Mediametrie

CESP

Leveraging automatic measurement to develop Radio and Audio measurement in France

EMRO Marrakesh 2023

Developments in Radio audience measurement in France

New Radio audience measurement

Built on two foundations

An optimised CATI survey

An optimised survey for **the reference Radio audience measurement for a typical day.**

Large-sized sample to take into account the diversity and plurality of the radio landscape, and to reflect the audience at :

- **> a national level** (4 times a year)
- **> a local level** (once a year)

In operation since September 2021

A Personnal Automatic Meter (RateOnAir)

A permanent automatic panel (AIP) to **measure Radio listening behaviour over several days**

Analysis available throughout the season In greater depth

Adhoc analysis

In operation since September 2022

Focus on headphone listening

Headphone listening

Headphone plugin are insufficiently used by panelists. Médiamétrie has therefore developed a **statistical model** to complete **EAR > Insights** with headphone listening using data collected in **EAR > National** CATI survey.

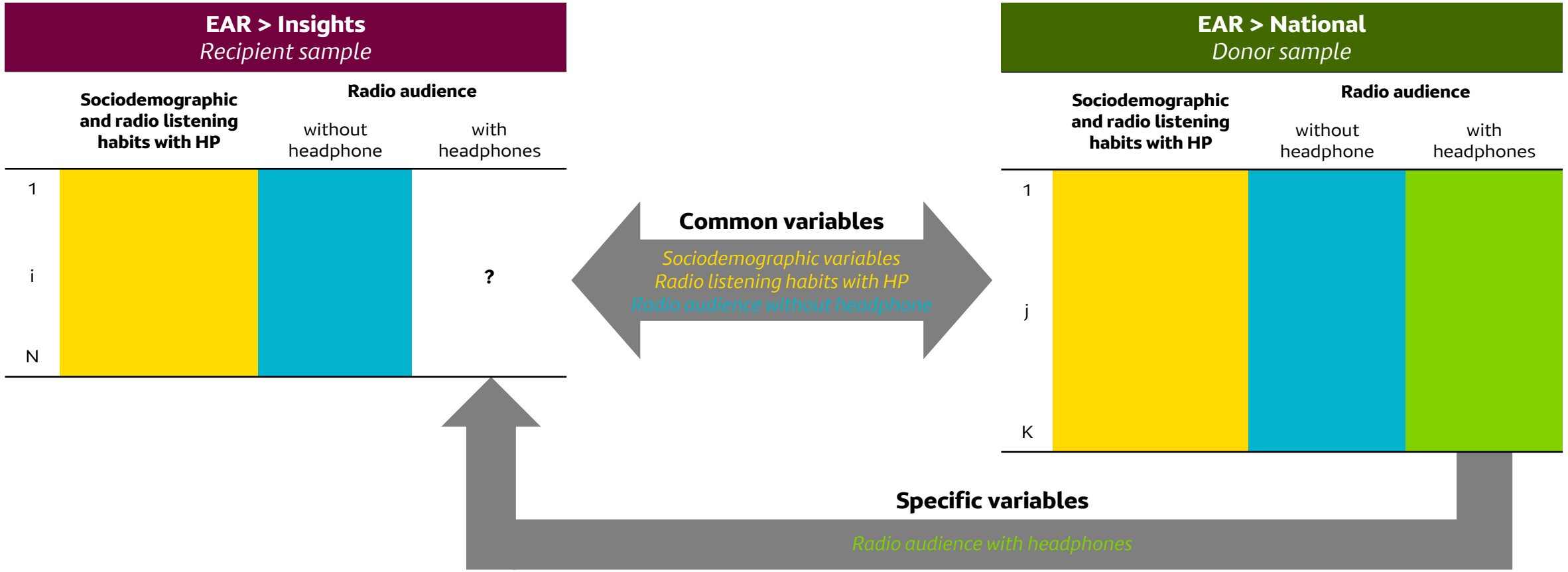
Headphone module in EAR > National CATI survey

- **Collection of radio listening habits with headphones during the week and the week-end**

- **For each listening session reported in the _Audience_ module, qualification of listening : with / without headphone**
« Nous allons rapidement reprendre les stations que vous avez écoutées hier et/ou aujourd'hui et pour chacune de vos écoutes, vous me direz si vous avez écouté cette station avec des écouteurs ou un casque ».

Headphone modelling

Statistical matching based on a *Donor-Recipient* approach



Headphone modelling

Three main steps (1/3)

Definition of matching classes

The data are classified into “matching classes” which are identically defined in the *Donor sample* and in the *Recipient sample*. Data sets only within the same class are allowed to be matched.

Note : as the matching is applied independently by class, it also allows to optimize the calculation time (parallelization of the calculations).

Matching classes are defined by crossing the two variables that most explain the headphone listening behavior :

- the radio listening habits with headphones (regular vs. occasional)
- the age (13-24 yrs, 25-34 yrs, 35-49 yrs, 50 yrs and over)

⇨ **A total of 8 matching classes**

Headphone modelling

Three main steps (2/3)

Calculation of the distance

The distance quantifies the proximity between recipients and their potential donors. The choice of the distance function depends on the nature of the common variables.

Common variables selected : Radio audience without headphone by station or aggregate and by time slot (12-6am/6-9am/9am-2pm/2-6pm/6pm-12am)

⇨ **Over a hundred binary variables**

Choice of **Jaccard's distance** :

$$d_{ij}^{J} = 1 - \frac{M_{11}}{M_{11} + M_{10} + M_{01}}$$

M_{11} = number of stations × time slots listened by both i and j
M_{10} = number of stations × time slots listened by i and not j
M_{01} = number of stations × time slots listened by j and not i

Headphone modelling

Three main steps (3/3)

Matching

The matching process consists of selecting for each individual of the recipient sample a donor among the donor sample.

The same donor can be used for different recipients, but the number of replications of the same donor can be controlled by the matching algorithm.

Choice of **Least Cost Method** (procedure to solve transportation problem).

Robust and reproducible algorithm that allows to control donor replication.

Headphone modelling

Least Cost Method algorithm : illustration

1st step : use all potential donors (if possible)

The number of marriages allowed per donor in the 1st step is 1.

		Recipients					
		1	2	3	4	5	
Donors	1	0,2	0,2	0,5	0,6	0,7	1
	2	0,1	0,8	0,3	0,2	0,4	1
	3	0,7	0,9	0,4	0,1	0,5	1
		1	1	1	1	1	

Number of marriages allowed

Headphone modelling

Least Cost Method algorithm : illustration

1st step : use all potential donors (if possible)

		Recipients					
		1	2	3	4	5	
Donors	1	0,2	0,2	0,5	0,6	0,7	1
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	3	0,7	0,9	0,4	0,1	0,5	1
		0	1	1	1	1	

⇨ *Donor 2* is matched to *Recipient 1*

Headphone modelling

Least Cost Method algorithm : illustration

1st step : use all potential donors (if possible)

		Recipients					
		1	2	3	4	5	
Donors	1	0,2	0,2	0,5	0,6	0,7	1
	2	0,1	0,8	0,3	0,2	0,4	0
	3	0,7	0,9	0,4	0,1	0,5	0
		0	1	1	0	1	

⇨ *Donor 3* is matched to *Recipient 4*

Headphone modelling

Least Cost Method algorithm : illustration

1st step : use all potential donors (if possible)

Donors	Recipients 1	2	3	4	5	
1	0,2	**0,2**	0,5	0,6	0,7	0
2	**0,1**	0,8	0,3	0,2	0,4	0
3	0,7	0,9	0,4	**0,1**	0,5	0
	0	0	1	0	1	

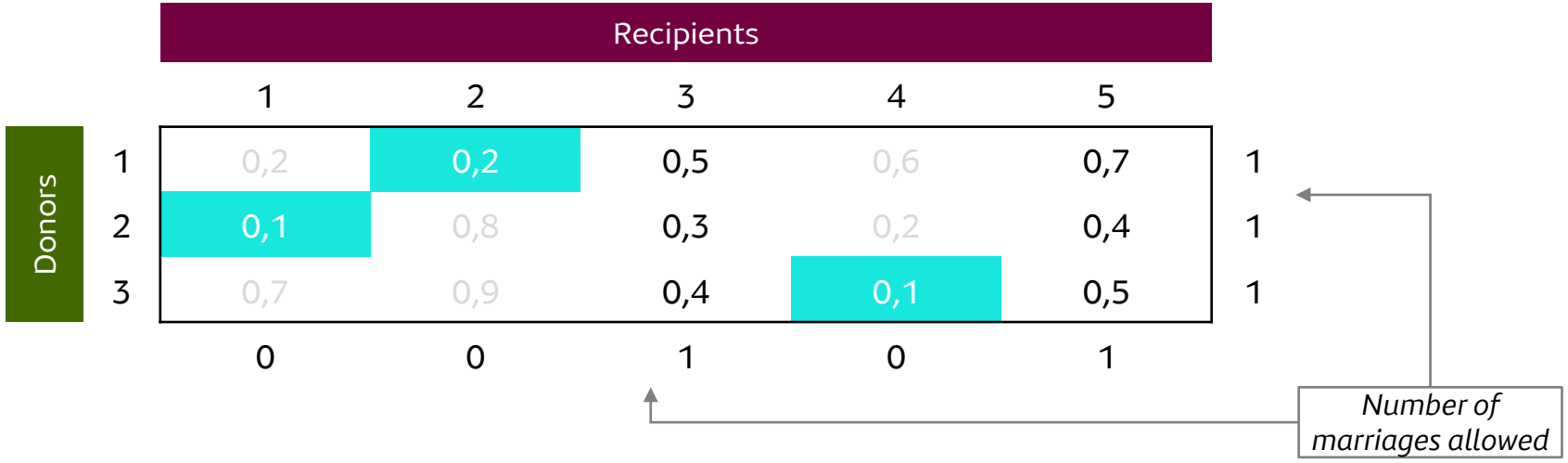
⇨ *Donor 1* is matched to *Recipient 2*

Headphone modelling

Least Cost Method algorithm : illustration

2nd step : allocate a donor to each recipient

The number of marriages allowed per donor in the second iteration is again constrained so as to limit the number of replications of the same donor.



Headphone modelling

Least Cost Method algorithm : illustration

2nd step : allocate a donor to each recipient

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	2	0,1	0,8	0,3	0,2	0,4	0
	3	0,7	0,9	0,4	0,1	0,5	1
		0	0	0	0	1	

⇨ *Donor 2* is matched to *Recipient 3*

Headphone modelling

Least Cost Method algorithm : illustration

2nd step : allocate a donor to each recipient

		Recipients					
		1	2	3	4	5	
Donors	1	0,2	0,2	0,5	0,6	0,7	1
	2	0,1	0,8	0,3	0,2	0,4	0
	3	0,7	0,9	0,4	0,1	0,5	0
		0	0	0	0	0	

⇨ *Donor 3* is matched to *Recipient 5*

Headphone modelling

A **pragmatic** and **cost effective** method but…

which leads to a **loss of granularity**

so limited to mediaplanning datafiles for now while waiting for further developments

CESP Audit and support

CESP supported the different steps of the project

Fieldwork support

- 2018-2019

Key learnings

1. Not easy for a panellist to be a good participant and respect all the 5 rules defined by Médiamétrie

2. It is very often necessary to adapt some of the participating rules (e.g., some people can't wear the meter at work; not natural and sometimes a constraint to wear the meter at home)

3. CESP underlines that some institutes conducting similar surveys with a panel recruitment and a meter, choose a short panel participation duration and a detailed explanation on the data collected

- **CESP recommended to align the panellists' participating rules and the panel management**

- **CESP suggested conducting a test with a limited duration of panel participation**

CESP supported the different steps of the project

A smart approach to increase the number of observations

4 waves

Churn rate:
2%
different
according to
target groups

Enables to increase the number of observations per cell on which applying media planning modelling

CESP reminded that the panel size will remain the size of the panel of distinct individuals.

CESP recommended not reducing any further the panel sample size.

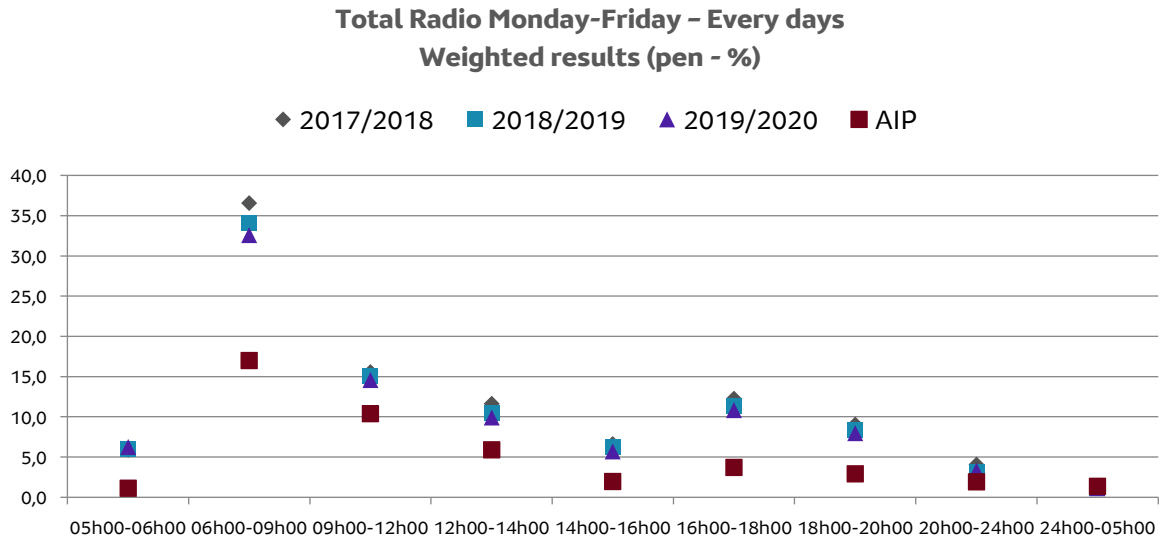
New listening frequencies… an impact on media planning results

Former Radio Panel (diary)

Listening frequencies are claimed by panellists

EAR>Insights

Listening frequencies are calculated from the meter automatic measurement on a “constant panel” observed for 4 3-weeks waves



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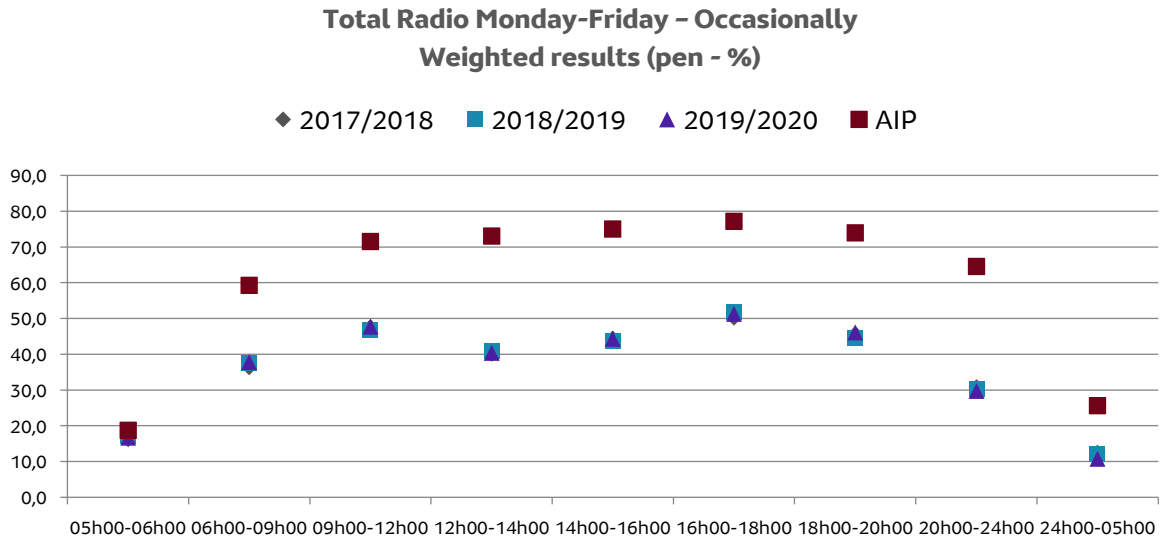

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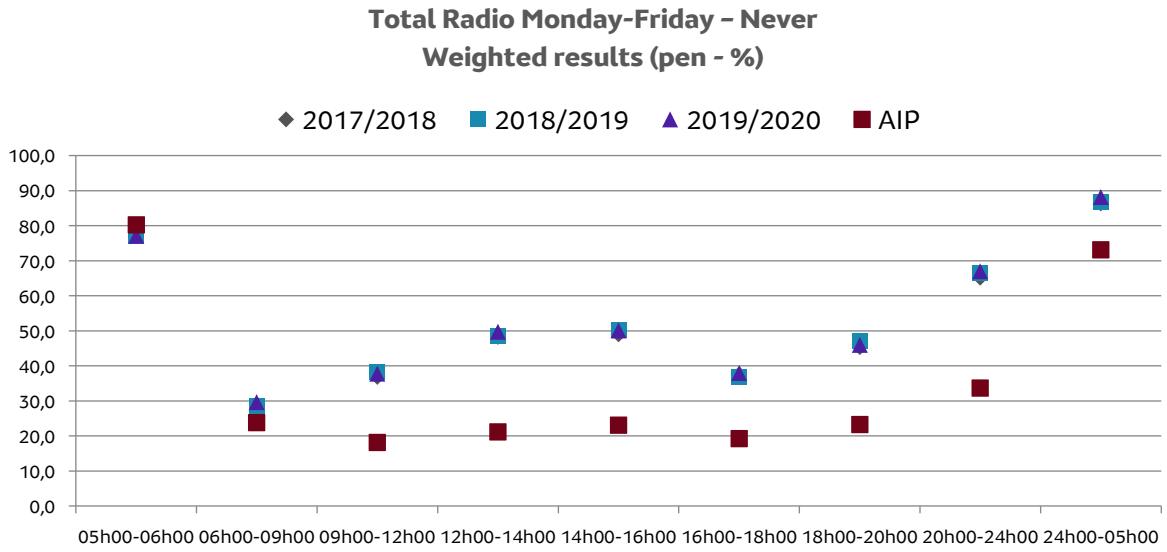


CESP considered as satisfactory the calculation of frequencies based on for 4 3-weeks waves of panellists’ listening observations.

CESP supported the different steps of the project

Not yet an Audit

Analysis of methodological principles

- ❑ Description
- ❑ Evaluation of EAR > National survey as the donor sample
- ❑ Tests and results

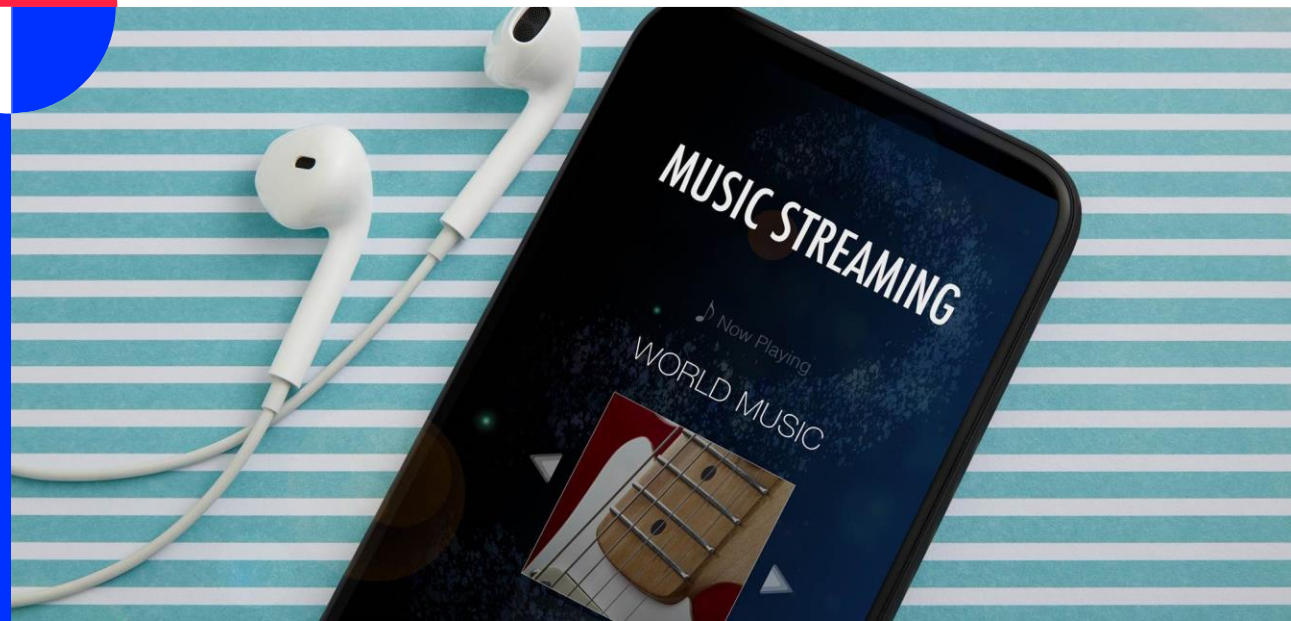
CESP considered as satisfactory

- ✔ **Choice of EAR > National survey as the donor sample**
- ✔ **Médiamétrie stratification choice which led to the selection of the 4 most correlated variables with headphone listening**
- ✔ **Deletion of outlier panellists which avoids measurement instabilities**

- ✔ **CESP recommended not taking into account the headphone listening reported by the meter as there is no guarantee of the completeness of measurement**

CESP will publish an Audit on EAR > Insights by the end of 2023

Perspectives and challenges



Perspectives and challenges

Data integration to enrich targeting

- ❑ Creation of behaviour-targeting

Improve granularity for digital radio

- ❑ Measure each broadcasting mode separately: live offline, live online, webradios, replay and original radio podcasts
- ❑ Measure digital increments and duplications

Perspectives and challenges

Hybrid measurement with external data

- ❑ Site centric data use for granularity and accuracy
- ❑ Consistency in market standards

Evolution of the meter

- ❑ ROA v3 to come

Perspectives and challenges

Improvement of media planning software

- ❑ More observations
- ❑ Possibility to improve the modelling for Saturday and Sunday universes
- ❑ Better measurement of Radio seasonal variations in audience results

Thank you for your attention !

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