Traffic (N)	Referrals Traffic (%)	Others Traffic (N)	Others Traffic (%)
Rádio Hiper FM	221.556	79%	2.458.163	86,43%	125.141	4,40%	38.395	1,35%	853	0,03%
TSF	893.311	33,49%	604.432	22,66%	909.849	34,11%	252.336	9,46%	7.469	0,28%
Sábado	890.739	36,32%	397.546	16,21%	322.010	13,13%	838.992	34,21%	2.943	0,13%
Visão	816.224	34,86%	356.132	15,21%	660.519	28,21%	504.345	21,54%	4.215	0,18%
Correio da Manhã TV	638.289	29,26%	503.912	23,10%	443.486	20,33%	594.006	27,23%	1.963	0,08%
Nova Gente	410.354	19,20%	893.161	41,79%	767.704	35,92%	57.706	2,70%	8.335	0,39%
RR – Rádio Renascença	566.398	28,27%	428.956	21,41%	938.655	46,85%	65.315	3,26%	4.207	0,21%
Mean	**4.380.983**	**36,0%**	**1.924.480**	**23,00%**	**3.139.777**	**33,26%**	**498.013**	**7,45%**	**33.335**	**0,31%**

Source: SimilarWeb (2022)

Appendix B

Table 5: Traffic Data of Portuguese news media in Mobile and Desktop Comparison

News media	Mobile Traffic	Mobile Traffic (%)	Desktop Traffic N	Desktop Traffic (%)
A Bola	22.726.905	64,11%	12.722.955	35,89%
Record	22.761.910	72,43%	8.664.170	27,57%
Correio da Manhã	16.282.715	80,55%	3.931.705	19,45%
Notícias ao minuto	16.767.017	86,47%	2.623.543	13,53%
Público	15.229.388	81,71%	3.408.952	18,29%
Jornal de Notícias	14.513.595	79,97%	3.635.205	20,03%
O Jogo	13.620.030	82,60%	2.869.110	17,40%
Expresso	13.630.920	86,03%	2.213.460	13,97%
CNN Portugal	11.697.091	89,63%	1.353.329	10,37%
Observador	10.404.826	82,21%	2.251.574	17,79%
Flash	10.832.624	92,70%	853.054	7,30%
RTP	5.944.200	62,93%	3.501.534	37,07%
Diário de Notícias	7.727.805	82,02%	1.694.049	17,98%
Nit - New In Town	7.557.060	88,04%	1.026.606	11,96%
Zerozero.pt	5.603.380	69,33%	2.486.889	30,67%
Sic notícias	4.941.643	79,96%	1.238.501	20,04%
Mais Futebol	3.850.797	76,19%	1.203.405	23,81%
SIC	3.773.908	81,19%	874.334	18,81%
Jornal de Negócios	2.941.652	65,35%	1.559.728	34,65%
ECO – Economia Online	2.837.188	71,08%	1.154.354	28,92%

News media	Mobile Traffic	Mobile Traffic (%)	Desktop Traffic N	Desktop Traffic (%)
TVI	3.169.369	85,82%	523.673	14,18%
Sol	2.657.790	85,09%	465.714	14,91%
Ekonomista	2.097.069	71,28%	844.947	28,72%
Rádio Hiper FM	2.537.229	89,21%	306.879	10,79%
TSF	2.140.319	80,24%	527.077	19,76%
Sábado	1.868.051	76,17%	584.425	23,83%
Visão	1.713.461	73,18%	627.973	26,82%
Correio da Manhã TV	1.753.222	80,37%	428.216	19,63%
Nova Gente	1.982.309	92,75%	154.951	7,25%
RR – Rádio Renascença	1.632.077	81,46%	371.455	18,54%
Mean	**7.839.852**	**79,7%**	**2.134.194**	**20,3%**

Source: SimilarWeb (2022)

Appendix C

Table 6: Relative Traffic Data of Portuguese news media in Mobile and Desktop

News media	Direct Mobile Traffic (%)	Social Media Mobile Traffic (%)	Search Mobile Traffic (%)	Refferals Mobile Traffic (%)	Others Mobile Traffic (%)	Direct Desktop Taffic (%)	Social Media Desktop Traffic (%)	Search Desktop Traffic (%)	Refferals Desktop Traffic (%)	Others Desktop Traffic (%)
A Bola	53,83%	6,17%	36,79%	3,19%	0,03%	82,91%	3,24%	11,86%	0,43%	1,56%
Record	55,18%	16,60%	24,45%	3,74%	0,04%	80,84%	7,53%	9,99%	0,69%	0,94%
Correio da Manhã	60,41%	9,29%	25,39%	4,26%	0,65%	60,41%	9,29%	25,29%	4,26%	0,64%
Notícias ao minuto	34,50%	24,98%	37,31%	3,20%	0,03%	42,01%	15,06%	38,90%	1,57%	2,46%
Público	40,83%	23,42%	30,97%	4,75%	0,02%	50,74%	12,50%	29,18%	4,98%	2,60%
Jornal de Notícias	44,39%	23,33%	28,10%	4,16%	0,02%	60,39%	12,55%	22,58%	3,31%	1,17%
O Jogo	48,79%	19,67%	27,05%	4,47%	0,04%	67,79%	9,57%	17,84%	3,34%	1,45%
Expresso	35,69%	31,78%	29,32%	3,19%	0,02%	47,92%	18,87%	30,64%	1,78%	0,80%
CNN Portugal	45,17%	23,25%	29,57%	1,95%	0,06%	38,80%	16,16%	40,28%	4,15%	0,61%
Observador	36,80%	19,96%	39,98%	3,17%	0,10%	46,43%	10,40%	40,01%	1,51%	1,65%
Flash	39,11%	19,43%	18,31%	23,11%	0,03%	8,30%	8,75%	27,86%	54,61%	0,48%
RTP	28,92%	11,28%	57,22%	2,57%	0,01%	44,16%	6,66%	46,19%	1,71%	1,28%
Diário de Notícias	41,43%	7,88%	43,68%	6,08%	0,94%	41,43%	7,88%	43,68%	6,08%	0,94%
Nit - New In Town	6,60%	46,86%	46,03%	0,49%	0,02%	15,65%	37,03%	41,58%	0,75%	5,00%
Zerozero.pt	37,55%	11,57%	48,38%	2,46%	0,03%	55,70%	7,16%	35,53%	0,83%	0,78%
Sic notícias	25,20%	39,11%	32,80%	2,87%	0,01%	28,32%	26,06%	42,57%	2,41%	0,64%
Mais Futebol	35,74%	24,89%	36,33%	3,01%	0,04%	54,74%	16,53%	25,19%	2,63%	0,91%
SIC	26,87%	24,77%	45,41%	2,31%	0,65%	37,41%	17,02%	42,48%	1,77%	1,32%
Jornal de Negócios	39,87%	13,11%	41,44%	5,56%	0,01%	43,11%	5,86%	40,45%	6,87%	3,72%
ECO –	50,73%	14,52%	23,61%	11,09%	0,06%	24,69%	11,50%	34,78%	28,21%	0,82%

News media	**Direct Mobile Traffic (%)**	**Social Media Mobile Traffic (%)**	**Search Mobile Traffic (%)**	**Refferals Mobile Traffic (%)**	**Others Mobile Traffic (%)**	**Direct Desktop Taffic (%)**	**Social Media Desktop Traffic (%)**	**Search Desktop Traffic (%)**	**Refferals Desktop Traffic (%)**	**Others Desktop Traffic (%)**
Economia Online										
TVI	18,54%	39,26%	39,79%	2,39%	0,03%	21,77%	29,47%	41,40%	7,11%	0,14%
Sol	38,76%	20,00%	23,36%	17,86%	0,02%	17,92%	10,03%	28,99%	41,72%	1,33%
Ekonomista	30,04%	9,79%	60,11%	0,05%	0,01%	11,58%	8,01%	78,71%	0,55%	1,14%
Rádio Hiper FM	8,07%	88,29%	2,16%	1,44%	0,03%	5,50%	71,42%	22,45%	0,59%	0,04%
TSF	34,16%	24,91%	32,94%	7,95%	0,04%	30,77%	13,55%	38,82%	15,61%	1,24%
Sábado	43,79%	18,58%	11,77%	25,81%	0,04%	12,58%	8,72%	17,47%	60,84%	0,40%
Visão	39,05%	17,61%	26,99%	16,31%	0,04%	24,05%	9,06%	31,28%	35,04%	0,56%
Correio da Manhã TV	33,60%	24,86%	20,33%	21,16%	0,06%	12,05%	16,11%	20,12%	51,52%	0,20%
Nova Gente	19,79%	43,21%	34,22%	2,76%	0,01%	11,61%	23,91%	57,33%	1,95%	5,19%
RR – Rádio Renascença	28,27%	23,59%	44,73%	3,39%	0,02%	28,25%	12,47%	55,55%	2,73%	1,00%
Mean	**36,06%**	**24,07%**	**33,28%**	**6,49%**	**0,10%**	**36,93%**	**15,41%**	**34,63%**	**11,65%**	**1,37%**

Source: SimilarWeb (2022)