

Digital audio and programmatic ad buying: status and prospects in the post-pandemic context

Pablo Garrido-Pintado; David Cordón-Benito; Lidia Maestro-Espínola

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Pablo Garrido-Pintado ✉
<https://orcid.org/0000-0002-6111-6715>

Universidad Complutense de Madrid
Facultad de Comercio y Turismo
Campus de Chamberí
Avenida de Filipinas, 3
28003 Madrid, Spain
pablo.garrido@ucm.es



David Cordón-Benito
<https://orcid.org/0000-0001-5603-0792>

Universidad Complutense de Madrid
Facultad de Comercio y Turismo
Campus de Chamberí
Avenida de Filipinas, 3
28003 Madrid, Spain
dcordon@ucm.es



Lidia Maestro-Espínola
<https://orcid.org/0000-0003-4866-3412>

Universidad Complutense de Madrid
Facultad de Ciencias de la información
Ciudad Universitaria
Avda. Complutense, 3
28040, Madrid, Spain
lidiamae@ucm.es

Abstract

This article examines the implementation of programmatic buying in the digital audio sector. The sustained growth present in the different markets helps the consolidation of this medium that brings enormous benefits to commercial communication. The main aim of this research is to understand the current situation of the programmatic audio advertising buying sector. In order to address the object of study, an exploratory approach has been carried out by applying a qualitative and quantitative methodology developed with professionals from the sector and supported by the collaboration of entities such as *IAB* and *Programmatic Spain*. The results show that there is a greater commitment by brands to invest in digital audio due to its flexibility and the ability to send segmented messages with greater effectiveness and consumer engagement. As a non-invasive medium, the inclusion of digital audio in media plans has a direct impact on listener's attention. Data shows that there has been a significant increase in the consumption of streaming music, online radio, and podcasts. Nevertheless, investment is still focused on traditional radio and the results of the study show a reluctance to plan integrated campaigns. Moreover, the difficulty in measuring return on investment is a major deterrent to the investment attracted. Professionals interviewed say that the market provides transparency and quality guarantees, as opposed to other problems such as fraud in data measurement that have slowed down investment in the past.

Keywords

Digital audio; Programmatic advertising; Digital advertising; Advertisements; Ads; Advertisers; Marketing; Advertising saturation; Internet; Radio; Engagement; Programmatic ecosystem; Immersive experience; Podcasts; Podcasting; Hyper-segmentation.

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1. Introduction and theoretical approach

In recent years, digital audio consumption has experienced remarkable growth. The *Infinite Dial* study (Edison Research, 2021) shows that the number of online radio listeners in the United States has reached 193 million, 68% of the population, as compared with 60% in 2020. The report also indicated that weekly podcast listening increased while smart speaker purchases grew to 94 million, 33% of the country's population. Meanwhile, in the UK, 31% of adults report listening to live radio via smartphones or tablets (Rajar Data Release, 2021).

In Spain, 2021 was the year for digital audio consolidation. According to data from IAB (2021a), 66% of respondents reported listening to digital audio at a steadily increasing rate since 2018. The most listened-to content was radio stations (45%) and music and concerts (43.5%), followed by *Spotify* and podcasts. According to data from *Infoadex* (2022), investment in radio was 415.4 million euros in 2021. Investment in digital audio, on the other hand, rose from 35 million euros in 2019 to 61.8 million euros in 2021 (IAB, 2022).

Digital audio and conventional radio share the characteristics of exclusivity, engagement, and brand exposure time. Despite its popularity, years ago, advertisers were reluctant to allocate large portions of their budgets to digital audio ads. According to *Forrester* (2021), this was due to the “lack of measurability, innovative ad formats and programmatic options.”

However, programmatic buying has experienced remarkable growth in recent years, and gradually, solutions to such issues have been implemented in digital audio. For Carrillo-Durán and González-Silgado,

“programmatic is a solution to advertising saturation highlighting the importance of content and data processing that make it possible to achieve better audience segmentation” [“*la programática es una solución frente a la saturación publicitaria destacando la importancia de los contenidos y el tratamiento de los datos que hacen posible lograr una mejor segmentación de la audiencia*”] (Carrillo-Durán; Rodríguez-Silgado, 2017).

Programmatic audio advertising is

“automated selling and insertion of ads in audio content such as podcasts, audio articles, digital radio, and streaming music services” (Jaworski, 2021).

As Genoveva Marín and Silvia Benito of *Google* point out,

“Programmatic audio campaigns show a consolidation of media and are more effective in reaching users in an innovative way” [“*Las campañas programáticas de audio muestran una consolidación de los medios y son más efectivas a la hora de llegar a los usuarios de una manera innovadora*”] (Marín-Villalonga; Benito, 2021).

In digital audio, this involves the application of the “use of data and networked computing to automate and optimize aspects of media buying and selling” (McGuigan, 2019) in the audio digital medium. After all, this type of content consumption takes place on the network, where many different products are necessary to meet the needs of a variety of targets (Bonet; Sellas, 2019).

Now, although programmatic buying of digital audio is growing, it still remains a comparatively small percentage of total advertising budgets. The trend indicates that audio inventory will increase, which will make it necessary to measure quality and performance.

For Smith (2022), the challenge in the medium term will be to identify suitable positioning for brands and establish a simple method of analysis.

According to the *We Are Social* study (2022a), internet users worldwide spend an average of 1 hour 33 minutes per day on music streaming services, just over an hour listening to radio, and 55 minutes per day listening to podcasts (1.9% more than in the previous year). In the case of Spain, 61% of Internet users over 16 years of age consume digital audio content. Among them, 77% recall having heard advertisements, and 43% of them consider this useful and think that it had a positive influence on their purchasing decisions (*We Are Social*, 2022b).

The *Sonic Science* study conducted by *Spotify* and *Neuro-Insight* (2021) describes the act of listening as an immer-

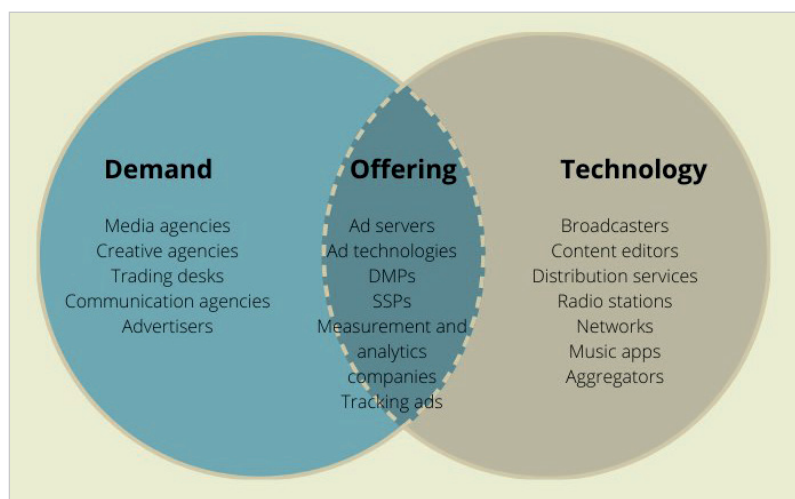


Figure 1. Programmatic advertising ecosystem in digital audio.
Source: Based on Carrillo-Durán and Rodríguez-Silgado (2018) and IAB (2021a).

sive experience. To corroborate this claim, they asked their users about the impact of music and podcasts on their lives. For 79%, music helped them concentrate, 96% felt it improved their mood, 88% thought it made the mundane interesting, and 84% felt it helped them remember past experiences. These effects are already reflected in the scientific literature in studies such as those on the effects of music consumption on concentration and attention (Park; Kwak; Han, 2020; Shih; Huang; Chiang, 2012; Kumar et al., 2016) and the increased level of intimacy compared with other media (Bull, 2010).

The programmatic ecosystem is based on two elements: purchase (demand) and supply (sale). We examine their components in the case of programmatic audio (Carrillo-Durán; Rodríguez-Silgado, 2018; IAB, 2021a) (Figure 1).

On the demand side, we have advertisers; communication, creative, and media agencies; traders; demand-side platforms (DSPs); ad exchanges; networks; supply-side platforms (SSPs); and data providers:

- Advertisers: They demand and buy impressions on different digital audio platforms. They define the target audience and the amount to be invested according to the campaign strategy (Shen et al., 2015). They contract creative and media management services, although the system makes it easier for them to operate directly (Tiet; Karjaluoto, 2021).
- Media agencies: They traditionally act as intermediaries between advertisers and platforms. They manage the budget defined by the client (Paulson; Luo; James, 2018).
- Trading desks: These teams implement buying strategies in the system. They can be integrated into an agency’s team or work independently. They process purchase requests along with information about users, types of websites, etc. They choose the level of offering that best suits the client’s strategy (Fernández-Tapia; Guéant; Lasry, 2016).
- Demand-side platforms (DSPs): Technology that makes it easier for advertisers to buy advertising inventory through direct buying or real-time bidding (RTB) (Xu et al., 2015).
- Ad exchanges: Technology that makes it possible for both the buyer and the seller to define the rules of sale and purchase (Angel; Walfish, 2013).

On the sales side, we have the media, advertising networks, and SSPs:

- Platforms: Content editors. They can sell inventory through deals, at a fixed price and with guaranteed inventory, and also through private marketplaces (PMPs). In the case of programmatic audio, there are broadcasters, podcast publishers, distribution services (e.g., Spotify), music apps, and aggregators.
- Networks: Their operation is similar to that of platforms, but they group together several publishers.
- SSPs: Technology that helps advertisers implement a series of rules such as the minimum bid price, the technical attributes, or the blocking of certain categories.

Alongside these players are data providers, who integrate both internal and external information, as well as systems for the verification and quality assurance of the brand (brand safety). These quality assurance systems are necessary since the data that are most widely available may be of lower quality and be ethically sensitive (Martínez-Martínez; Aguado; Boeykens, 2017).

According to the Digital Audio Study 2021, the most consumed formats in Spain are: music on demand (77.8%), streaming radio (70.8%), pre-recorded radio (46.1%), podcasts (43.8%), content created for voice assistants (31%), audiobooks (21.7%), and aggregators (16.1%). According to the iVoox Observatory (Martínez, 2021), Spaniards listen to podcasts an average of 19 hours per month. The advertising possibilities are manifold, as shown in Table 1.

Table 1. Digital audio formats

	Formats	Advantages	Options
Audio spot: Format of an average of 20–30 seconds long that includes descriptive text about the product combined with music, voices, sound effects, or moments of silence (Muela-Molina, 2008)	Audio spot	Targeting/frequency	3D/8D ad spot and dynamic creative optimization (DCO)
	Audio spot + banner	Generates traffic and leads, expands on information, and reinforces the message	Includes page stealers (300 x 250 px), megabanners (728 x 90 px), and mobile banners (320 x 50 px)
	Interactive audio spot	Typically calls to action	Shake Me™ or voice ad formats
Sponsorships: Short ad inserts that help fund radio programs (Perona-Páez, 2007)	Audio spot	Produced on an exclusive basis	Pieces at the beginning or end of content
	Mentions	Recommendation of products or services, creating a greater connection with the audience	
Branded content	Branded podcast: Generating brand content in an audio format (Sellas; Martínez-Otón; Ortega-Seguí, 2021)	Affinity/value/community creation	Branded podcast (associated with a media outlet or group or podcaster) or brand-associated podcast (section within the content)

Source: Adapted from Estudio Audio Digital (2022); Perona-Páez (2007); Muela-Molina (2008); Sellas, Martínez-Otón, and Ortega-Seguí (2021).

As shown in the figure, there has been an evolution from the classic format (radio slot) to solutions that take advantage of surround sound technologies or dynamic optimization of pieces (**Baardman et al.**, 2021). Projections indicate that voice-driven content strategies will increase (**Jones**, 2018), and by the end of 2022, it is expected that one in three smart devices will be a speaker (*IAB*, 2021b).

Listening to audio content has always been the most personal and intimate way to relate to a medium (**Bull**, 2010). Moreover, it is an omnipresent medium that is available when there is no Internet connection or no screen (screenless) (*Targetspot*, 2021). It can also not be forgotten that the next technological disruption will bring new visual and voice-based interfaces that will integrate advertising areas (**Zomeño; Blay-Arráez**, 2021).

2. Objectives and research questions

This article examines the possibilities for implementing programmatic buying systems in digital audio.

The objective is to understand the current situation of the digital audio sector and how the implementation of programmatic ad buying systems is unfolding.

Generally speaking, two main questions arise: (1) What is the current state of the digital audio sector? (2) How is the implementation of programmatic buying systems unfolding in this context?

In addition, a series of secondary objectives were set out as follows:

- To understand the characteristics of digital audio as an advertising platform to keep an eye on within the media mix.
- To analyze the level of interest that brands have in digital audio as part of their strategies.

3. Methodology

We chose to use a quantitative–qualitative methodology. The study is based on an exhaustive literature review, analysis of studies and reports, and news published about digital audio and programmatic buying.

3.1. Quantitative research

A quantitative study was carried out, with the design of an online survey targeting a non-probabilistic sample composed of professionals from media agencies (46.2%), advertising networks (13.7%), trading desks (7.7%), and technology consulting firms (9.4%) residing in Spain. Professionals were contacted between January and March 2022 through three channels: email, questionnaires sent through the social network *LinkedIn*, and advertisements on the website and in the e-newsletter for *IAB* and *Programmatic Spain*. More than 70% of respondents held senior positions (manager, director, or CEO) in their companies.

A total of 156 questionnaires were sent out, of which 117 were answered ($n = 117$). No questionnaire was rejected. The survey posed 10 closed questions. Two of them were dichotomous, while the rest covered a range of issues related to digital audio campaign management, methods of budget management, and reasons for using or not using programmatic buying. Questions 2 and 5 were filter questions, since, depending on their answers, the user either continued in the established order or jumped to another section. Finally, basic identifying information, such as the position held by the respondent and the type of company to which they belonged, were requested.

3.2. Qualitative research

In addition, a qualitative study was carried out in which different digital audio experts were consulted. Thus, we proceeded to design a semi-structured questionnaire with five questions to conduct eight in-depth online interviews with professionals from consulting firms, media agencies, marketing agencies, platforms, and digital audio technology providers. The interviewees were contacted through email and the social network *LinkedIn*. The interviewees had a profile of manager/executive. The interviews took place during the months of January and February 2022. The aim was to find out the reasons for the boom in digital audio and brands' motives for including audio in their media plans. The variables analyzed were the reasons for the boom in digital audio, the benefits for the brands, digital audio management, and the effects of the pandemic on the industry.

Table 2. List of digital audio experts interviewed

Name	Senior position	Company
Irene Rivas	Journalist, podcaster, and collaborator	<i>Canal Sur TV</i>
Córdoba Ruiz	Managing Director	<i>IKI Media</i>
Nacho Carnés	Digital Marketing & Programmatic Marketing Expert	<i>B4Bind</i>
Daniel Villalba	Country Manager Spain & Portugal	<i>Targetspot (Audio Adtech)</i>
Vicente Sendra	CEO & founder	<i>MediaShoppers</i>
José-Enrique González	Programmatic expert	<i>OMD</i>
Federico Fermi	Digital Product Manager	<i>Audio.ad</i>
Paula García Cameselle	Director of Programming	<i>Alkemi</i>

The following questions were asked:

- What are the reasons for the boom in digital audio in recent years?
- What are brands looking for when they integrate digital audio into their media plans?
- What are the most successful platforms/services? And why?
- How has the pandemic affected digital audio?
- What are the future trends in digital audio? What are the prospects for programmatic buying?

4. Results

The results obtained from the questions posed are presented below.

4.1. Quantitative results

The results obtained from the questions posed to the digital audio experts are shown below.

Table 3. List of digital audio experts interviewed

Questions	Responses			
Question 1. Use of digital audio in the media mix ($n = 117$)	I have not used digital audio		Yes, I have used digital audio	
	34%		66%	
Question 2. What are the main reasons why digital audio is included in brand communication ($n = 77$)?	Strongly agree that digital audio makes it possible to reach the target audience		Disagree with the statement, "It makes it possible to measure response and return on investment"	
	90.9%		94.8%	
Question 3. When you invest in digital audio advertising, how is the advertising budget managed? ($n = 77$)	By the digital department	Depends on the team managing the campaign	By the radio department	Not yet decided
	48%	46%	5%	1%
Question 4. What is the most common way to plan ($n = 77$)?	Planning independently		Planning in conjunction with conventional radio	
	64.9%		22.1%	
Question 5. Have you purchased space in digital audio using programmatic buying systems? ($n = 77$)	I have not used programmatic buying for digital audio		Yes, I have used programmatic buying for digital audio	
	18.2%		81.8%	
Question 6. What are the reasons for using programmatic buying in digital audio ($n = 77$)?	<ul style="list-style-type: none"> - Flexibility of the medium - Fast implementation of campaigns - Achievement of plan objectives - Reaching a specific audience - Achievement of conscious exposure - Guarantee of placement in a safe environment 			
Question 7. Which formats do you consider most suitable for the programmatic buying of digital audio? ($n = 63$)	<ul style="list-style-type: none"> - Aggregators, live online radio, pre-recorded radio, and podcasts are the most appropriate media on which to spend the budget in programmatic buying - Audiobooks or voice assistant content would not be considered suitable for the new purchasing and sales system 			
Question 8. What do you think are the roadblocks in the evolution of programmatic buying of digital audio ($n = 63$)?	There is not a lack of transparency in negotiation	There are not high negotiation costs	No confidence in inventory	Yes, there is a variety of formats
	46%	53.9%	53.9%	52.3%

It was noted that 65.8% of the respondents reported that they had integrated digital audio into their campaigns. When asked for the reasons they used digital audio in brand communication, respondents said that digital audio allows them to reach the target audiences of the brands they work for. It is a medium that adapts to the consumer's life events; however, they believed that there are still difficulties in measuring the response and calculating return on investment.

On the other hand, there was no consensus on how to manage advertising budgets. There was disagreement about whether management should depend on the digital department or on the criteria of the team managing the campaign.

The vast majority of respondents considered planning independently to be the most common way to select digital audio platforms. Less than a quarter of the respondents considered the option of planning in conjunction with conventional radio.

When asked about their method of buying digital audio space, respondents said they plan extensively with programmatic buying systems (81.8%). The remaining percentage reported not having used programmatic buying owing to the limited variety of advertising inventory.

“ In Spain, 2021 was the year for digital audio consolidation ”

Those respondents who bought audio through programmatic buying platforms considered it a flexible and fast system for implementing campaigns. Programmatic buying helps agencies and media achieve the objectives established in their plan, reaching a specific audience through conscious exposure. To a lesser extent, the experts believed that programmatic, at this point in time, guarantees brand-safe environments.

Respondents indicated that the formats most suitable for investment in programmatic buying are aggregators, live online radio, pre-recorded radio, and podcasts. They did not consider audiobooks or voice assistant content suitable for the new purchasing and sales system.

For most respondents, the main roadblocks in the evolution of programmatic buying of digital audio are the lack of transparency, lack of confidence in the inventory, and lack of variety of formats. Also, they did not believe that there is a lack of transparency in negotiation. They said that there are other reasons holding back growth. Paula García Cameselle of *Alkemi* (Personal communication, February 2022) said,

“we are used to a very detailed level of targeting and absolute measurement in traditional programmatic environments (display and video). However, in newer environments such as audio, outdoor advertising, or connected TV, measurement is limited by technical issues and by the very nature of the format” [“*estamos acostumbrados a un nivel de segmentación muy detallada y a una medición absoluta en los entornos programáticos tradicionales (display y vídeo). Sin embargo, en entornos más novedosos como el audio, la publicidad exterior o la televisión conectada, la medición está limitada por cuestiones técnicas y por la propia naturaleza del formato*”].

4.2. Quantitative results

The following are the responses given by the digital audio experts interviewed.

Question (a). What are the reasons for the boom in digital audio in recent years?

Several of the experts consulted believed that the reasons for the boom in digital audio stem from a change in habits and a migration of content from, for example, the press (C. Ruiz, personal communication, 2022). For José Enrique González, programmatic expert at *OMD*,

“the popularity of applications such as *Spotify*, *iVoox* or *TuneIn Radio* and the greater proliferation of online content have led to an increase in digital audio inventory” [“*la popularidad de aplicaciones como Spotify, iVoox o Tune in radio y la mayor proliferación de contenidos online han provocado un aumento del inventario del audio digital*”].

In addition, it influences

“the emotional connection that is established with the listener [...] transporting us to places and creating sensations generating closeness and trust” [“*la conexión emocional que se establece con la persona que escucha [...] transportándonos a lugares y creando sensaciones generando un efecto de cercanía y confianza*”] (F. Fermini, personal communication, 2022).

Question (b). What are brands looking for when they integrate digital audio into their media plans?

Brands use digital audio in their media plans to

“connect with the consumer in a personalized way” [“*contactar con el consumidor de manera personalizada*”] (C. Ruiz, personal communication, 2022).

For Daniel Villalba of *TargetSpot*,

“brands work to attract new users and engage with their products and services” [“*las marcas realizan una labor de captación de nuevos usuarios y de engagement con sus productos y servicios*”].

In one way or another, communication actions seek to reach users who have stopped consuming conventional radio. Brands are interested in digital audio because it enables them to

“bring variety to campaigns and establish additional contact points” [“*aportar variedad a las campañas y establecer puntos de contactos adicionales*”] (J. E. González, personal communication, 2022).

For Federico Fermini of *Audio.ad*, the uniqueness of the medium makes it become the only impact on the user at that moment, as it is a type of consumption that may coincide with activities such as cooking, reading, playing sports, or driving.

Question (c). What are the most successful platforms/services? Why?

Interviewees highlighted *Spotify* for music and *iVoox* for podcast and online radio. It is worth remembering that 72% of digital audio users do not pay for a subscription service, and of the 29% that do, *Spotify* has 62% of subscriptions versus *Amazon Music's* 24% (IAB, 2021a). In terms of production, Irene Rivas (2022) highlighted the *Podium Podcast* team, which boasts a large team of collaborators and has been a pioneer in launching high-level productions. Regarding formats, Daniel Villalba (2022) thought that the pre-roll format (spots at the beginning of content) was the format used in music apps whereas the mid-roll for-

Programmatic audio advertising is “automated selling and insertion of ads in audio content such as podcasts, audio articles, digital radio, and streaming music services” (Jaworski, 2021)

mat (pieces played during the broadcast of content) was what generates the highest number of advertising impressions. José Enrique González of *OMD* (2022) also cited conventional radio stations that are progressively adapting to the digital medium and are increasingly turning over more inventory, which will result in higher advertising quotas in the future.

Question (d). How has the pandemic affected digital audio?

The experts concurred that the COVID-19 pandemic has caused a boost in the consumption of audio content. The data corroborated this, as the Audi-on study by *Carat* (2021) shows that the lockdown accelerated podcast consumption by 15% and music streaming by 35% and, in parallel, the consequent interest of brands in being present through different advertising formulas and formats.

Question (e). What are the future trends in digital audio? What are the prospects for programmatic buying?

Finally, a question was posed about future trends in digital audio. Several agreed about the significant growth of content (audiobooks, podcasts) that will take market share away from music. Córdoba Ruiz of *IKI Media* (Personal communication, January 2022) believed that there will be an increase in voice searches that will enable many brands to adopt voice-activated marketing strategies to enhance search engine optimization, as well as visibility and sales.

Daniel Villalba believed that digital audio advertising “does not force you to stop doing things to pay attention” [*“no obliga a dejar de hacer cosas para prestar atención”*], which will influence the video game environment, even changing the player experience.

For Federico Fermini (Personal communication, 2022), the outlook is promising; if we look at the growth of other markets such as that in the United States, there is room for growth. For this expert, it is curious that, according to the latest data on advertising investment, users are already in the digital space; however, advertising investment is still focused on traditional radio.

According to José Enrique González, the growth of programmatic buying will depend on the volume of inventory. Currently, the cost per thousand (CPT) of digital audio is high compared with video formats. Therefore, it will be necessary to attract more users in order to reach a greater critical mass. This will make the shopping environment more secure and open unique environments, with publishers providing guaranteed purchase methods, added Daniel Villalba (Personal communication, February 2022). On the other hand, Nacho Carnés (2022) put his money on the growth of voice shopping and advertising synchronized and integrated with other media, such as digital outdoor advertising (*DOOH*).

Table 4. Triangulation of qualitative–quantitative results

	Questions	Responses			
Qualitative	Reasons for the boom in digital audio in recent years	<ul style="list-style-type: none"> - Change in habits and migration of content from other media - Emotional connection with the listener 			
Quantitative	Main reasons why digital audio is included in brand communication	Strongly agree that digital audio makes it possible to reach the target audience		Strongly agree that it adapts to the consumer's life events	
		90.9%		94.8%	
Qualitative	Future trends in digital audio and programmatic buying	<ul style="list-style-type: none"> - Dependence on inventory - Higher cost per thousand (CPT) than video formats - Increasing critical mass - Increased safety of the environment - Guaranteed purchase methods - Growth in voice shopping and advertising synchronized and integrated with other media (e.g., <i>DOOH</i>) 			
Quantitative	Use of programmatic buying systems	I have not used programmatic buying for digital audio		Yes, I have used programmatic buying for digital audio	
		18.2%		81.8%	
	Reasons to use programmatic buying in digital audio	<ul style="list-style-type: none"> - Flexibility of the medium - Fast implementation of campaigns - Achievement of plan objectives - Reaching a specific audience - Achievement of conscious exposure - Guarantee of placement in a safe environment 			
	Roadblocks in the evolution of programmatic buying in digital audio	There is not a lack of transparency in the negotiation	There are not high negotiation costs	No confidence in inventory	Yes, there is a variety of formats
		46%	53.9%	53.9%	52.3%

The results obtained from the triangulation of the quantitative and qualitative data are described below. Taking into account the secondary objectives, the most salient points obtained are presented.

When asked about the reasons why digital audio is included in the communication actions of brands, the experts interviewed agreed that there has been a change of habits, in addition to a progressive migration of content from other media, such as the press. They pointed out that its main feature is its capacity for emotional connection with the listener compared with other media.

These responses are in line with those received from the questionnaire sent to professionals, in which 90.9% of individuals who responded to question 2 stated that they fully agreed that the medium adapts to the consumer's life events (94.8%) and that digital audio provides opportunities to connect with a target audience (90.9%).

Additionally, there is a relationship between the answers obtained from question (e) in the interview (trends and perspectives of programmatic buying) and questions 5, 6, and 7 of the questionnaire sent out to the sector. There was an industry consensus on the management of digital audio in programmatic buying systems. This consensus was based on the transparency offered in negotiation, low negotiation costs, confidence in the inventory, and the variety of existing formats.

5. Discussion

The statements of the surveyed professionals highlight programmatic audio's capacity for designing targeted messages, which results in higher engagement and greater effectiveness in the impact achieved by the brand through exposure to the audience. These are in line with the users' positive evaluation of the advertising heard regularly when consuming digital audio content, which they considered valuable in their purchasing decision processes (*We are Social*, 2022a). In addition, the results obtained from respondents and interviewees were consistent with the theory defended by some studies published in recent years, which showed the growing commitment of brands to digital audio. According to these studies, it is perceived as a novel strategy that is beginning to take form (*IAB*, 2021c; *Infodex*, 2022).

However, the majority of advertising investment in the audio sector is still heavily focused on traditional radio, demonstrating caution on the part of brands when managing budgets as well as a reluctance to design integrated and complementary strategies in the digital medium. The small number of platforms that currently market these programmatic audio options, as well as a reticence toward it owing to its newness and the results being still in the early days, explain why a third of respondents still did not use digital audio in their campaigns.

Despite the boom in digital audio during the last five years, one of the main shortcomings pointed out by some authors (*Forrester*, 2021) is the narrow range of options within the advertising inventory. However, it is important to note that the vast majority of the professionals surveyed and interviewed in this regard did not think that the formats lack innovativeness or are similar to those already used in traditional media. There is one main element that prevents a greater commitment to this format: the lack of an exhaustive measurement of the impact achieved with this type of advertising to justify the investment allocated in the media plan.

On the contrary, in the face of a depletion of the advertising resources used by traditional media, digital audio emerges as a format that offers new forms of advertising in times when attention is highly focused on what is being heard. It also enables the creation of stronger emotional ties between the brand and the listener. It is a solution to advertising saturation in traditional media that provides greater effectiveness in achieving objectives, as well as a more positive perception of commercial messages by the audience and a greater connection with the brand.

According to interviewees, streaming music and podcasts are the formats that best lend themselves to the use of different programmatic buying strategies for digital audio. This is in line with some studies (*Marketing News*, 2021) that present *Spotify* as one of the platforms that best adapts to the opportunities offered by the purchase of programmatic audio, as it is the top choice for listening to streaming content. It should be noted that, within this platform, in addition to music, the user has access to podcasts or radio that could be listened to on other applications or websites, so the offering is more centralized.

It is worth highlighting the main limitations of this research, primarily, the high non-response rate. Out of a total of 156 surveys sent out, only 117 responses were obtained from different participants. The secondary limitation was the low participation rate of interviewees, since 12 professionals were invited to participate but only a total of 8 took part in the qualitative study.

This information may enrich this section and the conclusions offered in this paper and, therefore, broaden its scope. However, it should be specified at this point that international experts in this sector were contacted and that, despite showing interest and enthusiasm for research based on an analysis of programmatic buying of digital audio, in the end, there was no response to the questionnaire used in the interviews held.

Respondents highlight aggregators, live online radio, pre-recorded radio, and podcasts are the most appropriate media on which to spend the budget in programmatic buying

Respondents said that digital audio allows them to reach the target audiences of the brands they work for

6. Conclusions

The research presented was created with the aim of understanding the current situation of the digital audio sector and how the implementation of programmatic ad buying systems is unfolding. After the detailed analysis of previous studies and research and the use of the methodology employed to obtain the opinion of professionals and experts in the programmatic audio sector, the following conclusions can be highlighted:

There is one main element that prevents a greater commitment to this format: the lack of an exhaustive measurement of the impact achieved with this type of advertising

- Digital audio as an advertising tool shows a growing trend for the coming years. Marketing and advertising professionals recognize programmatic audio as a tool that has a direct influence on the listener's attention to messages, since it is not considered invasive. This is due to the ability to select very specific targets that measure impacts and establish a better bond with the brand than that achieved with traditional media.
- Digital audio has been revealed to be a flexible format with a wide variety of options that set it apart from the traditional tools used in radio. The use of formats in which audio or video is used, in addition to native advertising or branded content, is a sign of the renewal in the advertising inventory. This novelty is leading more and more professionals to introduce it into the media mix when planning their campaigns.
- Despite the consolidation it demonstrates, programmatic audio has a number of weaknesses that may pose problems in its implementation. The main difficulty, as pointed out by the experts consulted, is measuring the return on investment in this new format, which still makes some marketers wary.
- Streaming music listeners, online radio stations, and podcasts are options increasingly used by different audiences. This is evidenced by the continued growth in the number of people using them, as well as advertisers' rising interest in increasing investment in programmatic audio in these new platforms.
- It should be noted that planning for programmatic buying in digital audio, as confirmed by the participants in the research, is carried out independently from the investment in professional radio, so the campaigns cannot be considered integrated but rather complementary.

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8. Annex

Questionnaire used in the survey

Title: Digital audio and programmatic buying

Q1. In your company or with clients that you manage, in 2021, have you used Digital Audio in the media mix when planning campaigns?

Yes, I have used digital audio | I have not used digital audio (Skip to question 9)

Q2. What are the main reasons why Digital Audio is included in brand communication? Rate the following statements according to your degree of agreement or disagreement, using: (1) Strongly Disagree, (2) Disagree, (3) Agree, (4) Strongly Agree.

Each item is rated from 1 to 4.

- It enables measurement of response and return on investment
- It allows me to reach my brand's target audience
- It adapts to the consumer's life events
- It is a medium to keep an eye on in the media mix

Q3. When you invest in Digital Audio advertising, how is the advertising budget managed?

By the digital department | Up to the discretion of the team managing the campaign | By the radio department | Not decided

Q4. What is the most common way to plan?

Joint planning (digital audio + conventional radio) | Planning independently | Other

Q5. Have you purchased space in digital audio using programmatic buying systems?

Yes (Go to question 6) | No (Go to question 6b)

Q6. If you answered YES to question 5, what are the reasons to use programmatic buying in digital audio? Rate the fol-

lowing statements according to your degree of agreement or disagreement, using: (1) Strongly Disagree, (2) Disagree, (3) Agree, (4) Strongly Agree.

Each item is rated from 1 to 4.

- It is a flexible and fast system for implementing campaigns
- It enables me to achieve the objectives set out in the plan
- It allows me to reach volume targets
- It allows me to reach the specific audience for the campaign
- Conscious exposure to advertising is achieved
- The brand appears in a safe environment

Q6b. Why doesn't your company/client invest in programmatic audio? (1) Strongly Disagree, (2) Disagree, (3) Agree, (4) Strongly Agree

- It does not have much reach
- High negotiation costs
- It is not suitable for campaigns with a lot of coverage
- Limited variety of advertising inventory

Q7. Which formats do you consider most suitable for the programmatic buying of digital audio? Rate the following statements according to your degree of agreement or disagreement, using: (1) Strongly Disagree, (2) Disagree, (3) Agree, (4) Strongly Agree.

- Podcast
- Music on demand
- Live online radio/streaming
- Aggregators
- Pre-recorded online radio
- Audiobooks
- Voice assistant content
- Gaming & in-app purchases
- Others

Q8. What do you think are the roadblocks in the evolution of programmatic buying of digital audio? Rate the following statements according to your degree of agreement or disagreement, using: (1) Strongly Disagree, (2) Disagree, (3) Agree, (4) Strongly Agree.

- Lack of transparency in the negotiation
- High negotiation costs
- Lack of confidence in the inventory
- Variety and flexibility of formats
- Quality of the data
- Others

Identifying information

Q9. Finally, could you please indicate what position you currently hold in your company?

Director/CEO | Manager/Head | Technician | Intern/Junior | Other

Q10. Your company is a...

Media agency | Advertising network | Trading desk | Consultancy | Platform | Advertiser | Other

Thank you very much for your participation. If you wish, we can send the results of this research to your e-mail address.



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