ARTICLE

The Spread of News Deserts in Chile

The Case of the Aysén Region

Carlos Rodríguez-Urra,* Magdalena Trillo-Domínguez,** Víctor Herrero-Solana***

- * Social Sciences Phd Program, University of Granada, SPAIN E-mail: carlosrod[at]correo.ugr.es
- ** Unit for Computational Humanities and Social Sciences (U-CHASS), University of Granada, SPAIN E-mail: mtrillo[at]ugr.es
- *** Unit for Computational Humanities and Social Sciences (U-CHASS), University of Granada, SPAIN E-mail: victorhs[at]ugr.es

News deserts are areas where the local community lacks reliable media outlets such as newspapers in the context of a global crisis in the press that weakens local civil society through its effect on democracy, social cohesion, and identity. This study focuses on the remote Aysén region of Chile which despite being territorially the third largest region in the country has the smallest population (108,306). This research employs a triangular methodology, incorporating a quantitative dimension using public data with systematic searches, a regional news desert media map and a social network metrics analysis, alongside qualitative methods such as a case study on the territory with semi-structured interviews and non-participant observation conducted between January and February 2023. The findings indicate that 20% of Aysén is at significant risk of becoming a news desert while 40% is already classified as such. The limited availability of diverse sources of information, the lack of adequate digital infrastructure, and the economic challenges faced by small media outlets are among the key contributing factors. Furthermore, the study posits potential solutions, including the establishment of collaborative networks and the advancement of

Address for correspondence: Víctor Herrero-Solana, e-mail: victorhs[at]ugr.es.

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mobile journalism, with the aim of reinforcing local identity and public institution strategies. Although the insights presented are primarily focused on the Aysén region, they could be extended to other Latin American and global regions facing comparable media vulnerabilities.

Keywords: Chile, news deserts, local journalism, hyperlocal journalism, regional journalism

Introduction

The study of news deserts is emerging globally as a necessary endeavour for both academia and the journalistic industry to understand the repercussions of the retreat and absence of media in regional, local, and hyperlocal areas. An increasing number of researchers have been addressing the issue with geographic, temporal, or media content approaches (Gulyas et al., 2023; Negreira-Rey et al., 2023; Lins da Silva & Pimenta, 2020; Napoli et al., 2019).

Local journalism faces ongoing challenges due to economic pressures, local politics (Nielsen, 2015), and territorial dynamics such as population shifts from rural to urban areas (Negreira-Rey et al., 2023; Galletero-Campos et al., 2024). Technological advancements have disrupted the traditional economic model of the media industry, creating a constant state of flux (Ferrucci & Alaimo, 2020). Changes in digital advertising strategies (Harte et al., 2018) have aggravated the crisis in the press, causing staff cuts and reducing the infrastructure to operate at minimum capacity (Rackaway, 2024). This crisis has been further aggravated by fragmenting audiences and declining trust in the media (Adornato, 2022; Newman et al., 2023; López-García et al., 2024) within an increasingly complex platform environment (Newman et al., 2023, p. 11). Abernathy (2020, p. 56) describes recent years as a "pivotal moment" for local news organisations struggling to adapt to new economic and digital realities. The global news industry has faced recurring economic crises (Suenzo et al., 2020), intensified by the Covid–19 pandemic, which accelerated cost-cutting, layoffs, and the downsizing or closure of print editions due to rising costs and declining advertising revenues (Newman et al., 2023, p. 17).

As a direct consequence of this weakening and withdrawal of the media, there are now media-free zones at local levels, a phenomenon referred to as *news desert*. Gulyas et al. (2023) argue that the definition of news desert varies according to setting and context, but that it "is a powerful concept that can speak to academic and non-academic audiences" (p. 287). There are a variety of approaches to studying news deserts. Abernathy (2016) has been a pioneer in their study, focusing on the identification of areas without local newspapers in the United States and warning of the consequences for the quality of the nation's democracy. For Smethers et al. (2021), newspapers are also essential to the local economies of communities, and thus affect social practices. Downman and Murray (2020) argue that the decline of local media is part of the broader crisis in journalism and has led to communities with an increased demand for local news (p. 255). It is crucial to recognise the role of formal media outlets as a reliable source of information, particularly given the spread of misinformation on digital platforms and the impact that has at a local level (López-García et al., 2024) within a highly polarised context (Mellado & Cruz, 2024; Newman et al., 2023), exacerbated by pseudo-media that imitate mainstream outlets while disregarding journalistic standards and employing charged language (Garde-Eransus & Salaverría, 2024).

Rodríguez-Urra et al. (2024) have explored the links between hyperlocal journalism and news deserts in local journalism, highlighting challenges in audience engagement, citizen journalism, and business models. According to Abernathy (2020), strong local journalism generates trust in democratic institutions and builds strong communities. However, this is precisely the challenge in a multi-screen context and online informational spaces because "the digital deluge hardly spills over into local news" (2016, p. 38) and national content overshadows local content with *infotainment* or hard news.

Structural issues like low population density and high distribution costs hinder hyperlocal media, exacerbating the growth of news deserts (Downman & Murray, 2020), especially when governments do not implement reforms to improve independent local media ecologies to enhance social cohesion, as they did in Castilla-La Mancha, Spain (Galletero-Campos et al., 2024). Ferrucci and Alaimo (2020) highlight the need for a collaborative dynamic between communities and journalism to support democracy.

The lack of pluralism is a significant issue (Rodríguez-Urra et al., 2024), as Nielsen (2015) illustrates, local information is devalued when it is constructed solely from sources tied to political parties, local governments, or businesses. This situation exacerbates the issue of news deserts, which undermine civic coexistence and foster environments ripe for manipulation, populism, and polarisation (Trillo-Domínguez, 2023). The media has a crucial role in promoting civic participation, particularly at the local level, where it is essential for building and protecting public spheres (Nah & Chung, 2020). The importance of information pluralism in combating news deserts is further emphasised by other scholars (Rodríguez-Urra et al., 2024).

These deserts affect "different types of communities to varying degrees" (Napoli et al., 2019, p. 1028) with groups composed of historically marginalised minorities (Trillo-Domínguez, 2023) and those lacking digital skills being the most vulnerable. It is crucial to remember that the relationship between local media and local residents is indivisible because it strengthens local identity and interprets national and global realities within the scales of proximity (Hess & Waller, 2017).

The emergence of Covid–19 has brought about a re-evaluation of local journalism and demonstrated the vital role of community cohesion, a situation fostered by journalistic innovation in practice, and closer engagement with audiences (Amigo, 2023; Wahl-Jorgensen et al., 2022). This is reinforced when journalistic practice is linked to place, taking into account the construction of an identity that operates in local affairs (Hess & Waller, 2017). Consequently, audience knowledge is key to generating quality content to build trust (Adornato, 2022, p. 63) from reciprocity with communities, an aspect that is very much present in hyperlocal producers (Harte et al., 2018, p. 125).

The digital sphere has enabled transnational journalistic collaborations, especially in data-driven investigations in high-profile multinational projects, as Jenkins and Graves (2022) point out, they also identify three collaboration models in Europe: a *coopera-tive model* for regional newspapers on non-competitive issues; a *contractor model* with

specialised organisations for specific projects; and an *NGO model* where a non-profit coordinate shares data-driven research. In Latin America, collaborations also establish networks among journalists in remote areas to promote investigative and professional journalism (Mesquita, 2023, p. 37). Citizen collaboration strengthens journalism in regions at risk of becoming news deserts, as exemplified by *The Colorado Sun* in the USA, which fosters *two-way conversations* that extend beyond traditional and social media journalism practice (Ferrucci & Alaimo, 2020, p. 501).

The significance of regional, local, and hyperlocal journalism has been reinforced by financial support initiatives in countries such as the United Kingdom (Heawood, 2022; Cheverton, 2022) and Sweden (Newman et al., 2023). Public funding can bolster even smaller media outlets (Tenor, 2018). The tension between conventional and digital media highlights the impact of technology on journalism, particularly the internet's role in expanding the sources for journalists (Hess & Waller, 2017, p. 96). The rise of digital media has been seen as a solution to news deserts (Nygren, 2019; Smethers et al., 2021), and is driven by low operational costs (Nielsen, 2015, p. 7), but even their survival remains challenging in regions that are struggling economically, seemingly hitting everyone equally because areas with no news presence have been expanding unstoppably, even in densely populated areas (Rackaway, 2024), prompting the formation of associations like the Lions International in the USA to support long-term financial sustainability or initiatives such as the GNI Startups Lab Argentina for the creation of media in news desert areas.

Digital formats have thus not yet managed to strengthen fully, often resulting in *ephemeral journalism* with a short lifespan (Salaverría et al., 2022, p. 10) at least in Latin America, a territory also marked by restructuring and the closure of press offices (Suenzo et al., 2020).

In this geographic context, local journalism faces challenges due to the "hegemony of large commercial media conglomerates" (Giovani-Vieira, 2021, p. 175), while *hyperlocal journalism* remains under-recognised (Rodríguez-Urra et al., 2023b).

Despite these challenges, *digital natives* have been considered in studies of news deserts (Kizilkaya, 2021; Lins da Silva & Pimenta, 2020), and these virtual spaces, including social platforms, were mentioned previously by Ferrier et al. (2016) in their proposal regarding media deserts and their layered media infrastructure.

Online spaces are increasingly central to proximity journalism, with "young journalists skilled in mobile and social media" (Adornato, 2022, p. 59) reflecting a new youth-oriented digital layer focused on internet access. This trend has led to a "suburbanization of the sphere" (Midões, 2021, p. 9), where easier and faster access to media is demanded and achieved.

Concrete precedents in the analysis of news deserts include the work of Lins da Silva and Pimenta (2020) in Latin American academia, and studies driven by private initiatives (FOPEA, 2021; IPYS, 2023) that reflect the growing concern in this emerging field. Additionally, studies have warned that one third of the newspapers functioning in the United States in 2005 will disappear by 2024 (Abernathy & Stonebely, 2023). In Spain, an initial map of news deserts (Negreira-Rey et al., 2023) already exists from the perspective of depopulation (*España vaciada* [Spain emptied]). However, according to Rodríguez-Urra et al., (2024) the Anglo-Saxon sphere currently leads global research in this area.

Context

In this study, we focus on the Aysén region of Chile, often considered remote, underdeveloped (Núñez-González & Aliste-Almuna, 2014), and poorly integrated (Pressacco et al., 2017) due to Chile's historically centralised technocratic administrative structure (Reyes-Herrera & Rodríguez-Torrent, 2015). The region's low population density, harsh climate and rugged terrain create a challenging geographical space that is difficult to traverse, inhabit, and connect (Durston et al., 2016, p. 225).

In the past decade, Aysén has witnessed significant social protests rooted in longstanding infrastructure and social service deficiencies (Contreras, 2022, p. 4). These protests reflect the grievances of *neglected citizens* demanding lower living costs, resource regionalisation, and infrastructure improvements (Pressacco et al., 2017, p. 168). In terms of the media, community radio stations played a crucial role in the region facing its imperfect democracy (Rodríguez-Ortiz, 2016, p. 146), with *Radio Santa María* acting as an important unifier and, inadvertently, as a spokesperson for the community in sharing news overlooked by the national media during the conflict (Observatorio Cultural, 2022). The *Patagonia sin Represas* protests opposed the extractivist export model exemplified by the HidroAysén dam project in defence of environmental causes (Reyes-Herrera & Rodríguez-Torrent, 2015).

In this context, the region also holds interest for social researchers, as "horizontal networks that reinforced community collective actions" have been established (Durston et al., 2016, p. 229). *Radio Madipro* (Madre de la Divina Providencia of Vicariate Apostolic of Aysén), founded in the last century with the mission of Catholic evangelisation, continues to promote community cohesion in remote areas (Osorio, 2020). Additionally, a part of the region's idiosyncrasy lies in cultural traits shared with Argentine Patagonia due to historical migration (Carrasco-Urrutia, 2021; Pressacco et al., 2017).

While Chile has historically excelled in Latin America in terms of digital connectivity and innovation (Rodríguez-Urra et al., 2023a), the Aysén region lags behind other territories, as evidenced by nPerf¹ data exploration across the country. It should be noted, however, that the government's current Fibra Optica Austral² project aims to improve Internet coverage and access in the area.

Chile's media lacks audience engagement, even in urban community radio, due to the Eurocentric homogenisation of university education in journalism known as *reporterística* (Araya, 2014). The national media landscape is dominated by a *press duopoly* in *El Mercurio* and *COPESA* (Dodds, 2017; Newman et al., 2023; Rodríguez-Urra et al., 2023b) with 90% of newspapers leaning to the right (Mellado & Scherman, 2020, p. 5). This duopoly controls most regional titles through extensive newspaper acquisitions, and it absorbs the bulk of advertising revenue (Mönckeberg, 2011).

Chile's media system is one of the most concentrated in Latin America, characterised by private ownership and commercially driven content (Mellado & Cruz, 2024, p. 5). This centralisation has limited public regional representation (Arriagada et al., 2015)

¹ Mapa de cobertura 3G / 4G / 5G de Entel Movil en Puerto-Aisen, Chile. Nperf.com.

² Fibra Optica Austral: fibraopticaaustral.cl.

and restricted coverage of local social movements in the national media (Bonifaz, 2016), although community media have managed to overcome these barriers (Rodríguez-Ortiz, 2016). This concentration of media ownership has marginalised regional, local, and hyperlocal media studies among Chilean researchers (Rodríguez-Urra et al., 2023b).

Regional and local television in Chile faces sustainability threats, despite a variety of ownership models (Sáez, 2024, p. 109). Community radio stations, essential for Chilean democracy, struggle against commercial dominance and regulatory obstacles (Rodríguez-Ortiz, 2016). Journalism outside Chile's capital city, Santiago, is recognised for its *degrees of prowess* (Bonifaz, 2016), yet there is a call for "proactive construction to reconnect citizens with professional journalism" (Labrín, 2023, p. 121). Criticisms of State planning highlight the barriers to media diversity and pluralism that constrain local voices (Bonifaz, 2016).

Research objectives

Aysén deserves a closer look, along with the Magallanes region, as a unique case in Chile in the absence of the national press duopoly. Given the region's particularities, which result from its social idiosyncrasy and remoteness and the growing concern about news deserts, we find the development of a pilot research project in the area pertinent that can be replicated at other geographical locations and social scales. As a starting point, we formulated the following research questions as the foundation for our investigation into the Aysén region, allowing us to explore the dynamics of information accessibility and the role of media in addressing this critical issue:

RQ1. Is the construction of a regional media map using open data feasible? **RQ2.** What economic, technological, and sociocultural situations can we identify as triggering factors for news deserts in the region?

RQ3. Can media outlets mitigate the expansion of news deserts?

Our main objective is the construction of a media map of the Aysén region reflecting the growth of news deserts. Derived from this, our secondary objectives include:

- a) establishing a methodology for identifying news deserts that can be extrapolated to other Latin American and global contexts
- b) analysing the specific economic, technological, and sociocultural factors that contribute to media abandonment in the Aysén region
- c) understanding the routines, singularities, motivations, and constraints of journalistic activity through contributions from professionals working in this unique Chilean region
- d) proposing a constructive roadmap of possible actions and measures to help curb and reverse the situation

Materials and methods

We propose a triangular methodological approach that begins with an initial quantitative phase based on constructing a dataset³ (Rodríguez-Urra, 2024) of media organisations in the territory, considering their impact on social networks. Additionally, we construct a media map to identify news deserts, in agreement with Gulyas et al. (2023), in order to approach the representation of the situation of a territory. To achieve this, we conducted an extensive search for Chilean media organisations, aggregating them in different formats:

- a) Regional Association of Open Signal Television Channels in Chile (ARCATEL): Comprising 22 regional television channels, ARCATEL represents them at the central and national political level.
- b) National Press Association (ANP): An organisation that brings together major Chilean print media, both nationally and regionally.

During this process, we encountered some inconsistencies. We were unable to obtain a list of radio stations affiliated with the Association of Chilean Broadcasters (ARCHI), nor could we communicate with the institution. Regarding digital media, there were limitations due to the absence of an entity that aggregates them or provides open reports on digital audiences, a scenario previously highlighted by Rodríguez-Urra (2023b).

Due to these limitations, we expanded our search to other data sources belonging to the State, including regulatory bodies and archives:

- a) National Library (Biblioteca Nacional, BN) and Transparency Portal (Portal de Transparencia): Both institutions use the same registry of regional media. The BN receives voluntary registration requests, which are then forwarded to the Transparency Portal and consolidated at the Registry of Regional Media.
- b) Sub-secretariat of Telecommunications (Subsecretaría de Telecomunicaciones de Chile, SUBTEL): This entity contains records of registered and approved media for operating sound broadcasting services, community radios, and open television services.
- c) Ministry General Secretariat of the Presidency (Secretaría de Comunicaciones del Gobierno de Chile, SECOM): Administers the *Fondo de Medios de Comunicación Social* with calls for journalistic projects from regional media. It falls under Article 20 of the Budget Law, which requires Ministries and Services to allocate at least 40% of the item to media that are not part of conglomerates, holdings, or media chains.
- d) National Cultural Heritage Service (Servicio Nacional de Patrimonio Cultural): The *Bajo la Lupa* project repository contains research conducted to study cultural collections and local identities.
- e) Electoral Service (SERVEL): This institution monitors, supervises, and manages electoral processes. It is possible to identify the media outlets that are authorised to broadcast electoral propaganda from its reports.

³ Dataset Región de Aysén medios (septiembre 2022).

To expand our search, we turned to Google to identify local and hyperlocal news spaces with periodic publication. Here, we used a systematic search proposed by Negreira-Rey et al. (2020), a method replicated by Rodríguez-Urra (2023a) to create a Hispanic-American media map, considering scientific production hosted in major global reference databases. In this case, we adapted and executed the following equations: "news OR media AND (locality); newspaper OR digital newspaper AND (locality); diario AND (locality); radio AND (locality); television OR TV AND (locality); Canal AND (locality)".⁴

While Negreira-Rey et al. (2020) only considered territories with over 20,000 inhabitants for the Spanish context, we did not set population limits due to the low population density of the territory. We excluded media whose addresses or radio/television transmission stations were located in regions outside Aysén. For social media spaces, we considered those with digital presence and a website. We excluded media with non-journalistic focuses, such as exclusively religious, sports, educational, tourist, or environmental media.

The dataset is openly available for download on Zenodo⁵ and includes a total of 63 identified media outlets distributed across the ten municipalities that make up the Aysén region.

The media outlets on the final map were subjected to the social impact criterion which corresponds to September 2022. This indicator from Rodríguez-Urra (2023b) is composed of data from Twitter (now X), due to its widespread informative use in its early years (Herrero-Solana & Trillo-Domínguez, 2014), and whose followers were counted, also Facebook from its fan pages. In particular, this social network has a "more consolidated and broader presence in age groups and with greater transversality in all countries" (Rodríguez-Urra et al., 2023b).

The data are visualised using the open-source software SCImago Graphica, a tool that allows us to create graphs that combine information "with a high level of expressiveness and a user-friendly interface" (Hassan-Montero et al., 2022, p. 2). This exercise allows us to identify the news spaces that receive the most attention from their audiences on social platforms.

This data is also useful in the qualitative methodology, as we know which media are better positioned in the region. We assume that these are relevant institutions in terms of information, so it is a priority to approach them to understand their views and actions in order to understand the factors that cause the emergence of deserts and potentially fight against them.

To conclude the quantitative aspect, we have constructed figures that show the distribution of media formats in cities, as well as the map of the situation of deserts. In doing so, we rely on the *media ecology and content-focused* approach proposed by Gulyas et al. (2023) that examines the availability of media supply in a subnational territory. This is added to the population projected according to the Library of the National Congress of Chile (BCN).

⁴ For each space (locality), the toponym of the commune of the Aysén Region was entered.

⁵ Dataset Región de Aysén medios (septiembre 2022).

Commune	Projected population 2023 (BCN)	Number of media outlets	Sources by population (1,000 per capita)	
Cisnes	5,865	8	1.36	
Guaitecas	1,608	4	2.49	
Aysén	25,180	13	0.52	
Cochrane	3,731	3	0.80	
O'Higgins	672	2	2.98	
Tortel	582	1	1.71	
Coyhaique	61,885	19	0.30	
Lago Verde	915	3	1.09	
Chile Chico	5,157	6	1.16	
Río Ibáñez	2,711	4	1.48	

Table 1: Data for the Aysén region

Source: Compiled by the authors.

Table 1 presents data on the projected 2023 population and the number of identified media outlets across communes in the Aysén region of Chile. It can be observed that the number of media outlets correlates with population size, allowing us to infer a higher potential social metric in more densely populated areas. We use this background to focus our attention on the areas with the most journalistic activity for the qualitative aspect of our research. To better understand news deserts, it is crucial to further analyse these data by disaggregating media ownership – whether municipal or independent – to assess the plurality of information in the region.

We also consider news deserts to be territories in which only media outlets dependent on local municipalities operate (Nielsen, 2015; Abernathy, 2020; Rodríguez-Urra et al., 2024). In such cases, institutional dependence prevails, and a minimum level of informational plurality is not guaranteed. Considering the Aysén reality, we examine the media landscape, taking into account the absence of newspapers (Abernathy, 2016), as well as radio stations, television stations, and digital media, following the frameworks proposed by Ferrier et al. (2016), Lins da Silva and Pimenta (2020) and Kizilkaya (2021).

The number of identified media outlets correlates with the population, with a predominance of traditional formats. These outlets are part of a complex and unique scenario shaped by geographical characteristics. Consequently, we propose a new framework for categorising news deserts:

- Low Risk: Assured pluralism, diverse formats, and a medium to high number of media outlets
- Moderate Risk: Assured pluralism, but lacking format diversity, with a medium to high number of media outlets
- High Risk: Unassured pluralism and minimal media diversity
- Desert: Non-existent pluralism and/or an extremely low number of media outlets

Media outlet	Туре	Facebook	Twitter(X)	Social impact	Commune
Santa María	Radio	49,000	28,000	High	Coyhaique
Ventisqueros	Radio	2,998	6,765	Medium	Coyhaique
Santa María	TV	34,000	6,588	High	Coyhaique
El Divisadero	Printed	34,662	13,700	High	Coyhaique
Vía Austral	Digital native	114,775	5,483	High	Coyhaique
Tehuelche Noticias	Digital native	10,341	2,554	Medium	Coyhaique
Milenaria	Radio	8,900	550	Medium	Coyhaique
Las Nieves	Radio	20,804	7,324	Medium	Aysén
Aysén TV	TV	6,763	128	Medium	Aysén
Panorámica Informativa	Digital native	10,000	70	Medium	Aysén
ComunicAysén	Digital native	4,283	60	Medium	Aysén

Table 2: List of media outlets in the region and metrics

Source: Compiled by the authors.

Subsequently, we incorporated qualitative research, including non-participant observation in the region and conducting semi-structured interviews and case studies. We selected a series of media outlets from Puerto Aysén and Coyhaique, including those with high social impact (over 25,000 followers combined on Facebook and Twitter) across print, radio, television, and digital platforms, as well as medium-sized outlets (between 5,000 and 25,000 followers). Based on these parameters, we contacted and collaborated with willing media outlets for the research.

After analysing the metrics and assessing their interest in participating, eleven media outlets ultimately took part in the investigation:

Radio and Television Santa María, El Divisadero, and *Vía Austral* identified as media outlets with high social impact, and were approached through non-participant observation and semi-structured interviews. For other media outlets only interviews were conducted.

Fieldwork was carried out with the flexibility inherent to such initiatives (Jensen, 2014; Taylor & Bogdan, 2009), adjusting timelines to the dynamics and characteristics of each newsroom. The individuals participating in the research are listed and completed the requisite participation form model for the investigation.

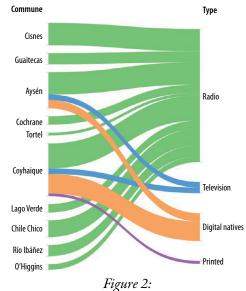
Results

Characteristics of the media in the Aysén region

As an initial approach to the phenomenon of news deserts, we present the following map of Aysén and a graph depicting the distribution of audiences based on media types and geographical zones.



Figure 1: The Aysén Region in Chile and administrative division by communes Note: Triangular qualitative methodology applied to red dots on the map, the main cities of the territory. Source: Compiled by the authors based on Mapa loc Aisén.svg, Wikipedia.



Typology of media in the various communes of the Aysén region Source: Compiled by the authors.

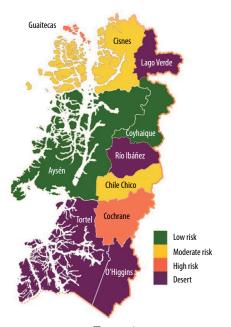


Figure 3: Risk of expansion of news deserts in the Aysén region Source: Compiled by the authors.

The 63 catalogued media outlets are primarily concentrated in the cities of Coyhaique (the regional capital) and Puerto Aysén. Radio dominates the region (48 outlets) and is present in all communes, including remote areas with low population density. Radio stations constitute 76% of the total, followed by digital natives (10 outlets, 16%), four television channels (6%), and one print outlet (2%).

The analysis of the media presence in the Aysén Region in Figure 3 shows that two out of ten communes (20%) are at low risk of being declared news deserts, and these are located in the main cities. Additionally, 20% of the territory is at moderate risk, another 20% at high risk, and 40% can already be identified as a news desert.

Lago Verde, Río Ibáñez, Tortel, and O'Higgins are classified as news deserts⁶ due to the presence of municipally administered radio stations. In cases of high risk, there is a slight increase in media outlets lacking diversity (Cochrane), and while there is a certain degree of equilibrium between municipal and independent radio stations in Guaitecas, the situation in this commune was historically precarious,⁷ along with not having other types of media.

⁶ In the southern municipalities, there has been a history of high volatility in ownership, subject to changes in local government, as well as informal and autonomous administrations, resulting in the intermittent functioning of local media.

⁷ Two decades ago, the former mayor of the municipality terminated the electricity supply to the *Estrella del Mar* radio station due to differences in ideological outlook. The case was subsequently referred to the Inter-American Commission on Human Rights (IACHR), which delivered a ruling in favour of the affected director of the radio station. See more at www.oas.org/es/cidh/decisiones/2016/CHPU12799ES.pdf.

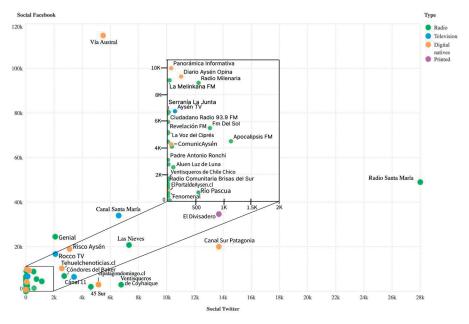


Figure 4: Metrics analysis between Facebook and Twitter Source: Compiled by the authors.

In Figure 4, we present a graph that illustrates the metrics comparison between Facebook and Twitter (X). Key observations are that the best-positioned medium in the region is the digital outlet *Via Austral* which stands out in terms of followers on Facebook. Another well-situated media outlet is *Radio Santa María* with outstanding activity on Twitter. Following closely, the newspaper *El Divisadero* exhibits notable metrics on both social networks. The *Television Santa María* channel, an affiliate of the aforementioned radio station, also holds a prominent position. We attribute Vía Austral's leadership on Facebook to its consistent activity on the platform since its foundation in 2015, during the widespread adoption of Facebook. Meanwhile, *Santa María* has strengthened its presence on Twitter, positioning itself as the region's primary conventional media outlet. This boost is also due to its involvement in social causes in the region over the last decade, as well as a network of stations under agreement within Madipro radio stations. These leading media outlets are based in Coyhaique, the capital city with the highest population in the region.

Reference media profiles from non-participant observation

Non-participant observation was conducted between January and February 2023. During this period, our research focused on the media outlets *El Divisadero, Radio Santa María*,

Televisión Santa María, and *Via Austral* – representatives of each typology due to their high social impact indices and availability for observation.

The non-participant observation aimed to explore media profiles based on the following topics:

- team sizes and profiles
- professional routines and journalistic innovation
- business models
- relationship with audiences on social networks and geolocation

Traditional media have small teams (5–6 members), while native digital media often work with a single person (in this case the founder, a young amateur communicator who used to work for a local broadcaster). Traditional media employ university-trained professional journalists with defined roles within a hierarchical structure, with journalists supported by audiovisual specialists. In contrast, digital media do not have dedicated staff and rely on occasional collaborators, resulting in inconsistent and amateur journalistic activity, with irregular participation in the city's press events.

Routines vary based on the type of media. Radio and television follow a traditional dynamic, responding to the immediacy of information for producing three daily news broadcasts. However, investigative journalism is limited, and there are no editorial meetings to decide on topics during the day.

Newspapers, conversely, engage in long-form journalism and multimedia content. Without audiovisual communicators, journalists explore possibilities for storytelling. For example, during a virtual press briefing, the team discussed mobile apps and recording for social networks.

Mobile journalism is now a widely adopted practice. At *Television Santa Maria*, journalists have replaced traditional live TV camera links with the Zoom app on their mobile phones. One observed example was the inauguration of the Coyhaique bus station, where the section chief personally recorded videos using her mobile phone. However, conventional cameras are still used on specific occasions to obtain cleaner shots. This practice eliminates the need for bulky transmission equipment and enhances mobility. Furthermore, Zoom is also used to monitor court cases from the newsroom, saving time and resources.

Unlike Santa María, El Divisadero fosters a telematic organisational culture, prioritising multimedia content such as photographic reports, Facebook livestreams of Coyhaique press briefings, and audiovisual recordings of editorial columns and interview programs such as "Café Diario". Via Austral, meanwhile, aligns with social media logic and viral content, focusing on Patagonian culture and dynamic livestreams about Coyhaique, which have garnered a significant following. Its communicator replicates television formats, blending studio and outdoor livestreams with real-time audience interaction via Facebook Live. Production remains sporadic, relying on software for scheduling and Canva for editing.

Advertising dominates as a business model, reflecting a traditional Chilean media approach. While conventional outlets maintain viability without alternative funding, *Via Austral's* pursuit of advertising revenue has heightened its engagement with small businesses and civil organisations, as well as sponsorship of cultural and sports initiatives. Commercial logic thus drives its primary activities.

Audience engagement can be examined from two angles: their integration into social networks and the production of geolocated news content, viewed through the lens of news deserts.

Santa María maintains its own sources of information, but does not incorporate user comments. The director minimally updates social networks with Canva designs. Conversely, *El Divisadero* integrates user comments into its news coverage, as seen during an attempted jailbreak in Coyhaique, where netizens shared initial information that journalists reported. The press director also analyses livestreaming statistics to identify popular topics for further investigation. Notably, the paper's youngest journalist is the only one who regularly uses emoticons to communicate with the public, while *Via Austral* often uses colloquial, youthful language.

The centralisation of information in Coyhaique is a complex issue, and challenging to avoid. From *Santa María's* perspective, during a typical day, only two out of ten news stories concern territories at risk of, or already in a news desert condition. A similar situation is true for *El Divisadero* which concentrates its activity in Coyhaique, primarily due to the extensive presence of public and private organisations during press briefings.

Non-participant observation has highlighted key local realities that are essential in understanding the challenges faced by regions that are increasingly becoming news deserts. The teams are small, and conventional media differ from digital native in terms of regularity of news production and solid organisational structures. *Santa María* prefers internal sources in contrast to *El Divisadero*. Print media have innovated with multimedia, attracting cybernauts, while radio and television focus on traditional journalistic products, although they use some hybrid technologies. Digital media rely heavily on social networks and often cover non-news topics. In Coyhaique, journalistic activity is strong, but news from other communities is scarce, exacerbating the news desert problem.

The problem of news deserts viewed from the main cities

As a complement to non-participant observation, our investigation into news deserts is enriched by 16 semi-structured interviews conducted with professionals and communicators from Coyhaique and Puerto Aysén. These cases allow us to delve into the routines and dynamics of journalism from regional, local, and hyperlocal perspectives.

The interviews address the following key topics, aiming to comprehend the factors contributing to the news desert phenomenon in the Aysén region:

- limited news production in remote areas
- criteria of information relevance
- business models
- influence of audience and regional media concentration
- financial weakness of media enterprises
- tensions between the media and local authorities

A shared reflection from the interviewees highlights the challenge of providing news coverage in areas where current events are extremely limited. The director of El Divisadero acknowledges that the news reaching the editorial team does not meet minimum standards of periodicity: "Of course, you can't ask for news every day because not every day significant events occur in a small commune." Similarly, the head of *Santa María* notes that despite their agreements with various community radios, the news reaching the editorial office remains scarce.

Regarding journalistic practices, *Milenaria* in Puerto Aysén often reports on nearby areas when events disrupt productivity, industry or connectivity. Aysén TV's founder highlights their focus on significant local news, such as the opening of a gas station in the news desert of Villa Cerro Castillo. *El Divisadero's* director notes that in remote areas, political topics, elections, tourism, and culture are more prominent and generate interest.

The mainly Coyhaique resident audience shapes proximity-based coverage, with *El Divisadero's* web administrator noting that readers from other communes are less engaged. The founders of *Aysén TV* and *Panorámica Informativa* criticise the concentration of administrative and informational activities in Coyhaique, despite Puerto Aysén's economic importance. *Panorámica Informativa* (whose owner had previously worked as an audiovisual correspondent for a major television station in Chile, *Televisión Nacional de Chile, TVN*) also notes that Coyhaique's dominance skews public perception, causing confusion.

Economic constraints hinder staff expansion, broader geographical coverage, and the development of investigative journalism. The former director of *Tehuelche Noticias* highlighted the structural challenge for hyperlocal and local independent media to produce quality journalism due to insufficient sponsorship, suggesting new media laws to grant small outlets access to State funds, similarly to the press duopoly. Additionally, funding limitations prevent *Panorámica Informativa* from establishing correspondents in other municipalities, mirroring *ComunicAysén's* struggle to deliver its monthly printed magazine across the region.

Conventional outlets like *Santa María* and *Milenaria* halved the number of journalistic staff due to the Covid–19 pandemic, and *Ventisqueros* reduced from three journalists to one. In contrast, *Las Nieves* has maintained its staff, and the collaborator and journalistic team at *El Divisadero* has even grown. In this latter case, the manager explains that the discontinuing of their print version was due to high production costs.

Another factor contributing to news deserts is the tension between media and local authorities. Aysén TV's director notes that many conventional media outlets were initially founded by political figures, and political or corporate sponsors often discourage local media from scrutinising those in power, fearing financial repercussions. *El Divisadero's* director suggests that antagonising local institutions can result in missed opportunities and support.

One specific case exemplifying this dynamic is the closure of *Radio Madipro* in Villa O'Higgins, which had formerly broadcast *Santa María's* content. According to the director of *El Divisadero*, ideological pressure from a former mayor led to its closure, exploiting the lack of broadcasting rights regulation. Consequently, the station became "another arm of the municipality" during that authority's tenure.

Reflecting on municipal radio stations, the former director of *Tehuelche Noticias* notes the limited diversity of their perspectives and the reliance on the same news sources. This is in line with the webmaster of *El Divisadero* who stresses that information from remote areas is not impartial, which is why the newspaper itself prefers contacts close to the media.

From the findings of non-participant observation and interview analysis, we can identify several causes of weaknesses in the media landscape as news deserts spread:

- information trickle from remote areas and challenges in journalistic coverage due to geographical and connectivity limitations
- concentration of informational activity resulting from the dominance of institutions and corporations in populated areas
- inability to develop comprehensive geographical coverage and diversify formats and audience connections due to economic weaknesses of media companies in the region
- influence and pressure from institutions restricting informational activity in local media ecosystems

Constructive proposals to avoid news deserts forming

By combining non-participant observation and semi-structured interviews conducted in the region, we can propose a roadmap for combatting news deserts that we believe to be fully applicable to other territories, both in the Latin American context and globally. As a counterbalance, we identify a practice historically not inherent to journalistic enterprises: collaboration. Establishing a network of alliances and synergies allows for content dynamism and complementarity.

Even among competing media outlets, there are bonds – a characteristic observed in Puerto Aysén. For instance, *Aysén TV* collaborates with *Panorámica Informativa* due to their limited journalistic staff. They share content when one outlet cannot attend a press event. Similarly, *ComunicAysén*, a digital native media, has found value in its alliance with conventional *Canal 11*, a partnership which has facilitated content creation and supported the publication of their monthly print version. Milenaria's presenter and director also maintains partnerships with *Auténtica* and *Voz del Mar*, radio stations in Cisnes and *La Voz del Ciprés* in Guaitecas, allowing for content exchange and audience reach. Another example is the collaborative reporting by the author of the fan page *ViveElDeporte* for *Las Nieves* in Puerto Aysén.

In Coyhaique, collaborators have distinct roles at *El Divisadero* and *Santa María*. At *El Divisadero* they act as informants from communication offices, linking remote sources with the outlet. In contrast, *Santa María* connects with community radios across the region, a network rooted in the infrastructure set up by a Catholic missionary decades ago, which continues through *Madipro* and municipal stations. *Ventisqueros* also runs a radio network with local coordinators feeding information to Coyhaique-based journalists and collaborating with *Radio Fenomenal*.

Via Austral gains credibility through occasional citizen reports. Its founder gathers audiovisual content, photos, and audio messages from across the Aysén region via WhatsApp, travelling to communes as needed. This mobile journalism allows for live reporting on connectivity issues, infrastructure problems or traditional fairs – a practical approach for a self-managed outlet. The founder's main goal is to highlight both the positive and negative aspects of the region, setting it apart from national media portrayals. El Divisadero's director, criticising Chile's concentrated press industry, advocates for purely local journalism free from national content. He points out that "the content of El Mercurio's regional newspapers is sent to Santiago, where they decide what is published and what is not [...] the conditioning is brutal". This view aligns with one of the *El Divisadero* journalists who noted that "the region is often skipped over by the national media [...] leading to a lack of knowledge about the territory" among Chileans.

Mobile journalism is a constructive practice for professionals, amateur communicators, and citizens. Its significance grew during the Covid pandemic, making it an indispensable element in journalistic routines enabling the creation of content and spaces for local and hyperlocal community engagement. At *Milenaria* the director frequently reports using mobile applications, a practice also adopted by *Las Nieves* for remote interviews via Zoom. These practices allow connections to distant news sources and save time for media outlets, as observed in *Santa María*. Additionally, new formats emerged during the pandemic, exemplified by El Divisadero's transition from print to digital, resulting in more human-interest news and deeper engagement on social media to navigate the challenges posed by the Covid pandemic.

The pandemic boosted digital natives in audience reach, innovation, and local engagement. After *El Divisadero* ceased its print edition, the digital outlet *ComunicAysén* wanted to position itself as the sole source with the print publication as a motivator. *Panorámica Informativa's* director observed that during the Covid–19 lockdown, their news segment and morning show in Puerto Aysén gained followers via Facebook livestreaming, attributed to people seeking ways to pass the time. In response, *Panorámica Informativa* incorporated regional music and local interviews to strengthen their identity, also attracting attention from Argentinean Patagonia due to familial ties in the Aysén region.

Via Austral intensified its activity due to audience demand for information. The pandemic prompted a proliferation of livestreams and real-time updates on Covid from *Tehuelche Noticias*, covering infection rates and measures to combat the emergency. This heightened journalistic activity had already been evident during the coverage of Chile's 2019 social protests. The former director of *Tehuelche Noticias* emphasises that their left-leaning and counter-hegemonic press positioning has cultivated a niche viewership, promoting pluralism and diverse perspectives within their community.

Conventional media outlets also deepened their connection with local audiences during the pandemic. The director of *Las Nieves* highlights how the radio served as a bridge, channelling the community's sense of unity during the emergency. By conveying public concerns to local authorities, the radio became an authentic utility for the community.

In summary, we propose focusing on the following practices from these media outlets as models to implement in other contexts threatened by news deserts:

- Collaboration networks among media outlets: collaborative practices are widespread, as seen in Puerto Aysén due to the small size of media teams.
- Reliable collaborators in remote areas: some media outlets have trusted collaborators in distant regions, facilitating access to contacts and necessary information. Additionally, partnerships with community radios, as exemplified by *Santa María*, enhance coverage.
- Vital role of mobile journalism: mobile journalism is now integral to journalistic work, allowing hybridisation of professional profiles and improved audience connections.
- Impact of the Covid pandemic on media: the pandemic prompted digital media outlets to strengthen audience relationships and grow through Facebook livestreaming. *El Divisadero*, a prominent print medium, shifted its agenda to focus on more human-interest stories and new formats.

Discussion and conclusions

This research highlights the current state of the Aysén region's media system and related journalistic practices, in the context of the news deserts problem, as a pioneering approach in understanding and combating this new media crisis, taking advantage of the experiences analysed in this Chilean reality. Based on our experience in the region, we propose to reconcile the weaknesses of the local media reality with the opportunities identified through the analysis of the work dynamics and the experiences of professionals working in the field.

From this perspective, the value of audiences and their collaboration are relevant points for the media, as practiced by *Via Austral* and citizen content (Harte et al., 2018), or the search for and deepening of news content in the digital sphere (Hess & Waller, 2017), as practiced by *El Divisadero*.

In this field, collaborative alliances between media are a finding registered in this area, corresponding to an extension of the state-of-the-art in terms of the study of subnational media systems (Ferrucci & Alaimo, 2020) where there is no competition between the media, but rather a spirit of cooperation (Jenkins & Graves, 2022). This interrelationship takes place between intercommunal media to obtain news content in a context of small journalistic teams and limited resources. In order to reverse news deserts, the proposal is to expand alliances between traditional media and native digital media, taking into consideration the way that these digital spaces can help to reach places where traditional media do not (Abernathy, 2020). The creation of new information spaces that allow diversification of sources act as a counterweight to municipal media to ensure information plurality (Nielsen, 2015; Abernathy, 2020; Rodríguez-Urra et al., 2024) with a focus on areas at risk or that have been declared news deserts in our study, or the concentration of actions to create more information spaces outside the most populated areas, as was the case with the Puerto Aysén – Coyhaique axis. Audiences are at the heart of most media.

Research highlights the central role of audience engagement in building mutual trust between the media and the public (Adornato, 2022; Hess & Waller, 2017; Nielsen, 2015). This dynamic is also evident in this Chilean region, where community cohesion (Carrasco-Urrutia, 2021; Durston et al., 2016; Contreras, 2022) has long been a defining feature. In line with findings from other contexts (Amigo, 2023; Wahl-Jorgensen et al., 2022), media-citizen engagement intensified during Covid-19, underscoring the importance of geographically focused media. This period saw the reinvention of news to emphasise human stories rooted in the locality (Hess & Waller, 2017) and the consolidation of information spaces on social platforms like Facebook, which resonate strongly with younger communicators and journalists (Adornato, 2022). The digital media Tehuelche Noticias exemplifies alternative press in the local context (Dodds, 2017), enhancing local pluralism by addressing social causes aligned with the region's protest history. While Observatorio Cultural (2022) notes Santa Maria's key role in past social mobilisations, it now focuses on conventional journalism, lacking audience engagement. This shift may reflect the uniformity in Chile's journalism education guidelines (Araya, 2014). We also see how Suenzo et al. (2020) comments on the journalistic ventures of people who have previously worked in the conventional media: here we can highlight the cases of Via Austral and Panorámica Informativa.

Journalists and communicators in the Aysén region are motivated to distance themselves from national media, perceived it as marginalising the region and as benefiting from significant economic advantages through the press duopoly (Mellado & Scherman, 2020; Mellado & Cruz, 2024; Dodds, 2017; Rodríguez-Urra et al., 2023b). This aligns with the economic challenges of practicing journalism outside Santiago (Bonifaz, 2016; Sáez, 2024; Rodríguez-Ortíz, 2016), particularly in Aysén, where independent journalism faces significant hurdles. Labrín (2023) advocates for public policies in Chile that reduce barriers to new media serving diverse communities, which would encourage people to approach the media in a Chilean (Mellado & Cruz, 2024) and global context of distrust (Newman et al., 2023; López-García et al., 2024).

Such state support is crucial for strengthening local and hyperlocal media (Tenor, 2018), especially in a context where digital media face low survival rates in Latin America (Salaverría et al., 2022), and traditional media outlets in Aysén continue to struggle post-Covid–19 pandemic. To combat news deserts, the State must take a more active role by increasing funding or expanding access to State advertising, echoing models elsewhere (Heawood, 2022; Cheverton, 2022; Newman et al., 2023) and excluding fees to media (Ferrucci & Alaimo, 2020).

The collaboration between media professionals and local communicators has proven beneficial, as seen in the United States, where it has spurred training and union activities within digital media (Abernathy, 2020) and fostered strong dialogue-based communication with audiences (Ferrucci & Alaimo, 2020). In Spain, Galletero-Campos et al. (2024) suggest that local governments should strengthen independent local media as an agent capable of energising community life in depopulated areas. This is also a key issue in Aysén due to its low population density. It is crucial to expand journalistic efforts to other communes and promote collaboration and specialised journalism (Jenkins & Graves, 2022) in remote areas (Mesquita, 2023), as current journalistic activities are concentrated in densely populated areas. Journalism in the region remains conventional, although mobile journalism is on the rise despite the disadvantageous development of technological connectivity.

It is plausible that professional organisations, such as the Chilean Journalists' Association (Colegio de Periodistas de Chile), could join the effort to lead these changes. By examining the experiences of other cases (Ferrucci & Alaimo, 2020; Jenkins & Graves, 2022; Galletero-Campos et al., 2024), it is possible to examine the potential for efforts among the various stakeholders to strengthen local journalism in order to combat news deserts, thereby assisting in mitigating the potential problem of misinformation at the local level (López-García et al., 2024; Garde-Eransus & Salaverría, 2024) and manipulation caused by the lack of media (Trillo-Domínguez, 2023).

We believe that these actions will lead to greater civic participation and representation in the media, promoting democratic values and the control of power based on the relevance of the local sphere to the lives of individuals (Hess & Waller, 2017; Nah & Chung, 2020).

Methodologically, we have demonstrated the feasibility of constructing a regional media map using open data by integrating multiple complementary sources and conducting a systematic search. Given the absence of an initial list of radio stations and digital media from journalistic organisations, we turned to alternative public databases and search methods (Negreira-Rey et al., 2020). Although searching on social platforms can be included, caution is warranted due to the risk of pseudo-media, even at the local level (Garde-Eransus & Salaverría, 2024). Developing a matrix to differentiate news spaces is crucial for future research, as it would allow the consideration of *local media transparency* (López-García et al., 2024, p. 137) levels as a criterion.

Our map shows that large cities concentrate the largest number of media with a diverse typology. There is a certain plurality of information in them, encouraged by the new digital media.

In the case of the region studied, the territory's remoteness (Reyes-Herrera & Rodríguez-Torrent, 2015) is particularly significant, compounded by adverse weather, challenging terrain and depopulated zones (Durston et al., 2016). These factors contribute to the underdevelopment of internet infrastructure and the limited presence of digital native media. Notably, there is a strong presence of radio stations which serve as effective communication channels in a region characterised by fragmented physical geography and vast distances. However, the predominance of municipally owned stations raises concerns about information plurality. Despite this limitation, the proliferation of radio stations, supported by the local population, represents a valuable opportunity for combatting news deserts. It also offers new research avenues through which to explore local and hyperlocal media in regional contexts (Rodríguez-Urra et al., 2023b).

Looking ahead, this research paves the way for developing regional media maps that can elucidate on the realities faced by local and hyperlocal media organisations, both in terms of companies and professionals working under highly challenging conditions. Such efforts are crucial in proposing constructive strategies to counter the threat of news deserts – a growing area of global research – and for ensuring the continued presence of professional journalism as a cornerstone of democracy.

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