Original Research Article

Shaping of radio in Mexico in the last decade (2010-2020)

ABSTRACT

According to recent information from Mexico: 1) More people listen to the radio from Monday to Friday than on weekends; 2) Men listen to the radio more than women; 3) In Mexico City, men listen to the radio in a higher percentage from 8 to 9 am, during the so-called 'rush hour', when traffic congestion is heaviest and people go to work; 4) Women listen to the radio in a higher percentage one or two hours later than men, generally from 10 to 11 am. Advertising in the national radio industry is falling sharply in recent years, in 2016 it absorbed 10.3% of total advertising spending in the country, reaching only 5% in 2020, declining to less than half of the share it had four years earlier. Grupo Radio Centro takes an average 15.4% of advertising from 2016 to 2020, while Televisa Radio takes 12% (before the sale of stations), both corporations take 27.5% in 2018 and 29.6% in 2019, adding six other radio groups (Fórmula, Imagen, Radio Mil, Radiorama, Stereo Rey and ACIR), they would at least have 41.1% of national radio revenues. The most important radio stations in the country have started to broadcast their content through websites, where they transmit in real time the same programming they broadcast through their AM or FM frequency bands.

Keywords*: radio; commercial broadcasting; broadcasting industry; national broadcasting*

INTRODUCTION

William Hiarmes (quoted by Rodríguez, 2016: 17) Manager of Radio Centro in 2016 states about the advantage of radio over other news media:

> ...as soon as something happens we are the first to communicate it, television technically cannot, internet requires many things, if everyone would occupy the network in Mexico it would fall, instead everyone can tune in to radio stations and they do not fall.

Similarly, Liliana Corona (2021) indicates in this regard:

> Neither radio listeners nor businessmen have any doubts about the power of this medium. For example, in times of emergency -such as earthquakes and other natural disasters- radio is a reliable means of continuous information. On the other hand, mobile telecommunications networks -cellular and internet- are saturated or interrupted by power cuts.

In this paper I intend to analyze the situation and shape of radio in the last decade. In section one I describe radio's share of the total national advertising market. In the second section I analyze the main radio groups in our country, as well as the concessions held by each of them, detailing in the main section the economic situation of the main national radio groups. In the third section I deal with the aspect of digital radio in current times, pointing out the changes that this industry has undergone in recent times.

1. Participation of the different media in advertising

Radio is and has been an excellent companion in people's daily lives, in these times with smartphones and computers, which provide services such as streaming and podcasting, radio stations can take advantage and use them to provide their music programming or news or interviews to their listeners.

With the emergence of compressed audio formats (MP3 gadgets and others), the capacity to store digital audio files in different formats (Apple's iPod; Sony's NWZ, Samsung's Galaxy Player), has resulted in the young population of the country and the world in general is moving away from traditional radio. Streaming services (Spotify, Deezer, Napster, Xbox Music, Google Play Music, Sony Music Unlimited, among others) have displaced public and open radio services (Mejía, 2020).

With the information used by Mejía Barquera (2020) that he titled 'Use of Information Technologies in Mexican Households: 2005-2018', conducted based on the National Survey on Availability and Use of Information Technologies in Households of 2018 of the Instituto Nacional de Estadística, Geografía e Informática (INEGI) -National Institute of Statistics, Geography and Informatics-, I restate that table presenting the figures in millions of households and the percentage of use and availability that the Mexican population had on each media in different years:

Table 1: different media in advertising (year wise scenario)

Years	**2005**	**2010**	**2015**	**2018**
Computer	4.7	8.4	14.6	15.5
	18.6%	29.8%	44.9%	44.9%
Internet Contection	2.2	6.2	12.8	18.3
	9.0%	22.2%	39.2%	52.9%
Television	23.6	26.8	30.5	32.2
	92.8%	94.7%	93.5%	92.9%
Pay Television	4.9	7.5	14.3	16.3
	19.5%	26.7%	43.7%	47.3%
Telephony fixed and mobile	16.4	22.8	29.1	31.9
	64.1%	88.6%	89.3%	92.2%
Radio	22.7	23.3	21.5	19.4
	89.3%	82.5%	65.8%	56.2%

The table presented shows that television has always remained with about 93% of presence in Mexican households for fourteen years (2005 to 2018). Radios in homes were only 3.5 percentage points below the number of homes that had television, but in 14 years they decline to 33.1 percentage points, which shows an absolute decline of radio devices in Mexican homes.

Internet connection in the nation's homes grew formidably, from being present in only 9% of Mexican homes in 2005, it goes to 52.9% of them in 2018, being observed as the one with the highest growth and dynamism of the data presented. The presence of computers and pay TV in households increases in parallel. It is also observed that in 2018 the percentage of households with telephony (fixed or mobile) is similar to that with television in our country (92.2% and 92.9% respectively).

Table 2: Regression statistics

With the information presented by Mejía Barquera (2020) and corresponding to 1os years from 2005 to 2018 (14 years), I found that the most significant relationship is that as a higher percentage of computers are counted or used in Mexican households, the percentage of ownership or use of radio devices in our country tends to go down. The correlation coefficient in this case is 96.2% with a negative sign.

Now I will perform a linear regression analysis between the percentage of households that have a radio device and the percentage of households that have internet service in Mexico (from 2005 to 2018). The dependent variable in this case is the percentage of households that have a radio set and the independent variable is the percentage of households that have internet service. In this case I will use the four most commonly used tests in

Regression statistics			
Multiple correlation coefficient	0.9924		
Coeficient of determination R^2	0.9849		
Adjusted R^2	0.9836		
Estándar error	0.0149	*DW Coefficient*	1.08
Observations	14		

ANALYSIS OF VARIANCE	*Degrees of freedom*	*Sum of squares*	*Mean squares*	*F*	*Critical value of F*
Regression	1	0.1743	0.1743	780.7983	0.00000
Residuals	12	0.0027	0.0002		
Total	13	0.1769			

	Coefficients	*Standard error*	*t-statistic*	*Probability*	*Lower 95%*	*Upperr 95%*
Intercept	0.9764	0.00854	114.37114	0.00000	0.95783	0.99503
% Internet	-0.7622	0.02728	-27.94277	0.00000	-0.82162	-0.70276

econometrics: 1) The coefficient of determination (R2); 2) F-test (Fisher); 3) Student's t-statistic; and 4) Durbin Watson (DW) coefficient.

In the regression presented, the percentage of households that have internet service can explain 98.4% of the values observed in the percentage of households that have radios or use them in reverse. Thus, the variables not included in this regression can explain 1.6% of the data observed in the independent variable. The negative regression means that if the percentage of households with Internet service increases, the percentage of households with a radio would decrease in the same proportion.

In the calculated F test the value is 780.79 (which exceeds the value of 8.86 of tables for 14 observations), so it is assured that with a confidence level of 99% of the percentage of households with internet service explains with a very high degree of significance the observed values of the percentage of households that have a radio. The critical value of F can be seen in zeros to five decimal places, which reconfirms that the independent variable presents a very high significance for the explanation of the dependent variable.

Substituting values in the Durbin Watson test for 14 observations and 1 independent variable, the tables show the lower critical value of 1.045 and upper critical value of 1.35 ((1.045<1.08<1.35), which shows that there is no positive or negative autocorrelation in the regression presented and the statistical tests are considered valid.

It is observed in the regression that the t-statistic has a value of -27.94, which is much higher in absolute terms than the 2.62 of the tables, with a confidence level of 99%. When the t-statistic presents negative values, it means that when the percentage of households with internet service increases, there is an automatic and proportional decrease in the percentage of households that have a radio. In addition, it can be seen that the Probability test presents zeros to five decimal places, which confirms the aforementioned explanation.

On the other hand, one of the measurements that demonstrates the decline in the presence of radio receivers in the country is the 2019 National Survey of Audiovisual Content issued by the Instituto Federal de Telecomunicaciones (IFT) -Federal Telecommunications Institute- (2020: 9-11), from which I derive that only 42% of people of this amount 73% who listen to the radio, do so exclusively on FM stations, while 11% on AM stations, 12% both and the remaining 4% do not know.

By sectors, segments and places where they listen to radio, those surveyed by IFT (2020: 28-30), express these preferences:

- By type of program: 83% prefer music, 39% news, 13% sports, 9% humor-comedy, 7% debate-opinion, 7% cultural-scientific, 4% lifestyle-magazine program, 2% radio soap operas and 2% children's programs.
- By type of device: 52% on stereo-recorder, 25% cell phone, 24% on portable radio, 16% on car-transport radio, 5% on smart speakers, 2% on computer or laptop and 1% on Tablet.
- By type of place where they listen to the radio: 78% listen at home, 21% at work, 10% in a private car, 10% in public transportation and 1% in a commercial establishment.
- 7% of the people who listen to the radio do it on the Internet, with the following reasons for this preference: 33% because it is better to listen to, 19% only broadcast on the Internet, 19% do not have a radio set, 19% because they can listen to repeated programs (podcast), 19% because they do not have commercials and 17% because the radio signal does not reach their locality.

According to INEGI figures (cited by Corona, 2021) the radio audience has a marked preference for this type of programs: 82.8% listen to entertainment programs; 64.3% prefer news programs; and 21.1% listen to sports-related programs.

Another aspect that can be drawn from the data provided by the IFT is that 36.5% of people over 45 years of age usually listen to radio, while just under 20% of people between 25 and 44 years of age listen to it, and less than 15% of people between 18 and 24 years of age listen to radio. It can also be concluded that open radio is a medium that is consumed more in popular sectors of society, since only 4.2% of the radio audience is located in the level called A/B (the highest economic level), 35% is located in level C, while the majority 60.8% are listeners of level D, the lowest income level (Mejía, 2020).

By metropolitan areas of the Mexican nation, the Federal Telecommunications Institute (IFT, 2021: 29-39) in its report for the First Quarter of 2021, points out the percentages of people and the times they listen to radio, finding these data:

- Mexico City: a) The largest audience of male radio listeners is reached from 8 to 9 am Monday through Friday, with 20.85% of radios turned on; b) The largest audience of women is reached between 10 and 11 am Monday through Friday with 19.55% of radios turned on; c) 81% of people listen to FM band and 19% AM.
- Guadalajara: a) The highest male audience is registered from 9 to 10 hours from Monday to Friday, reaching 16.96% of radios turned on; b) The highest female audience is from 11 to 12 hours from Monday to Friday, with 13.25% of radios turned on; c) 89.9% of people listen to FM band and 10.1% to AM.
- Monterrey: a) The highest audience for men and women is registered from 10 to 11 hours from Monday to Friday; with 9.35% and 6.22% respectively of radios turned on; b) 89.8% of people listen to FM band and 10.2% AM.

Of the three large metropolitan areas of the country, it is observed that most people tune in to the radio in Mexico City, with 20% of people with radios on during prime time; it can also be seen that in this area one out of every five people tunes in to the AM band, while in

Guadalajara and Monterrey it is one out of every ten people who tune in to the AM band. Monterrey is the area where people listen the least to radio.

In terms of average radio consumption in Mexico corresponds to 2.5 hours a day, according to figures from the National Institute of Statistics, Geography and Informatics (INEGI), where another data to highlight is that 41 million people aged six years and older are radio users (Corona 2021).

2 Radiophonic Groups at present

Sosa Plata (2011: 97) comments that in 2010 the concentration of radio frequencies in a few groups had not varied much, around 70% of the total number of concessioned stations granted in the country (in property or through affiliation) were controlled by 10 radio groups: Radiorama, Grupo Acir, Organización Impulsora de Radio, Organización Impulsora de Radio, Sociedad Mexicana de Radio, Promosat de México, Radiodifusoras Asociadas, MVS Radio, Organización Radio Fórmula and Multimedios Estrellas de Oro. Among the ten groups with the highest concentration of concessions, Sosa does not report Grupo Radio Centro.

Huerta Wong & Gómez García (2013: 130) regarding radio concentration state: "It should also be clarified that not all groups operate in national chain. The results of the indexes suggest a low concentration of the radio market in Mexico".

The IFT (2019: 141; cited by Vidal, 2021: 86) reports that in 2019 there were 1,373 radio concession titles for commercial purposes, out of a universe of 2,003 licenses, following with that same information provided by the IFT radio reaches 96% of the population, 56% of households have a radio set and 8.9% of advertising expenditure (out of a total of 350 million dollars) was destined to commercial stations.

Another approach to the study of radio groups or chains is to determine the degree of concentration of stations. According to the diagnostic study of the Sound Broadcasting Service in Mexico prepared by the IFT in early 2020, analyzed by Carla Martínez (2020) the most important radio groups in Mexico are:

- Grupo Radiorama: with 183 stations (13.2% of the total) and reaches 70.3% of the population.
- Grupo Radio Centro: with 49 stations (3.6%) and reaches 49.2% of the population covered.
- Televisa: with 17 stations (1.2%) and reaches 48.6% of the population.
- MVS Radio: with 35 stations (2.5%), reaching 41.8% of the population.
- Grupo Fórmula: with 39 stations (2.8%) and reaches 51.6% of the population.
- Grupo ACIR: with 56 stations (4.1%) and reaches 51.1% of the population.
- Radio Mil: with 9 stations (0.7%) and a reach of 28.9% of the population.
- MM Radio (Mutimedios): with 44 stations (3.2%) and population coverage of 17.3%.

Around 100 radio concessionaires in the country (7.3% of the total number of commercial concessions) had two concessions and approximately 184 concessionaires (13.4%) had only one concession.

Vidal Bonifaz (2021: 85) shows us that there are currently four large groups of open commercial radio in Mexico, where with their presence they control a quarter of the stations in the country, however, the degree of concentration is lower than what had been reported in various academic studies on the subject, facing a situation in which these four groups coexist with hundreds of companies or individuals who control one or two radio stations at the most.

Surely the indicators of number of concessions or national population coverage are important, but even more important, in my point of view, is the audience that each of the radio groups in the country has: Radio Centro has 15.1%, Grupo Televisa 11.85%, Grupo ACIR 10.88%, Grupo Radiorama 10.69% and Grupo MVS 10.37% (Martínez, 2020).

2.1 Economic information of the main radio groups

Mejía Barquera (2020) exposes the distribution of Advertising Expenditure by Media in Mexico 2011-2015, which he takes from CNN Expansión, with information from Media Agencies, I partially reproduce it and it is expressed in percentages:

Table 3: Economic information of the main radio groups

Years (%)	2011	2012	2013	2014	2015
Television	55	53	52	52	50
Internet	7	9	11	14	16
Radio	9	9	9	9	9
Outdoor	8	8	8	8	8
Pay Television	7	8	8	7	8
Newpappers	8	7	7	6	5
Others: Magazines-Cinema	6	6	5	4	4

The table presented shows that within the advertising pie in Mexico, the share of broadcast television fell by five percentage points compared to four years earlier, although it retains just half of all the investment made. From 2011 to 2015, radio in the country absorbed 9% of total advertising in national media. Where a substantial increase is observed and which represents more than the double is in the advertising paid by internet, which from representing 7% in 2011 went to represent 16% of the national advertising market in 2015, which shows its dynamism and the marked growth in the last three years presented in the table.

Similarly, Mejía Barquera (2020) presents other information regarding Media Advertising Spending in Mexico: 2015-2018, which is sourced from Merca2.0. Infographic: Advertising Investment in Mexico, March 2019.

Table 4: advertising pie in Mexico

Years (%)	2015	2016	2017	2018
Free-to-air and pay TV	62.9	61.6	58.8	55.8
Internet	12.6	14.5	16.6	19.2
Outdoor	8.4	8.4	8.8	9.0
Radio	8.5	8.4	8.6	8.9
Newpapers, Magazines, Cinema	7.6	7.1	7.2	7.1

This information shows that broadcast and pay TV lose 7.1 percentage points from 2015 to 2018 and radio advertising increases by 0.4 percentage points. Again, with this different source of information, the one that gains 6.6 percentage points in the national advertising market is the investment in internet, which consolidates as the most dynamic advertising medium during the last 7 years presented (from 2011 to 2018).

Moving on to the subject that concerns us, although radio broadcasters do not generate sufficient income as in previous decades, it is also true that the economic information of the main radio groups in Mexico is not so easily known, proof of this is what Sosa Plata (quoted by Rodríguez, 2016: 20) expresses:

> ...we must not lose sight of the fact that the economic situation of the industry is not known for sure...It is not a transparent industry and therefore we do not know for sure if they have really done as badly as they say.

Regarding the opacity of the radio groups' income information, Huerta Wong & Gómez García (2013: 130) point out that they only have information on the number of stations, but not on the actual income and audiences they present.

Of the largest radio broadcasting groups in the country, only Grupo Radio Centro (GRC) has been independently listed on the stock exchange since 1993, while Televisa-Radio's share can be divided from the total of Corporative Televisa, with which two of the companies that dominate the radio broadcasting sector in the country issue annual public information to the Mexican Stock Exchange. The rest of the radio groups are secretive or are not very inclined to provide financial information to the public.

Of the national advertising budget, radio concentrated 15% of the income in 1980, beginning to decline in the nineties, since by 1995 it had decreased to 9%, where in addition the purchase and sale of radio productions was propitiated, as an example radio newscasts from Mexico City were heard in the cities of the rest of the country, thanks to commercial agreements (Legaspi, 2018: 370),

In the case of the newscast with the greatest acceptance and sales in Mexico City, which corresponded to Monitor de Radio Red de Gutiérrez Vivó, the production sales scheme of this newscast was marketed in the most important cities of the country since the early 1980s, managing to have more repeaters in province than any of the other news producers nationwide (Villalobos, 2021: 13-14).

At the beginning of the century, 473 FM stations obtained 72% of advertising revenues in 2003, while the 760 AM stations achieved revenues of 28% (Sosa, 2011: 100).

Huerta Wong & Gómez García (2013: 130) indicate that from 2004 to 2010 the percentage of advertising investment that corresponded to radio in our country increased by two percentage points, going from 8% in 2004 to 10% from 2006 to 2010, where the total advertising investment in Mexico allocated to radio was 5 billion pesos. The authors indicate that in 2011, the former Federal Telecommunications Commission stated that in the aforementioned period there was a sustained annual increase in investment, which placed radio as one of the favorite media of Mexican audiences.

Regarding the most recent radio investment in advertising, López Devora (2020: 21) points out that this expenditure corresponded to 5.6% of total media advertising expenditure. With information provided by the Consejo de Investigación de Medios (CIM) –Media Research Council- (2020: 18-19; 2021: 21-24), where we see that the total advertising investment market in Mexico, I elaborated this table summarizing the advertising market for Mexico:

Table 5: advertising market for Mexico

Year	Total Investment (millions)	Increment	Real Increment	Private Investment (millions)	Increment	Public Investment (millions)	Increment
2016	87,054			79,073		7,981	
2017	93,159	7.0%	0.2%	85,644	8.3%	7,515	-5.8%
2018	95,893	1.4%	-1.8%	88,814	3.7%	7,079	-5.8%
2019	94,115	-1.9%	-4.6%	91,481	3.0%	2,634	-62.8%
2020	83,906	-10.8%	-13.6%	82,084	-10.3%	1,822	-30.8%

A decrease in nominal terms is observed for the last two years in total advertising investment, which will be more acute in 2020 due to the pandemic and the COVID-19 contingency. Meanwhile, with real rates (discounting inflation), it has been decreasing since 2018. The drop in public investment in advertising in 2019 is due to the policy followed by López Obrador of austerity in the exercise of public spending, in addition to the fact that perhaps some of the millions that were paid before were covered for what the head of the federal executive has called on multiple occasions "chayoteros", that is, payments to journalists or holders of communication spaces so that they would speak well of the government in office. In 2020 he continues with this austerity policy, together with the COVID-19 contingency.

Another interesting point of comparison given by the Media Research Council (2020: 20; 2021: 25) is that Mexico allocated 0.38% of GDP for the national advertising market in all media in 2019, while Spain allocated 0.41% of GDP, Brazil 0.45%, China 0.9%, United Kingdom 1% and United States 1.33% of GDP; allocating our country 0.32% of GDP in 2020, the rest of the countries maintained similar percentages to the previous year.

With information from the Media Research Council (CIF, 2020: 35; CIF, 2021: 41) radio remained with 10.3% of total national advertising in 2016; with 9.4% in 2017; 7.8% in 2018; 6.5% in 2019 and 5% in 2020. In this way we see that radio's share of total advertising in the country has declined in the last four years, coming to represent half of the share it experienced in 2016, meaning losing 5.2 percentage points of the total pie from 2016 to 2020.

In information by radio conglomerate, Grupo Radio Centro (GRC, 2018: 128; 2021: 20) in its Annual Report for 2017 and 2020 reports that transmission revenues in millions of pesos corresponded to the following amounts: 1,539.5 in 2016; 1,377.3 in 2017; 1,124 in 2018; 960.3 in 2019; and 629 in 2020.

From the analysis of the transmission revenues obtained by Grupo Radio Centro (GRC), it is observed that they had a negative growth rate (without deflating) in the last four years: -10.5% in 2017; -18.4% in 2018; -14.6% in 2019 and -34.5% in 2020. As can be seen revenues dropped brutally in the five-year period in GRC, for every 10 pesos they obtained in 2016 they came to register only 4 pesos of revenues in 2020.

At the national radio industry level and according to information provided by the Media Research Center, in 2016 GRC obtained 17.2% of total revenues; 15.7% in 2017; 15.1% in 2018; 15.8% in 2019; and 14.9% in 2020. Thus we have that GRC obtained a little less than one-sixth of the total pie shared by Mexico's broadcasters in the last five years.

Grupo Televisa (2018: 99-100; 2021: 75-76) also reports data on the Mexican Stock Exchange corresponding to the integration of the radio part of the group. In its corresponding financial statements in the Segment Sales section it presents the following information in millions of pesos: 786.5 in 2015; 814.2 in 2016; 851.1 in 2017; 920 in 2018, 841.4 in 2019 and 223.3 in 2020.

From 2016 to 2019 the advertising sales of Televisa's radio part grew 3.3%, while the radio industry observed a growth of -31.8% (decrease) in that four-year period, with which it can be seen that Televisa-Radio continued to retain its paid advertising despite the decrease of almost a third of the national radio industry.

Table 6:

Ministry of Public Function. Millions of pesos
Summary of Social Comunication Contracts 2012-2018

Radio Group	2012-2015	2016	2017	2018	Total
Radio-Tele Fórmula	953.9	318.7	282.8	348.2	1,903.6
Núcleo Radio Mil	402.4	119.7	117.5	140.4	780.0
Radiorama	391.3	115.5	100.1	87.2	694.1
Imagen Radio/Imagen Soluc.	349.0	185.0	204.9	242.6	981.5
Grupo Radio Centro	444.0	178.8	112.9	97.2	832.9
Stereo Rey México	188.6	57.8	93.3	138.0	477.7
Grupo ACIR	179.9	47.4	53.9	56.4	337.6
SUM	2,909.1	1,022.9	965.4	1,110.0	6,007.4
SUM without Radio Centro	2,465.1	844.1	852.5	1,012.8	5,174.5

Source: Own elaboration. With information from the Institute for Transparency, Acces to Information and Protection of Personal Data. Summary of Comunication contracts. Secretariat of the Comptroller's Office. June 6, 2019 https://inicio.ifai.org.mx/presentaciones/1Resumen.xlsx

Similarly, relating this information with the one we took from the CIM, we have that in relation to the total revenues received by the country's broadcasters Televisa-Radio obtained 9.1% in 2016, 9.7% in 2017, 12.4% in 2018, 13.8% in 2019 and 5.2% in 2020. Noting that for this last year its radio stations were already for sale. In full years (2018 and 2019) Televisa-Radio took just over an eighth of the total national radio advertising pie.

If we add the participation of GRC and Televisa-Radio, we have that for 2018 between the two of them they took 27.5% of the total radio advertising market in Mexico, while for 2019 they absorbed 29.6%, in other words, these two large radio groups together took 3 out of every 10 pesos of the total radio industry pie.

Since there is no public data for the rest of the large Mexican radio groups, I will make some estimates based on the public information that is released.

From the figures provided by the Instituto Nacional de la Transparencia, Acceso a la Información y Protección de Datos Personales -National Institute for Transparency, Access to Information and Protection of Personal Data- (INAI, 2019) I will proceed to mention only the advertising expenditure that the main radio groups in the country received from the federal government (private investments are not included), presenting the percentage that each radio group obtained from the governmental advertising expenditure:

- Radio Fórmula / Tele Fórmula (Radio): 3.6% in 2016, 3.2% and 4.7% in 2018. First place.
- Imagen Radio / Imagen Solución: 2.1% in 2016, 2.3% and 3.3%. Second place.
- Núcleo Radio Mil: 1.3% in 2016 and 2017, and 1.9% in 2018.
- Radio Centro: 2% in 2016%, 1.3% in 2017 and 2018.
- Radiorama: 1.3% in 2016, 1.1% in 2017 and 1.2% in 2018.
- Stereo Rey Mexico: 0.6% in 2016, 1.1% in 2017 and 1.9% in 2018.
- Grupo ACIR: 0.5% in 2016, 0.6% in 2017 and 0.8% in 2018.

The seven aforementioned groups obtain government advertising revenues in relation to total national radio revenues: 11.4% in 2016, 11% in 2017 and 14.9%. By virtue of the fact that Radio Centro we already dealt with it separately, we would have that the remaining 6 radio corporations obtained 9.4% in 2016, 9.7% in 2017 and 13.6% in 2018, in the ratio government advertising / total radio revenues.

It can also be inferred that of Grupo Radio Centro's total revenues, these percentages come from federal public spending: 8.2% in 2017 and 8.6% in 2018.

Of total Mexican radio revenues in 2018: Grupo Radio Centro obtained 15.1%; Televisa-Radio 12.4%; while only with advertising paid by the federal government the remaining six groups (Fórmula, Imagen, Radio Mil, Radiorama, Stereo Rey and ACIR) obtain 14.6% of total radio revenues in Mexico. Adding the eight radio groups together, they obtain at least 41.1% of the total income of the radio industry in the country. Thus, it can be derived, without being a precise data, that the eight most important large radio groups in the country obtained more than 50% of the revenues of the Mexican radio industry in 2018.

3. Digital radio in modern times of communication.

Radio programming fulfills two fundamental aspects: 1) Offering constant music to a massive audience; and 2) News and its commentaries, in its opinion aspects or interviews to public or private personalities. The first function of radio, to offer continuous music, has been called 'music box', which had its main function for almost half a century and was once considered the essence of radio. The news part in radio had its high point in the eighties and nineties, remembering that its origin is located in 1974, with the birth of Monitor in Radio Red, headed by José Gutiérrez Vivó as conductor and with Clemente Serna Alvear as president of Radio Programas de México (Villalobos, 2021: 13).

Continuing with this consideration, when we talk about digital radio we have to distinguish between radio production that is transmitted through the radio spectrum (traditional radio) and that which is reproduced via the Internet (new radio). Currently most of the audio production with radio language is done using digital resources, and can be transmitted by two ways or paths: 1) Analog, through the AM or FM bands; 2) Through the network or airspace, using the technology called Digital Sound Broadcasting (RSD), which is also transmitted through the AM or FM bands.

For the last decade, the processes of digitalization, frequent use of the Internet and social networks have significantly changed the radio industry, which has given rise to the term cyber radio or 'the new radio' or 'radio of the future'. A point that we should not forget is that listeners go listening to conventional live radio when driving or when accompanying a driver on journeys to their destination, but when they get home they turn on the computer or similar device to listen to an asynchronous reception program, except for soccer matches or some other sports activity (Ullmann; cited by Ibarra, 2017: 29).

In this sense, Oscar Bosetti (2012; cited by Ibarra, 2017: 6) highlights that with respect to the new radio no one buys a traditional receiving device to listen to radio anymore, so radio is in a transition process. In a similar sense, Mejía Barquera (2020) points out that in current times and especially in the last two decades, sound broadcasting or open radio that is transmitted through the frequencies of the radio spectrum in the AM and FM bands, has lost its exclusivity, where technological convergence has brought as a consequence that the distribution of radio products can also be made through multiplatform, where podcasting and streaming can be used.

The most important radio stations have started to broadcast their content through websites, where they transmit in real time the same programming they broadcast over the radio spectrum (AM or FM bands). In addition, traditional radio stations face competition from other forms of digital distribution, such as homogeneous products or the same as radio news, but the advantage is that such programs do not need to have a concession in the radio spectrum (Mejía, 2020).

Having a radio station on AM or FM frequency is not easy, since multiple requirements must be met: 1) The number of available frequencies is limited; 2) Obtaining a concession implies competing with other applicants and a long process of political-administrative procedures; 3) An investment is required to pay for personnel, facilities and purchase of distribution and transmission equipment, which is not affordable for everyone.

The advantages of Internet broadcasting of interviews and newscasts are: 1) They do not require a concession to broadcast news content programs or interviews with outstanding personalities; 2) The products can be placed in podcast format on personal pages, so that the user can watch them whenever he/she wishes; 3) The product can be susceptible to reach everyone who is interested in it. The disadvantage of Internet products is that if the broadcaster is unknown, his product may go unnoticed, due to the large amount of audio offerings circulating on the Internet.

Cebrián Herreros (2009: 11) has been one of the authors who has dealt with the subject of radio in Mexico in greater depth, pointing out that there used to be two traditional models (generalist and specialized) where the problems of the industry were addressed, but that now an innovative evolution has been born that goes from continuity programming to an offer of programs, fragments or isolated contents, as well as new sound expressions of multimedia nature, involving interactivity, searches and links, which he has called cyber radio.

Similarly, González Conde (2010: 52; cited by Ibarra, 2017: 14), understands that cyber radio has modified the traditional conception of radio media, the conventional and the specialized, seeking a new formula of fragmented programming or isolated contents, which replace programs of continuity and mass audiences. J. Celaya (2008: 73; quoted by Rodríguez et al, 2020: 52) points out the same role for radio in the digital era.

Regarding the treatment of the podcast and its relationship with conventional radio, there are two currents or schools that point out whether there is a correspondence between the two forms of communication: 1) The one that points out that the podcast will irremediably replace traditional radio; and 2) Those who see the podcast as the second life of traditional radio. In the first current they place Iván Ullmann and Lucía Parravicini and in the second one Esther Luque, Agustín España and Chelo Serrano (Ibarra, 2017).

CONCLUSIONS

The average radio consumption in Mexico is two and a half hours a day, according to INEGI, where there are 41 million people aged six or more who are radio users in the country. More people listen to the radio from Monday to Friday than on weekends, where a higher percentage of men listen to it than women. In Mexico City, radio is most listened to from 8 to 9 a.m., while in Guadalajara and Monterrey it is most listened to one hour later. Women listen more to radio from 10 to 11 am.

From 2005 to 2018, television retains 93% of presence in Mexican households, while radio falls from 22.7% to 19.4%, falling back by 3.3 percentage points, which implies a drop in households with radio sets. Internet connection covered only 9% of Mexican households in 2005, rising to 52.9% in 2018, presenting an overwhelming growth and dynamism in that period.

Making use of econometrics, in the linear regression calculated with data from 2005 to 2018, the percentage of households with internet service can explain 98.4% of the values observed in the percentage of households with radio sets in the negative sense. This means that if the percentage of households with internet service increases, the percentage of households with or using radio sets would decrease in the opposite direction and in the same proportion.

In recent years radio advertising is falling sharply, in 2016 the radio industry was left with 10.3% of total advertising spending in the country, while by 2020 it was only left with 5%, observing a drop to less than the share it had four years earlier.

Grupo Radio Centro absorbs an average of 15.4% of advertising from 2016 to 2020, while Televisa Radio takes 12% (before the sale of stations). In 2018, adding both groups together, they took 27.5% of the total national radio revenues, being 29.6% for 2019, which tells us about the power of both radio conglomerates. If we were to add six other important radio groups (Fórmula, Imagen, Radio Mil, Radiorama, Stereo Rey and ACIR), we would have that the eight corporations obtained at least 41.1% of the national radio revenues in 2018, to have the full picture we would have to add the advertising of private companies that made these radio groups (information that is not publicly available).

In these times of the digital era no one buys traditional devices to listen to radio anymore, so radio station transmissions are losing exclusivities of their radio electric aspect (AM-FM), causing that the distribution of radio products can also be made through multiplatform, where podcasting and streaming can be made use of. The most important radio stations have started to broadcast their contents through websites, where they transmit in real time the same programming they broadcast on their AM or FM bands.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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