Nielsen

TAM IRELAND
TV Audience Measurement Ireland

Understanding TV Data

2023 Edition

Introduction

Nielsen's Television Audience Measurement Service (TAM) is the global industry standard for quality data on television viewership worldwide.

Nielsen have been measuring TV audiences for over 50 years. They use proprietary electronic measuring devices and software along with advanced data science techniques to capture who is watching, when they are watching and what channel is being watched.

The TAM service is designed in a way that fairly represents all demographics and viewing behaviour so the industry can analyse the data and trade on it with confidence.

The purpose of this document is to provide an understanding of the basic principles driving TAM data quality.

Through explanation and examples, this document shares guideline principles as you work with Nielsen TAM data to make strategic programming and commercial decisions.

Table of Contents

SOME ESSENTIAL TERMINOLOGY

Key Terms

Term	Description
PEOPLEMETER	Electronic measurement system which monitors the channel that a TV set is tuned to and the individuals present in the room while the TV set is switched on. Individual demographics are measured through a special remote control. The Peoplemeters installed in the TV panel in Ireland include the UNITAM meter and Nielsen's latest generation meter, the NANO meter.
INSTALLED PANEL	Total sample of households and individuals installed on the TV panel. All of these households have a Peoplemeter installed on each TV set. The installed panel is designed and maintained to be as reflective of the TV universe as possible.
IN-TAB PANEL	Installed Panel households that meet quality control procedures and rules for inclusion in the daily reported sample.
CENSUS	The Irish Government Central Statistics Office (CSO) census is an exhaustive survey of all households and individuals within those households, which takes place approximately every five years. Characteristics measured in the census include age and gender of individuals and size of household.
LFS	The Labour Force Survey (LFS) is a large-scale, nationwide survey of households in Ireland, carried out by the CSO.
UNIVERSE/TARGET AUDIENCE	Refers to the total population of a particular audience category. Universes are based on TV households in Ireland. For example, Individuals 4+ includes all persons aged 4 and over who live in a household with a working TV set and one of the reception types listed on Page 14.
CELLS	When designing a sample, the universe of households and individuals is subdivided into units based on a number of characteristics. Each mutually exclusive unit represents a subsection of the universe and is referred to as a cell (e.g. males 4-6).
ESTABLISHMENT SURVEY	The Establishment Survey (ES) is a large-scale, face-to-face survey designed to define the characteristics of the population to be represented, as well as providing a pool of addresses from which potential homes for the TV panel are drawn.
PANEL CONTROL	Demographic or other variable used to control the representativeness of the installed panel with the TV universe profile. Panel controls are based on characteristics which best explain TV viewing patterns (e.g. Reception Type or Household Size).

Key Terms

Term	Description
WEIGHTING	The profile of the in-tab sample varies day-to-day. To ensure the reported data is as representative of the TV universe as possible, weighting is used to correct for any bias in the in-tab sample. The daily in-tab sample is weighted for a range of household and individual-based characteristics, similar to the characteristics used to control the profile of the installed panel. The characteristics that the Nielsen panel are weighted to are referred to as weighting controls. Weighting is most important for Individual-based demographics as the sampling unit for TV panel selection is household-based and therefore the daily in-tab sample is more likely to be representative of the TV Universe at a household level. A daily weight is assigned to each panel home and individual to ensure the sum of weights over all characteristics match the universe figure derived from the ES (e.g. if the ES National Adults 15+ universe for January 2021 is 3,689, then the daily sum of weights for National Adults 15+ will be 3,689).
ITERATIVE RIM WEIGHTING	Nielsen uses iterative Random Iterative Method (RIM) weighting, a method of weighting that puts selected non-interlocking and grouped interlocking variables in isolation through an iterative sequence of weighting adjustments. The sequence adjusts for each RIM in turn and then repeats itself as many times as are required in order to obtain convergence.
RIM	Number and group that identifies the RIM weighting group to which the category belongs.
ITERATION	A procedure in which repetition of a sequence of operations yields results successively closer to a desired result.
CONVERGENCE	Convergence is achieved when the sum of weights for each weighting cell is equal to the universe estimate (within tolerance) within a limited number of iterations.
WEIGHTED DATA	The weights applied to each day's in-tab panel are multiplied by viewing data minutes to produce the reported TV viewing (e.g. if the universe indicates that within households 12% are women 15-34, a target is set in the daily data production to ensure that no matter how many 15-34 women are in the sample for that day, they amount to 12% of the total homes in the daily data).
UNWEIGHTED DATA	An unweighted viewing figure is the sum of viewing minutes for all in-tab panel homes for a given day (i.e. an unweighted viewing figure corresponds to the case where all weights are set to equal 1).

Viewing Activity Types

Term	Description
LIVE	Content watched live as it was broadcast. Any viewing statement that matches +/- 20 seconds from the original broadcast is considered live.
VOSDAL	Includes any time-shift viewing that took place within the same day as the original broadcast. Note, live streaming and certain platforms like IPTV can have delays in transmission compared to the original broadcast. In cases where the delay is over 20 seconds, 'as live' viewing is reported as VOSDAL.
LIVE + VOSDAL	Includes live viewing and time-shifted viewing that took place within the same day as the original broadcast.
TIMESHIFT (TSV)	Includes any viewing that takes place within 7 days (168 hours) of the original broadcast. VOSDAL is included within the Time-Shift variable. Note, due to delays in transmission on some platforms VOSDAL can include some live viewing. Time-shifted viewing must be watched at normal speed in order to be included and reported in the data, so if a viewer watches content in fast-forward mode, they are not counted and do not contribute to the reported viewing figures. Trick-mode activity is also excluded (pause, rewind, fast-forward). Time-shifted viewing is allocated to the time of the original broadcast, rather than the time when the content was viewed. Time-shift includes viewing through a PVR, Games Console, Smart TV or any other playback device. On-Demand content is included in Time-shift (VOD, Player) if the content is matched back to content broadcast within the past 168 hours.
CONSOLIDATED	Includes all viewing watched live or within 7 days of original broadcast (168 hours). Consolidated data is the industry standard for trading.
PLAYBACK	The VOSDAL and time-shift activities allocate time-shifted viewing back to the original broadcast, while the Playback activity reports time-shifted viewing levels linked to the time at which the time-shift activity was happening. As Consolidated is the agreed currency, only content viewed within 7 days of broadcast is reported in time-shift. Playback is a mode of viewing, and includes viewing to content matched within 28 days of original broadcast (i.e. it is not linked to currency).

Key Viewing Metrics

Term	Description
TVR	The average of a target audience who have viewed a programme, day-part, spot or minute expressed as a percentage of that target audience universe (e.g. an Adult TVR of 15 for a programme indicates that on average 15% of the Adult TV Universe watched the programme). TVR figures are calculated minute-by-minute across the programme duration, inclusive of the centre break. Similarly, break ratings are calculated minute-by-minute across the duration of the break, while the spot rating is based on the minute in which the spot aired.
000s	The average target audience who have viewed a programme, day part, spot, minute etc. expressed in thousands. The 000s figure is linked to the TVR (e.g. an Adult TVR of 10 will equate to a 000s figure of 369 - based on the National Adult universe of 3,689 (January 2021).
SHARE	This is the percentage of the viewing audience accounted for by a particular channel at a specific point in time, i.e. of the people who are watching television, what proportion are viewing channel X (e.g. an Adult Share of 30 for a programme indicates that of all adults who were watching TV at the time, 30% of them were watching the programme).
REACH %	The percentage of the target audience who viewed for a defined period (e.g. a 1+ reach % is the % of the audience who have viewed for at least 1 minute). The default reach is set to 1+ consecutive minutes but this can be changed to create other consecutive and non-consecutive reach criteria.
REACH 000s	The total target audience who have viewed for a defined period (e.g. a 1+reach 000s is the total 000s who have viewed for at least 1 minute). In all reports the default reach is set to 1+ consecutive minutes but this can be changed to create other consecutive and non-consecutive reach criteria.
REACH % V 000s	The % or 000s of a target audience who have viewed for a defined period (e.g. Reach % is the % of the audience who viewed for at least 1 minute).
CAMPAIGN R&F %	Indicates the Reach & Frequency of a campaign, showing the % of the target audience 1+ % ... 10+ % who have seen at least one spot; at least two spots; at least three spots, etc.
COMMERCIAL IMPACTS	Indicates the total number of people within the target audience expressed in 000s who have seen one or more spots of a campaign or on a channel. Each time a spot is viewed it contributes to the total commercial impacts.
PROFILE	The % of the base audience made up by your target audience (e.g. a profile of 23 for Adults 15-34 means that 23% of your base audience were aged 15-34). Default base audience for reports in Arianna is Individuals 4+.

Key Viewing Metrics

Term	Description
INDEX	A conversion figure between the base audience rating and the target audience rating, allowing the user to compare audience performance for a spot / programme / day-part (e.g. an index of 126 for Adults 15-34 against a base audience of Adults 15+, means 15-34 performed 26% better than Adults 15+ for this time period).
AVERAGE MINUTES PER PERSON	The average daily minutes viewed per person for the period selected calculated against the total universe of the target audience (e.g. Total TV average mins per person of 203 for Individuals, means Individuals in TV Homes watched an average of 203 minutes of TV per day).
AVERAGE MINUTES PER VIEWER	The average daily minutes viewed per person for the time period selected calculated against only those viewing at the time (e.g. Total TV average minutes per viewer of 261 for Individuals, means Individuals who viewed TV during the time period selected, viewed an average of 261 minutes per day).
PEAK TVR	The TVR for the highest-rating minute of a selected programme (e.g. a programme may have achieved an average rating of 12 for the entire programme, but its peak minute rating may have been 16).
PEAK 000s	The programme audience in 000s for the highest-rating minute (000s are linked to the average TVR) e.g. a programme may have achieved an average of 366,000 adults - TVR 12 - for the whole programme, but its peak minute 000s may have been 488,000 - TVR 16.
CUMULATIVE TVRs	Provides a build of ratings as each spot is added to a campaign. It is calculated based on (CUM TVR) middle day panel and the figures are then adjusted, using Negative Binomial Distribution (NBD) adjustment, to create the ratings. These may differ from the individual spot ratings (calculated using the panel on each day) and should only be used as a guide to see how much each spot added to the ratings.
CUMULATIVE 000s	Provides a build of 000s as each spot is added to a campaign. It is calculated based on the middle-day panel sample and the figures are then adjusted (using NBD adjustment) to create the ratings. These may differ from individual spot 000s (calculated using panel on each day) and should only be used as a guide to see how much each spot added to the 000s.
AVERAGE FREQUENCY	The average number of spots seen in a campaign.

Key Viewing Metrics

<table>
<tr><th>Term</th><th>Description</th></tr>
<tr><td>30 SECONDS 000s</td><td>The 000s for all spots are totalled to provide total commercial impacts. In order to convert all spots (10 sec, 20 sec, 30 sec, 60 sec etc.) to the same 30 second duration, a factor is applied to each spot 000s to produce 30 sec 000s. This allows for like-with-like comparison of impacts across channels.</td></tr>
<tr><td>PIB</td><td>Position in break a commercial spot occupied (indicates where each commercial spot aired within the break)</td></tr>
<tr><td>% CUMULATIVE REACH</td><td>Shows the build up of reach across a number of programmes. The % reach will increase as each programme adds new viewers. The default reach setting in Arianna is 1+ minutes but this can be changed to create other reach criteria.</td></tr>
<tr><td>% NEW VIEWER</td><td>Shows the number of new viewers that the relevant programme has added to the overall reach. This is calculated by subtracting the % cum reach figure for the programme from the % CUM reach figure for the previous programme.</td></tr>
<tr><td>COVER EFFICIENCY</td><td>This gives an indication of the effectiveness of the particular spot in increasing cover. It is calculated as follows:

<table><tr><th>Number of Spots Seen</th><th>Weight</th></tr><tr><td>1</td><td>1.0</td></tr><tr><td>2</td><td>0.5</td></tr><tr><td>3</td><td>0.33</td></tr></table>
Each respondent is allocated a weight, according to whether they saw this spot and this spot only, this spot and one other spot, this spot and two other spots and so on...

The sum of the weights is then divided by the number of respondents and multiplied by 100 to obtain the Cover Efficiency.</td></tr>
</table>

Establishment Survey, Panel, Weighting and Lifestyle Survey

Establishment Survey Methodology

The TAM Establishment Survey (ES) is a large-scale face-to-face survey designed to define the characteristics of the TV population to be represented, as well as providing a pool of addresses from which potential homes for the panel are drawn.

The ES is based on a non-clustered two-phased stratified random sample and is conducted twice a year[1]. The first stage of the sampling process determines a random list of Primary Sampling Units (PSU's) representative of all households (sample based on residential addresses only) in the Republic of Ireland, while the second phase randomly selects the required number of addresses for each of these Electoral Divisions (EDs)[2]. A total of 9,350 household surveys (8 times the panel size) are completed annually, with the sample divided equally across two waves.

The fieldwork is conducted in two waves, typically from March to April and September to October, with new universes introduced in January and July. All interviews are conducted face-to-face using CAPI technology. The areas covered by the questionnaire include ownership of TV-related equipment, method of TV reception and demographics such as age and gender of individuals in the households questioned. The questionnaire is reviewed in advance of each wave of fieldwork to take account of new and growing technologies.

[1] Stratification is a means of improving the quality of a probability sample by selecting sample elements according to population variables with known distribution profiles in order to determine a proportional or disproportional allocation of the survey sample. Examples of commonly used stratification variables are region, type of settlement and household size

[2] The selection process is overseen by Behaviour and Attitudes and outsourced to AutoAddress, who use the Geo Directory to select the addresses at random from the database of private residential addresses in the Republic of Ireland

In order to correct for any non-response bias, the ES data is weighted to national statistics. The primary sources used for weighting are the LFS (Labour Force Survey) a survey of both households and individuals, which is conducted by the CSO four times per year, and Autoaddress. AIMRO data is used for social class weighting. The individual-level database is weighted by a number of characteristics (e.g. age, sex, region and size of household by region).

Establishment Survey Results

Once the Establishment Survey results are weighted, Nielsen analyses the results and produces the new household and individual universe estimates, which are introduced on 1st January and 1st July each year.

Targets for weighting and panel controls are directly derived from the Establishment Survey are updated following each wave to ensure the population of television homes in the Republic of Ireland is represented.

The following results are issued to clients following each ES wave:

- Universe estimates for key demographics
- Reception information
- ES tables

Reception Type Classification

The Total TV universe includes all TV Homes by reception. Reception types are hierarchically defined and mutually exclusive, based on the highest form of reception within television homes.

Each household is defined as one reception type, irrespective of the number of sets with different reception types within the home. For example, a household with two sets, one with Irish DTT and another with Sky is defined as a Sky Reception Type.

The current reception type classification and hierarchy (from highest to lowest) is:

Reception Type	Description
SKY	Homes with Sky as their highest form of television reception. A Sky home is currently based on the possession of at least 1 Sky set-top-box and an active subscription. Sky subscribers receive 600+ TV channels. Sky homes may also have Cable, Free-to-Air (FTA) Satellite, UK DTT, Irish DTT and/or Web TV capabilities.
CABLE	Homes with either Cable or IPTV as their highest form of television reception. Cable includes Virgin Media subscribing homes and homes where IPTV is the highest form of reception (e.g. Eir/Vodafone). Cable homes may also have FTA Satellite, UK DTT, Irish DTT and/or Web TV capabilities.
FTA SATELLITE	Homes with FTA Satellite as the highest form of television reception. FTA homes receive up to 400 FTA (or broadcast encrypted channels) via a satellite dish. FTA homes may also have UK DTT, Irish DTT and/or Web TV capabilities.
UK DTT	Homes that receive UK Freeview channels via an aerial (whether through a set-top box or an integrated digital TV). UK DTT homes may also have Irish DTT and/or Web TV capabilities.
IRISH DTT	Homes that only receive any or all of the following Irish free to air channels: RTÉ One, RTÉ One +1, RTÉ2, RTÉ2+1, RTÉ News, RTÉjr, Virgin Media One, Virgin Media One +1, Virgin Media Two, Virgin Media Three, TG4 and Oireachtas TV via an aerial (whether through a set-top box or an integrated digital TV) or via Saorsat. Note, Virgin Media Television channels are not available via Saorsat.
WEB TV-ONLY	Web TV-only homes are defined as households with broadband and at least one working TV set. They do not have a standard reception type (i.e. Sky, Cable, FTA Satellite, UK DTT or Irish DTT) but they can view broadcast content online through a Smart TV or a peripheral device attached to their TV set.

In Arianna, Reception Type is referred to as **Panel Type.** The options above are all available along with combinations of distinct Panel Types, e.g. Irish DTT and UK DTT. National, which includes all Panel Types, is the default option.

Reception Method

A home can only be assigned one Reception Type, but it may have multiple Reception Methods. For example, a household with a Sky subscription is classified as a Sky Reception Type, but the household may also have a Saorview set-top box on a second TV set. It is possible to analyse viewing by method, or 'source'. For example, you could determine how much viewing in a Sky home comes through a Digital Terrestrial source by selecting Sky as the Panel Type and Digital Terrestrial as the Platform in Arianna.

Reception Method	Description	Main Provider
DIGITAL TERRESTRIAL	Viewing via a Digital Terrestrial Signal	Saorview/Freeview
DIGITAL SATELLITE	Viewing via a Satellite Dish	FreeSat/Sky
DIGITAL CABLE	Viewing via a Digital Cable Connection	Virgin TV
IPTV	Viewing via Internet Protocol TV	Eir/ Vodafone
WEB TV/OTHER	Viewing via any other device not uniquely identified as a platform in the list above E.g. Games Console, DVD, VCR, Standalone PVR, Android TV Box, Android Stick, Apple TV, Google Chromecast, Smart TV	
ANALOGUE TERRESTRIAL	Viewing via an Analogue Terrestrial Signal	No Longer Relevant. Available prior to Digital Switchover, Oct 2012
ANALOGUE CABLE	Viewing via an Analogue Cable Connection	No Longer Relevant

In Arianna, Reception Method is referred to as **Platform.**

The Television Viewing Panel

The Nielsen Peoplemeter Panel is a household-based panel of ~1,111 installed homes, with a daily minimum target of 1,000 reporting homes. The panel is designed and controlled to represent the population of television homes in the Republic of Ireland.

The Establishment Survey respondents form a pool of potential recruits to the continuous viewing panel. Panel recruitment is an ongoing process designed to ensure that an adequate supply of different household types are available to replace homes with similar characteristics who leave the TV panel. Households are issued for recruitment on the basis of key household characteristics and the current need for such homes.

Panel controls represent a framework to monitor the panel profile to ensure the panel remains as representative as possible. An effective panel control regime includes an optimal selection of TV and demographic variables, which are estimated in our ES and coded on our panel. In keeping with this, Primary and Secondary controls are household-based while Marginal Controls and Irish Speaking Controls are based on individuals. Nielsen's Panel Management Team continuously review the status of the panel controls versus the current targets, to ensure the panel fits within the controls deemed most important for measuring TV viewing.

Primary Panel Controls are those which best explain TV viewing minutes. Panel controls are determined using regression analysis using available demographic and TV reception variables from the panel. The most optimal panel controls are interlaced to create a 'Primary Matrix' .

The Panel is structured so that it is primarily controlled by three interlaced variables deemed to be highly correlated with TV viewing as follows:

Primary Controls	
# OF SETS BY HOUSEKEEPER AGE BY SOCIAL CLASS	1-2 Sets | Housekeeper 15-44 | ABC1F1 1-2 Sets | Housekeeper 15-44 | C2DEF2 1-2 Sets | Housekeeper 45-64 | ABC1F1 1-2 Sets | Housekeeper 45-64 | C2DEF2 1-2 Sets | Housekeeper 65+ 3+ Sets
RECEPTION TYPE	Sky Cable IPTV Free-to-Air Satellite UK DTT Irish DTT Web TV-only

Secondary Panel Controls are used to ensure that the overall panel is correctly represented in other characteristics that affect viewing, but may be less influential on Total TV viewing.

Any variable which displays significant differences in Total TV viewing minutes across categories and /or displays significant differences for channel group shares of Total TV viewing is a candidate for the Secondary Control scheme. The secondary control scheme also takes into account the statistical inter-dependencies between variables which satisfy the above conditions.

Secondary Controls	
# OF SETS	1 Set 2 Sets 3+ Sets
HOUSEHOLD SIZE	1 Person 2 Persons 3 Persons 4+ Persons
SOCIAL CLASS	AB C1 C2 DE F1F2
HOUSEKEEPER AGE	15-34 35-44 45-54 55-64 65-74 75+
HOUSEKEEPER WORKING STATUS	Full-time Part-time & Not working
PRESENCE OF CHILDREN	Yes/No
REGION	Dublin Rest of Leinster Munster Connaught/Ulster
URBAN/RURAL	Urban Rural
HOUSEKEEPER EDUCATION	Primary/Secondary/None Tertiary/Still in Education
FIXED BROADBAND	Yes/No
LIFESTAGE	No 0-24 non-Hsk Eldest non-Hsk 0-10 Eldest non-Hsk 11-24
PRESENCE OF PC/LAPTOP	Yes/No

Individual characteristics are represented in Marginal Panel Controls. Marginal Controls include Individuals by Age, which is further broken down by gender.

Marginal Controls	
INDIVIDUALS	Total
INDIVIDUALS BY AGE	4-14 15-24 25-34 35-44 45-54 55-64 65-74 75+
MALES	Total
MALES BY AGE	4-14 15-24 25-34 35-44 45-54 55-64 65-74 75+
FEMALES	Total
FEMALES BY AGE	4-14 15-24 25-34 35-44 45-54 55-64 65-74 75+
IRISH SPEAKING	Speaks Irish Frequently Speak Irish Occasionally Does not speak Irish

Watch TAM Ireland's explanatory video on The Panel

Weighting

TV ratings data are produced from the viewing data collected from panel homes.

Weighting of the daily in-tab panel is performed to ensure robustness in the reported viewing levels to changes in the day-to-day in-tab panel profile[1]. The principal purpose of panel controls and weighting is to ensure the panel is representative, while weighting can also provide control for cells, particularly at an individual level, which due to small sample sizes, could not reasonably be included as panel controls.

To ensure panel viewing data is representative of the viewing behaviour of all TV homes and individuals, Nielsen defines a series of demographic classifications ("controls") and weights the data to these. The targets are based on Establishment Survey universes and determined to be those that correlate to TV viewing, with all panel controls included as weighting controls at a household level, plus additional targets at an individual level. Each home and individual panel member is assigned a weight so that universe targets are reached for each control and therefore the proper representation of all selected demographics is ensured. This process is completed every day and each individual may receive different weights for each day that they are included in the data.

For example, if the Universe indicates that Women 15-34 represent 12% of Individuals 4+, a target is set in the daily data production to ensure that no matter how many women 15-34 are in the the mix that day, they amount to 12% of total Individuals in the daily data.

Weighting targets are defined on both a household and individual basis for specific audience demographics. The effect of this procedure is that controlled demographics have a fixed universe in the data. This means that no matter what the composition of the reporting panel is on a given day, these thousands will always sum to the total universe thousands from the ES.

Uncontrolled demographics will not have a fixed universe. If an audience being analysed does not have a fixed target in the daily data, the universe will "float". This means it may differ from the ES figure and will vary day to day as it is determined by the composition of the sample and their sum of weights.

For example, Dublin Women 15-34 is NOT fixed. Therefore, each day, the Women 15-34 who are based in Dublin on that day's panel will determine the universe in the data. Women 15-34 National are fixed in the daily data and the universe will therefore always be the same as the ES. This is applicable to all software systems.

Audience	Daily Universe in Software							
	ES Universe	2 Jan 2021	3 Jan 2021	4 Jan 2021	5 Jan 2021	6 Jan 2021	7 Jan 2021	8 Jan 2021
WOMEN 15-34 NATIONAL	543	543	543	543	543	543	543	543
WOMEN 15-34 DUBLIN	165	135	138	134	134	128	129	129

[1] Homes that meet the quality control procedures and rules for inclusion in the daily reported sample

The Daily Process

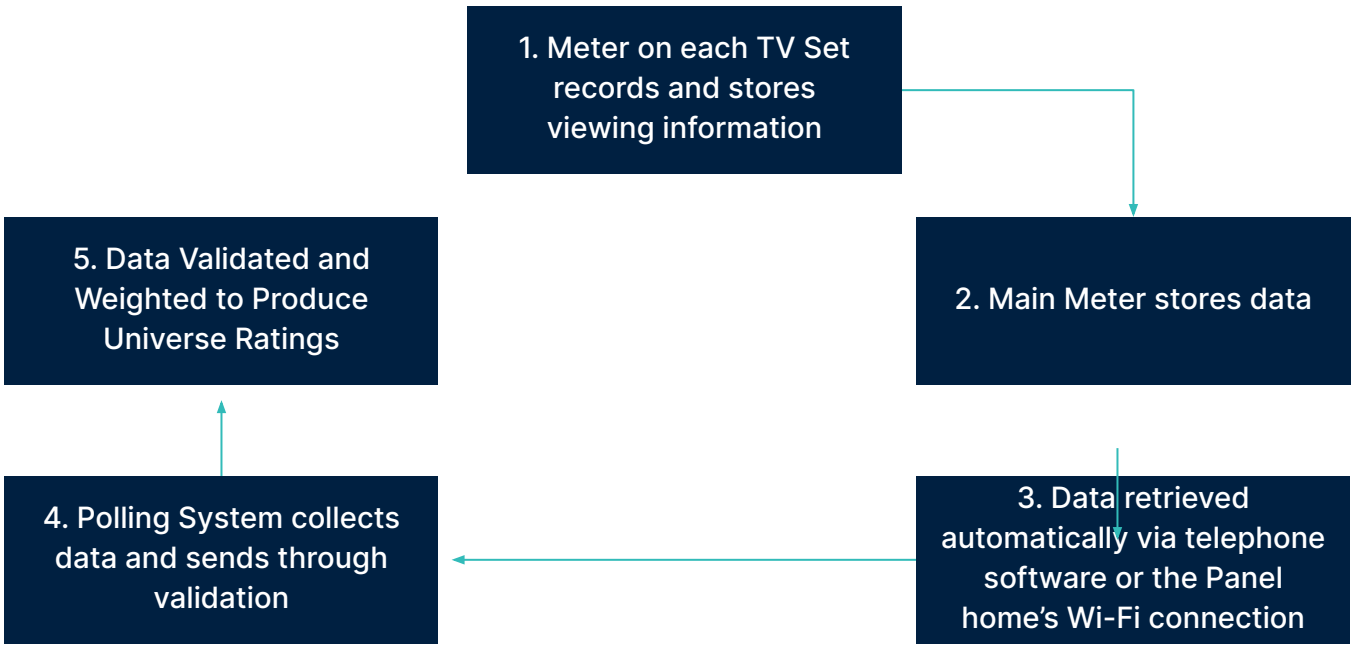
All eligible television sets in panel homes are monitored by the Nielsen UNITAM or NANO Peoplemeter, where all household residents and any guests aged 4+ register their presence using a bespoke remote control. The meter records and stores all information about viewing on TV sets within panel homes, including:

- Whether the TV is switched on or off
- Who is watching
- The date and time they are watching
- The duration of their viewing session
- Audio signals and SI codes (Sky sources only)

Data collected by the UNITAM meters is retrieved automatically during 'polling' between 03:00 and 06:00 each morning using advanced telephone software. The NANO meter transfers data throughout the day, using the panel household's Wi-Fi connection.

A complex 'content-matching' process (matching the audio captured from the panel homes to the Nielsen reference site of TV channels) is used to measure and allocate Live, VOSDAL and Time-shift viewing to individual channels.

The production system processes, validates, weights and produces the ratings. Once the data is processed, the programme and commercial logs provided by broadcasters and ratings are integrated. Daily viewing data for the previous day is reported to clients in the Arianna software at 9.30am each day from Tuesday to Friday and at 12 noon on Monday.



Watch the following TAM Ireland explanatory videos:

How does TAM know who is watching

How does TAM know what programme and ads people are watching

Lifestyle Survey

Once a year, all households on the TV panel are sent a Lifestyle Survey to capture additional lifestyle information about Individuals on the panel. A personalised questionnaire is sent to everyone in the home aged 15+.

The housekeeper in each household is sent a slightly different questionnaire, which includes household-level questions related to grocery shopping.

Data captured includes details on the following:

- Grocery shopping
- Radio stations listened to
- Newspapers and magazines read
- Individual statements on viewing habits and other interests
- TV viewing decisions / ways of viewing content
- Internet Usage
- Advertising

Data captured as part of the lifestyle survey is released to clients in Arianna, where users can create lifestyle-based audiences for analysis purposes.

Technical Details

How Does the Meter Work?

In a typical UNITAM meter set-up, Peoplemeters are installed to monitor TV sets and other devices[1]. Bespoke remote controls are used by panel members (and guests) to register their viewing activity. Each panel household also has a Combox unit installed, which polls all meters in the panel household via radio frequency communication[2]. The Combox stores the collected data, sending it to the base server via telephone communication between 03:00 and 06:00 each morning.

UNITAM meters are equipped with 6 ports which are connected to every media device capable of delivering content present in the TV. UNITAM is connected to each media device, using special cables which are inserted into the signal path at the output of each device, without disturbing the signal in any way as it flows towards the TV set. In this respect, UNITAM meters are 100% non-intrusive.

As part of the installation process, the engineer records which type of device is connected to each port. This 'device-type' value is used by the central system to determine which type of recognition process, if any, is to be applied to the signatures. UNITAM meters also include a 'sensor' port that must be connected to the TV set's audio output if available, or otherwise to a tiny microphone attached to the TV set's speaker. This port is used to determine where the signal on the TV is coming from (the 'active port') by comparing the audio sampled at each port with the one captured by the sensor. This permits identification of the platform or device being viewed. Once the active port has been determined, the meter generates audio signatures continuously from that port (as long as it remains active) regardless of the type of device connected to it. These signatures are transmitted to the base office during the daily polling process.

A number of panel homes now have the NANO meter installed. The NANO meter is part of Nielsen's newest generation of metering technology. It is much smaller in size and therefore less intrusive than the UNITAM. It is also easy to install and maintain, and supports remote panel maintenance. Instead of sending data back between 03:00 and 06:00 each morning, the NANO meter is designed to transfer data throughout the day using the panellist's home network.

The NANO meter allows for one wired connection and this can be expanded by the use of the Expansion Adapter. It also uses a variety of other technologies, including Bluetooth, Infrared hints, information collected from the Streaming Meter and audio matching, to determine the source of viewing.

The STREAMING METER is an additional piece of hardware that monitors the Ethernet and Wi-Fi Traffic through the household's Fixed-Broadband Connection. It is a passive solution and it monitors streaming activity on TV sets and digital devices. It works as a companion with the NANO meter and enables the identification of the physical source (the device) and the streaming source for over-the-top streaming services. It also eliminates streaming sources when the content is from a traditional source and there is no streaming activity.

[1] An electronic device designed to monitor TV sets, VCRs, PVRs/DVDs, Set Top Boxes, Tuners, DVD players, Games consoles, PCs and any other peripheral equipment connected to the TV set by means of an audio/video input/output cable

[2] The Combox unit is protected against power failure with a battery backup, which can store more than 200 hours of viewing information

Why are Households Rejected?

Households deemed to pass all daily quality control checks are included in the sample for released data. The main reasons households are rejected from the reporting panel for a particular day are as follows:

UNCOVERED VIEWING

Uncovered viewing is where the TV set is turned on but no panel member is logged in. As a phenomenon, uncovered viewing can be genuine as there may not be any panel members viewing a TV while it is in use. However, Nielsen specifies thresholds for uncovered viewing, beyond which the data is deemed unusable as there is evidence of a lack of compliance from panel members.

LONG VIEWING EVENT LENGTHS

Although a panel member may watch a single channel for a long period of time without changing channel or logging on or off other panel members, Nielsen operates a maximum event length for TV viewing statements which show no change in channel, no change in remote control activity and no change to logged guests. If a panel home's daily viewing features an event length in excess of a fixed threshold then the home will not pass into production for that day.

UNIDENTIFIED / UNKNOWN CHANNEL

Panel households may also be removed from processing due to unknown channel statements. In these cases, the TV set was on but the channel cannot be identified. Nielsen uses a comprehensive reference site to accurately match viewing statements to actual channels. However, in practice, cases may arise where the channel for a viewing statement is unknown. Nielsen specifies thresholds for a certain level of unknown channels viewing, beyond which the data is deemed unusable.

How is Viewing Assigned to Individuals and Channels?

Each meter has a remote control handset, on which all household members have a dedicated button and are registered by the meter accordingly. Guests follow a simple log-on procedure indicating their gender and age. UNITAM and NANO meters are capable of recording data 24 hours per day and apply persistence thresholds for live and playback viewing. Channel changes are detected with precision. Both the UNITAM and NANO meters encourage compliance by regularly prompting panel members to register the presence of any new viewers, using flashing displays and beeps.

The UNITAM system is Nielsen's fully integrated end-to-end solution for television audience measurement designed to meet current and future challenges. The UNITAM system uses audio tracking via its exclusive Intelligent Stream Tracking (IST) Technology, a universal and independent audio tracking technology that supports:

- cable, satellite and terrestrial distribution
- any type of media presenting devices
- live, time-shifted and on-demand viewing

The central system processes the signatures received from the panel according to the type of device from which they were generated. Signatures captured from broadcast devices (e.g. TV sets) are processed through the 'Broadcast Identification' service, which identifies the content by scanning them against the broadcast reference database. Detailed matching rules are in place to uniquely identify simulcast viewing events. Advanced scanning rules are also in place to define and prioritise channels and day-parts for the entire consolidation window to assist in the allocation of non-linear viewing (e.g. TSV, On Demand) more precisely.

The UNITAM reference site is a collection of receivers that generate audio signatures for each channel to be monitored and servers to gather these generated Audio Signatures[1]. Surveillance software constantly monitors the UNITAM reference site to ensure each set top box (STB) is tuned to the correct channel and is providing an output. Nielsen operations staff are notified (via email or SMS messages) of any suspected issues identified by the surveillance system so any problem can be rectified immediately. A full backup reference site for all subscribing channels also exists in an off-site secure location, which is also monitored by the surveillance system.

.

[13] Each channel to be monitored has a separate feed, via a set top box , which is then fed into a reference unit. The reference unit generates the audio signatures and stores them on the server.

Why do we Weight the Data?

The data is weighted to ensure that the profile of the in-tab panel of homes, when aggregated to determine the reported figures, reflects the profile of the universe as much as possible. This ensures the reported figures are as representative as possible of the viewing population.

The profile of the in-tab Nielsen panel varies from day-to-day for a number of reasons, including the following:

- Rejection of viewing data for QC reasons
- Failure to poll data successfully from all panel homes
- Changes to demographic profiles due to birthdays
- Panellists deciding to leave the panel
- Inclusion of newly-installed homes

A system called Iterative RIM weighting ensures that the changing daily in-tab panel produces consistent reported viewing data. The weighting scheme features RIMs based on any recorded panel characteristic which is demonstrated to display statistically significant differences in viewing behaviour across cells (subject to rules relating to the size of universe penetration of such cells). The number of iterations required to achieve convergence provides an indication of how far a reporting panel's profile is from balance with respect to the universe, but can be driven by one or many different RIMs or cells within RIMs.

Nielsen currently operates a system where the expected in-tab panel size for a cell must not be less than 45. Therefore, assuming an average panel size of 1,000 (90% of installed panel size of 1,111), this results in a universe penetration rule for household cells of 5% and 2% for individual cells.

The Establishment Survey questionnaire serves a crucial role in supporting the aim of having an optimal panel weighting scheme. All characteristics known to be significant discriminators of TV viewing must feature as questions on the ES in order to be used in weighting. The Nielsen weighting scheme features RIMs at a household-level based on characteristics such as Number of TV sets, Household Size, Reception Type, Social-Class, Housekeeper Age, Housekeeper Working Status, Presence of Children and Geographical Region. Individual-level characteristics on which weighting is performed include Age, Gender, Reception Type, Adult Social Class and Geographical Region.

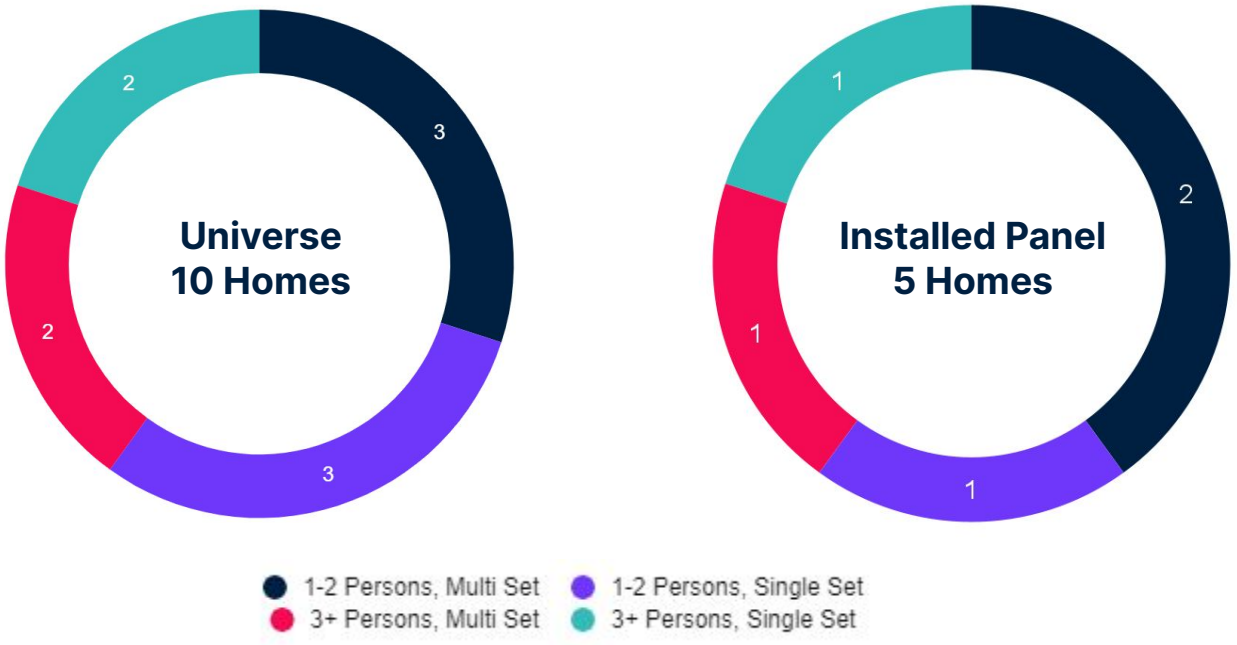
Watch the video Weighting and the TAM Panel on the TAM Ireland website

RIM Weighting Example

The following simplistic hypothetical example illustrates the details of iterative rim weighting. In this case, the household universe is 10, with a sample of 5 homes from this universe installed on the panel. A very simple weighting scheme is introduced with two rims as follows:

RIM	Cells
HOUSEHOLD SIZE	1-2 Persons 3+ Persons
# OF SETS	1 Set 2+ Sets (Multi Set)

The profile of the Universe and installed Panel is as follows:



Minutes for a typical day for all homes within the universe are simulated based on the following assumptions:

- On a typical day that the number of viewing minutes is proportional to both household size and the number of sets. i.e. on average a 3+ persons home will have more minutes viewed than a 1-2 persons home and similarly, a multi-set home will have more minutes viewed than a single set home
- For the base case of single set and 1-2 persons, the average daily viewing minutes for a home is 270
- A multi-set home will have, on average, 90 more minutes viewing than a single-set home
- A 3+ person household will have, on average, 60 more minutes viewing than a 1-2 person household

Under these assumptions, the viewed minutes for a typical day for our universe and the results are as follows:

Minutes viewed from the 5 panel homes will be weighted to represent the universe.

Household number	Household Size	# Sets	Minutes Viewed
1	**1-2 Persons**	**Multi-Set**	**432**
2	**3+ Persons**	**Multi-Set**	**457**
3	**1-2 Persons**	**Single-Set**	**264**
4	**3+ Persons**	**Single-Set**	**284**
5	**1-2 Persons**	**Multi-Set**	**292**
6	3+ Persons	Multi-Set	567
7	1-2 Persons	Single-Set	257
8	3+ Persons	Single-Set	355
9	1-2 Persons	Multi-Set	352
10	3+ Persons	Multi-Set	377

For the sample, household numbers 1-5 are installed on our panel and in-tab. We can proceed to perform weighting for this scheme and estimate the weighted viewed minutes for these 5 homes.

The details of the Rim Weighting procedure are as follows:

Step	Summary
CALCULATE INITIAL WEIGHT	The initial household weight is an average weight calculated by dividing the universe estimate for all households by the total number of in-tab homes for the day. In this example there are 10 homes in our universe and 5 homes in our sample. Our initial weight is therefore 10/5=2
SUM WEIGHTS AND FACTORISE FOR 1ST CELL, HOUSEHOLD SIZE 1-2 PERSONS	Sum the weights for the first weighting cell. Create an adjustment factor for that cell by dividing the universe estimate for the cell by the sum of weights for that cell. Create new weights for all of the homes that contribute to this cell by multiplying the home weight by the adjustment factor. In this example, there are 5 sample homes, 3 of which are 1-2 Persons households. The sum of weights for this cell is 6, with a universe of 5 1-2 person homes. To calculate the initial factor the universe is divided by the sum of weights i.e. 5/6 = 0.8333 The initial factor is multiplied by the initial weight of 2. This gives us our new weights of 1.6667 for household numbers 1, 3 & 5.
SUM WEIGHTS AND FACTORISE FOR ALL CELLS	The previous steps are repeated using the new set of weights as our initial weights, and proceeding through the remaining 3 cells. The resulting weights are 1.714, 2.571, 1.6, 2.4, 1.714 for households 1, 2, 3, 4 & 5 respectively.
COMPARE SUM OF WEIGHTS WITH TOLERANCE	A tolerance level 0.0001 is assumed. Our sum of weights across cells for household size 1-2 and 3+ can be seen to be in excess of tolerance and so, our first iteration does not result in convergence.

Using the set of weights which result from the first iteration of RIM weighting as the initial set, and generalising thereafter so that the nth iteration uses the results of the (n-1)th iteration as the starting weight, 3 iterations are needed to achieve convergence. The resultant weights are 1.706, 2.589, 1.589, 2.411 & 1.706 for households 1, 2, 3, 4 & 5 respectively.

The sum of minutes over the 10 homes in the universe can be compared to the sum of weighted minutes for the panel.

As per the following table, the weighted sample viewing minutes shows a deviation of -3.32% from the universe total, which we refer to as the bias of the weight sample minutes.

Household number	Household Size	# Sets	Minutes Viewed	Weight	Weighted Minutes
1	**1-2 Persons**	**Multi-Set**	**432**	**1706**	**736,677**
2	**3+ Persons**	**Multi-Set**	**457**	**2589**	**1182.674**
3	**1-2 Persons**	**Single-Set**	**264**	**1589**	**419.781**
4	**3+ Persons**	**Single-Set**	**284**	**2411**	**677.331**
5	**1-2 Persons**	**Multi-Set**	**292**	**1706**	**497.987**
6	3+ Persons	Multi-Set	567		0.000
7	1-2 Persons	Single-Set	257		0.000
8	3+ Persons	Single-Set	355		0.000
9	1-2 Persons	Multi-Set	352		0.000
10	3+ Persons	Multi-Set	377		0.000
		SUM	3635		3514

The weighting QC summary against the key statistics is as follows:

NUMBER OF ITERATIONS	3
WEIGHTING EFFICIENCY	95.9%
MINIMUM WEIGHT	1.589
MAXIMUM WEIGHT	2.589
ACTUAL MINUTES VIEWED	3635.133
ESTIMATED MINUTES	3514.449
BIAS	-120.684
RELATIVE BIAS	-3.32%

What happens if the Universe Changes?

The effect of a universe change can be simulated in the following way. Suppose that Household Number 4 obtains a new TV set. This will put them in the Multi-Set Universe and also change their viewing. Assuming all other homes have the same viewing as in the above example, the effect is illustrated as follows:

Household #4 was previously a single-set household with 281 minutes viewed.

Household number	Household Size	# Sets	Minutes Viewed	Weighted Minutes
1	1-2 Persons	Multi-Set	432	736,677
2	3+ Persons	Multi-Set	457	1182.674
3	1-2 Persons	Single-Set	264	419.781
4	**3+ Persons**	**Single-Set**	**378**	**923.264**
5	1-2 Persons	Multi-Set	292	497.987
6	3+ Persons	Multi-Set	567	0.000
7	1-2 Persons	Single-Set	257	0.000
8	3+ Persons	Single-Set	355	0.000
9	1-2 Persons	Multi-Set	352	0.000
10	3+ Persons	Multi-Set	377	0.000
		SUM	3732	3514

In this example, the number of iterations increases from 3 to 12 while the weighting efficiency falls from 96% to 85%. Also, the minimum weight falls while the maximum weight increases. This example illustrates the impact that a change to universes can have.

The Weighting QC summary against the key statistics is as follows:

NUMBER OF ITERATIONS	12
WEIGHTING EFFICIENCY	85.1%
MINIMUM WEIGHT	1.000
MAXIMUM WEIGHT	3.000
ACTUAL MINUTES VIEWED	3731.904
ESTIMATED MINUTES	3602.865
BIAS	-129.039
RELATIVE BIAS	-3.46%

In this case, the sample falls out of balance as there is now just one single set home for a universe of three, when previously there were 2 from a universe of 4. The balance of a panel relative to the universe is closely related to the QC performance in weighting.

Another scenario to examine is a change to the sample. Suppose now that home number 5 leaves our panel. The following tables illustrate the impact of this change.

4 Panel Homes Now Contribute To The Weighted Minutes:

Household number	Household Size	# Sets	Minutes Viewed	Weighted Minutes
1	**1-2 Persons**	**Multi-Set**	**432**	**455.826**
2	**3+ Persons**	**Multi-Set**	**457**	**1116.843**
3	**1-2 Persons**	**Single-Set**	**264**	**792.671**
4	**3+ Persons**	**Single-Set**	**378**	**923.264**
5	1-2 Persons	Multi-Set	292	497.987
6	3+ Persons	Multi-Set	567	0.000
7	1-2 Persons	Single-Set	257	0.000
8	3+ Persons	Single-Set	355	0.000
9	1-2 Persons	Multi-Set	352	0.000
10	3+ Persons	Multi-Set	377	0.000
		SUM	3732	3514

The Weighting QC Summary is now as follows:

NUMBER OF ITERATIONS	11
WEIGHTING EFFICIENCY	98.01%
MINIMUM WEIGHT	2.000
MAXIMUM WEIGHT	3.000
ACTUAL MINUTES VIEWED	3731.904
ESTIMATED MINUTES	3602.865
BIAS	10.906
RELATIVE BIAS	0.29%

Although the sample size has fallen, the balance for multi-sets improves and so the weighting efficiency improves. It is also notable that the bias improves.

Confidence Intervals and how they affect Data

Nielsen ratings are sample-based, using the recruited panel of homes as the sample.

Sample-based statistical estimates are subject to sampling error. Standard measures of spread can be used to express sampling error as a margin of difference either side of the reported value within specified confidence limits, i.e. there is an x % probability that the true population lies within y units either side of the sample estimate.

As the size of a random sample grows, the width of this confidence interval gets smaller and smaller. The higher an audience gets in terms of penetration of the market, the closer the number of panel homes for that audience gets to the target of 1,111. The width of a confidence interval for a rating on an audience is thus inversely proportional to the size of that audience (i.e. the larger the audience the smaller the confidence interval).

How do Sample Sizes affect precision of TV ratings and Universes?

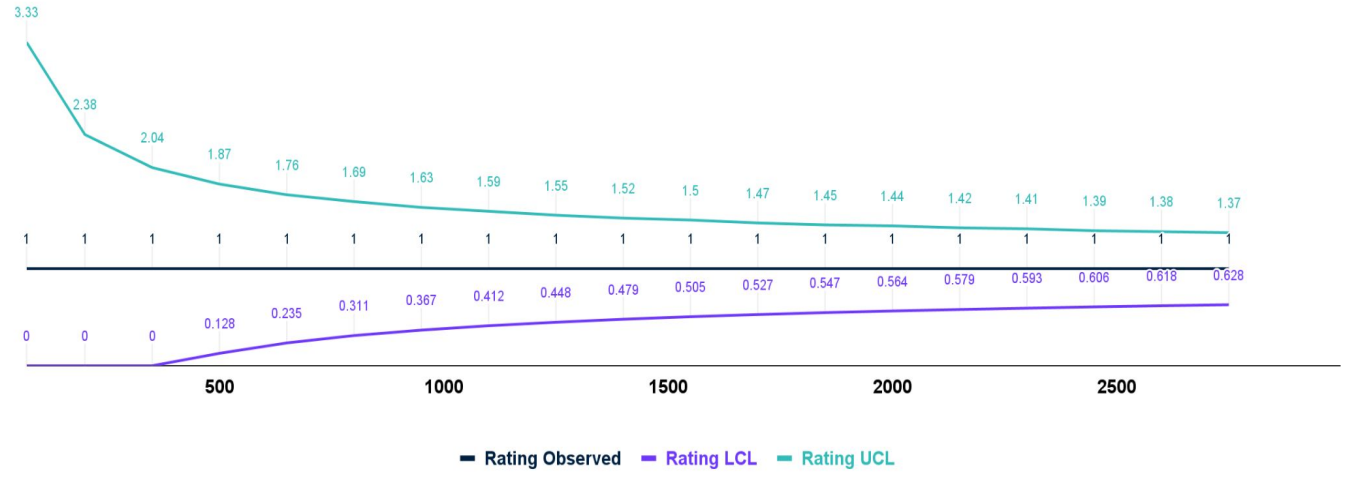
The Establishment Survey from January 2021 established the TV universe at 1,693,000 households and 4,442,000 individuals (aged 4+). This implies a figure of 2.62 individuals (aged 4+) per household and therefore, the ideal individual panel equates to 2,915.

The following charts illustrate the confidence interval on an observed rating, for a fixed confidence level of 95%. The charts below demonstrate, for an observed rating value, how the upper confidence limit (UCL) and lower confidence limit (LCL) behave as the individual sample size underlying the rating value varies from 70, the minimum level admissible for reporting, up to 3,061. The figure of 3,061 is so chosen as to be approximately 5% higher than the ideal individuals' figure of 2,915.

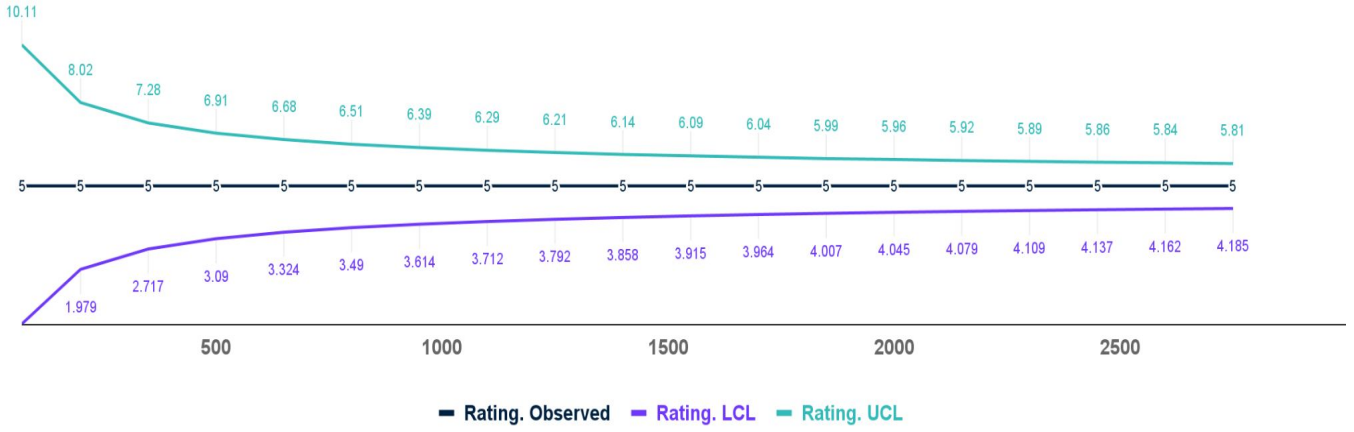
When reading the chart, an observed rating of r, which is derived from a sample of size n, the true rating lies between the LCL and the UCL with probability 95%. The charts illustrate this for ratings levels of 1.0 TVR, 5.0 TVR, and 10.0 TVR. Please note, sample sizes are included within all Arianna report headers.

For example, a TVR of 1.0 for an audience sample size of 1,550 lies between a TVR of 0.5 and 1.5 with a 95% probability.

CONFIDENCE INTERVALS FOR A 1.0 TVR OVERALL ADMISSABLE SAMPLE SIZE



CONFIDENCE INTERVALS FOR A 5.0 TVR OVERALL ADMISSABLE SAMPLE SIZE



FAQs

Why is the Panel based on Households rather than Individuals or Sets?

Traditionally TV sets are household rather than individual assets. As TV sets are shared by all members of the household, Nielsen defines the primary sampling unit for TV viewing as the permanent residential household. However, Individual-level data for households is also gathered for TV universe estimations and coded on the panel as well as processed in the daily TV data. The household-level is still the primary level for our panel, and so, when designing a panel control regime, household-level characteristics are foremost, with individual level characteristics monitored but not dictating the decisions made in terms of recruitment and selection.

To ensure representativeness in reporting of individual level data, weighting plays a significant role for individual-level data. For that reason, the weighting scheme features more RIMs and more cells than at a household level to ensure that universes for key Individual characteristics are fixed in daily reporting. A higher number of iterations are required to achieve convergence of weighting at an individual-level than for household-level, demonstrating the additional complexities involved in ensuring representativeness for individuals' figures.

What happens if a Control is out of Tolerance?

Panel controls will generally also be included as weighting controls in the weighting scheme. The value of the weight for a panel control which is out of tolerance will be increased or decreased depending on whether the panel count is below or above tolerance respectively.

Cells out of tolerance are flagged in panel management and the recruitment and installation prioritisation is adjusted to address cells out of tolerance. If a cell is under tolerance in the primary control scheme the priority will be to install homes to address this. Subsequently, any secondary controls under tolerance are noted and the prioritisation for recruitment will run according to whether the secondary cell deficits are addressed by these homes.

What happens if Weighting is Changed?

Weighting schemes for TV audience measurement are based on TV viewing patterns displayed within the panel and are intended to be reflective of market conditions. Market conditions will change over time and it is thus necessary that a periodic assessment of the key discriminators of TV viewing within the market be performed. Panel and Weighting Control reviews are performed on a regular basis by Nielsen to ensure this goal is met.

It should be noted that any change to the weighting scheme may result in changes to data trends. Changing the weighting scheme will have implications within reporting in that the list of audiences for which the universe is fixed in daily processing can change; universes for new weighting control breaks will become fixed while any weighting control breaks removed from the weighting scheme will "float" in the daily data. This means that the universe reported for the "floating" audience will vary in response to the profile of the in-tab panel.

Changes to the weighting scheme can also influence the extreme values in daily weighting calculations - a net increase in weighting RIMs and / or cells is likely to decrease minimum weights and increase maximum weights. Also, it is likely that a net increase in weighting rims and / or cells will lead to an increase in the number of iterations needed to achieve convergence and to decrease the weighting efficiency.

Similarly, a net decrease in weighting RIMs and or cells is likely to have the opposite effect on the weighting performance metrics. This pattern is an expected pattern, as the performance of a weighting scheme is ultimately a measure of how well aligned the profile of the in-tab panel is to the estimated universe profile with respect to the weighting scheme.

Why do we change the Panel, Weighting Targets & Universes?

Panel controls, weighting targets and universes are changed periodically in consultation with the industry technical committee, to ensure that they reflect broader TV market trends as accurately as possible. The Nielsen panel will display evidence of such market trends. However, the ES is used to get more robust estimates of TV market trends.

Universes are calculated after the ES has been completed and the respondent data has been validated. Iterative RIM weighting, similar to what we use in daily panel processing, is used with weighting RIMs covering variables such as household size by standard geographical region, age by gender by standard geographical region, social class estimates and by urban / rural geographical region.

What happens if you have a very Small Sample for an Audience?

To ensure the sample is robust enough for analysis, a minimum reporting threshold has been set at 70. Data is not reported for any audience below this threshold in any of the industry standard software (RatingPoint, Arianna, Genesis). This threshold is respected for all data sent within client files (for internal systems such as Landmark) or to other software providers.

Taking Arianna as an example, the average sample is taken into account when reporting. As the in-tab varies from day-to-day, this can result in data being reported within the software for one day and not another. Please refer to Section 2 for further details on how sample size affects precision of TV ratings.

Should an audience be too small to report in Arianna, it is worthwhile identifying all admissible larger audiences in which the desired audience sits. Data for the smallest audience suitable for reporting can be used to gain insights into the performance of the smaller audience.

What other Changes can Influence the Data?

As discussed through this document, changes in universes, panel controls and weighting will influence the reported data. Other changes from a technical point of view can also influence the data, some examples are as follows:

RULES FOR REPORTING ARE AMENDED

The rules for reporting of data can change in response to changing market conditions (e.g. the inclusion of time-shifted viewing from 1st September 2010)

AMENDMENTS TO QC PROCESSING RULES

Nielsen operates a number of rules for quality control in daily processing of viewing figures. A number of quality control checks which influence the in-tab status of a panel household are parameter driven or governed by a set of rules. Changes to the value of these parameters and also changes to QC rules can be made from time-to-time in response to perceived changes in market conditions which could affect optimality of such rules. These changes may have a material impact on reported viewing levels.

A METHOD OF TELEVISION RECEPTION IS SWITCHED OFF

Changes in reception methods present a number of challenges for audience measurement. Development work is often required to accommodate the change in day-to-day processing.

Can we measure viewing on Digital Devices?

At present, viewing on digital devices is not reported in the currency data. The currency data includes all viewing on a TV set that can be matched back to content broadcast within the past 7 days. This includes live and recorded content from a linear TV source and content from a Web TV source (for example, a Broadcast Player service) that is streamed on the TV set.

However, using Nielsen's Streaming Meter, TAM Ireland have started measuring in-home streaming activity on TV sets and Digital Devices. The streaming meter detects streaming on any device on the home's fixed-broadband network, whether attached to a metered television (e.g. a Smart TV, Games Console, Amazon Fire Stick) or a standalone Digital Device connected to the network (PC, Laptop, Tablet or Smartphone).

For more information, please contact jill@tamireland.ie

About TAM Ireland

TAM Ireland (Television Audience Measurement Ireland Ltd) oversees an accurate and effective audience measurement system for the whole of the television advertising industry.

TAM Ireland is made up of the majority of commercial broadcasters operating in Ireland (RTÉ, Virgin Media, TG4, Channel 4, Sky Ireland & Viacom) and the main Irish media buying agencies. TAM commissions Nielsen to carry out the actual measurement service. TAM Ireland's mission is to provide precise viewership data and promote the power of television with a commitment to excellence, vision and adaptability. For more information, visit www.tamireland.ie

About Nielsen

Nielsen shapes the world's media and content as a global leader in audience measurement, data and analytics. Through our understanding of people and their behaviors across all channels and platforms, we empower our clients with independent and actionable intelligence so they can connect and engage with their audiences—now and into the future.

An S&P 500 company, Nielsen (NYSE: NLSN) operates around the world in more than 55 countries. Learn more at www.nielsen.com or www.nielsen.com/investors and connect with us on social media.

Audience Is Everything®