



pretty good get canceled?
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of background about a
between audience
television business.



What TV Ratings Really Mean (And Other Frequently-Asked Questions)

You just heard that a
TV Show was ranked
#1 in the NielsenTV
ratings. What does that
really mean? How does
Nielsen Media
Research "rate" TV
shows? Why do shows
you think are really
This page will answer
process give you a bit
unique partnership
research and the

NielsenTV ratings are a service of Nielsen Media Research. The company was founded in 1923 by Arthur C. Nielsen Sr. It was one of the first research companies to measure the audience for a rapidly developing radio broadcasting and advertising industry. And Nielsen Media Research was there again in 1950, at the birth of the TV broadcasting and advertising business, and has remained the official national measurement service of the television industry for over 40 years.

Because a program or a commercial which is sent over the air, on a cable system, or direct from a satellite is available to be seen by millions of viewers, somebody has to count the viewers. Unlike a newspaper or a magazine, however, where the publisher can count how many copies are sold, there is no simple way to know exactly how many people are watching any given program. Nielsen Media Research estimates the audience by drawing a sample and then counting the number of viewers in the sample.

NielsenTV ratings provide an estimate of the audience for just about every program that can be seen on TV. We do this through several research methods about which we will have a lot more to say later on this page.

But what Nielsen Media Research means by a "TV rating" is not the same as the common usage of the word "rating". Nielsen Media Research does not provide qualitative evaluations of how much a program is "liked" when we rate programs. The TV rating is only the simplest and most democratic measure of the audience: how many people watched. Programs which have larger audiences are, by definition, the successful ones. Ratings numbers which you may have seen are the average audience rating, or the percent tuned to a particular program during the average minute.

Some people have described the NielsenTV ratings as being similar to voting. The role of Nielsen Media Research in estimating the viewers is somewhat like the role of the board of elections in counting the votes. But the role of the viewers in Nielsen Media Research's panels is quite different from voters. They are not supposed to vote for or against programs by viewing them or not viewing them; our panel members represent the viewing of the actual audience simply by watching what they normally watch.



So when the NielsenTV ratings report that a show is "top ranked" for the week, we are saying that this is the show which was watched by more people than anything else on any channel at any time during the week. It is literally the most popular show because its audience has more of the population in it.

There are two questions which NielsenTV ratings answer about TV viewing: "Who is watching TV?" and "What are they watching?" These are not easy questions to answer, and we use research methods which have been developed and refined over many years to provide answers every single day.

How does Nielsen Media Research know who is watching?

The way that Nielsen Media Research finds out about who is watching is to measure what a sample of television viewers are watching. For our national ratings estimates, we use a sample of more than 5,000 households, containing over 13,000 people who have agreed to participate. Since there are over 99 million households with TVs in the U.S., it might seem that a sample of 5,000 is just not big enough to represent the nation.

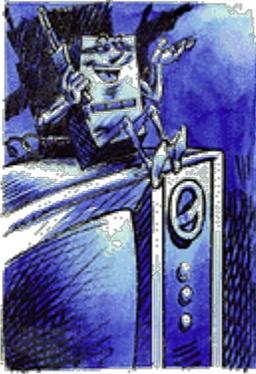
Actually, a representative sample doesn't have to be very large to represent the population it is drawn from. For example, you don't need to eat an entire pot of vegetable soup to know what kind of soup it is. A cup of soup is more than adequate to represent what is in the pot. If, however, you don't stir the soup to make sure that all of the various ingredients have a good chance of ending up in the cup, you might just pour a cup of vegetable broth. Stirring the soup is a way to make sure that the sample you draw represents all the different parts of what is in the pot.

While a sample doesn't have to be very large to represent the population, the sample does need to be selected in a way which gives all members of the population the same chance of being chosen.

If 50% of the vegetable pieces in a huge pot are carrot cubes, the only way to know it for sure would be to examine and count the contents of the entire pot. Let's say we stir well and pour a cup of soup with 10 vegetable pieces in the cup. If sampling were a perfect process, we would get five carrot cubes out of ten pieces. What actually happens is that we usually get close to five carrot cubes-sometimes a little more and sometimes a little less and sometimes exactly five. It is possible, but really unlikely, to stir well and get no carrot pieces-or to get all carrot pieces. So we could get a rough estimate of the proportion of carrots in the pot from counting what is in the cup.

If we wanted a closer estimate, we would take a larger sample. Imagine if we stirred well and then poured out enough soup to contain 5,000 vegetable pieces. We probably wouldn't get exactly 2,500 carrot pieces, but the chance of getting no carrots at all is very remote. In fact, according to sampling theory and a very tasty laboratory test, 19 out of 20 times we take a well-stirred sample of soup containing 5,000 vegetable pieces, we get between 48% and 52% carrots. There is no guarantee that the percentage of carrots in a sample of this size will be between 48% and 52% (one time in 20 it will be outside this range, but usually not far outside this range). The same sampling errors apply to a representative sample of television viewers.

Does Nielsen Media Research measure homes, TVs, programs, commercials or



people?

In order to provide all the information which the TV and advertising industries need, Nielsen Media Research actually measures all of the above. We report the amount of TV usage on every set in a sample household - those are homes which have agreed to participate in the Nielsen TV sampling for a specific period of time.

Just like a recipe in which several ingredients have to be combined, Nielsen Media Research constructs TV ratings from several different sources of information.

Measuring TV sets

In a specially selected sample of homes, Nielsen Media Research technicians install metering equipment on TV sets, VCRs and cable boxes (and even satellite dishes). The NielsenTV meters automatically and invisibly keep track of when the sets are on and what the sets are tuned to. These meters are connected to a central "black box," which is actually a very small computer and modem. Information from the meters is collected by the black box, and in the middle of the night all the black boxes call in their information to our central computers.

Identifying TV programs

For us to know what is on the channel at the time it is tuned, we have to collect a large amount of information every day about what is on every TV station and cable channel all across the country. A program may be scheduled by a network, but some stations that usually carry that network may not carry that program, or may delay the program and show it at a different time.

Nielsen Media Research's primary source of information about which programs are airing for each station or cable channel comes from a very special coded ID number that is part of almost every TV picture—a series of lines and dots in the top edge of the picture which labels the program and episode. Nielsen Media Research developed and patented this systems, which we call AMOL, or Automated Measurement Of Line-ups. All across the country, we have sites where TV stations are monitored and the program ID codes are detected and collected. Each night, these monitoring sites connect up to our central computer and download the information. We compile the electronic program information and compare it to other sources of information we have already received. If there are discrepancies, we call TV stations and cable operators to verify what actually was aired. Keeping track of what is on TV is also done with the help of program listings provided by networks, stations and cable systems, as well as published TV listings.

We track more than 1,700 TV stations and 11,000 cable systems. With this database as a starting point, we can credit tuning and viewing to all of the networks, syndicators, cable networks, TV stations and cable systems involved in providing TV programming to the viewing public.

Identifying commercials

Although there are many TV programs, there are even more commercials. Keeping track of what commercials are on TV is another service provided by Nielsen Media Research. Using

a special passive TV signal identification technology, commercials on TV stations are continuously monitored and converted into a digital "fingerprint". These fingerprints are then compared to a computer file of fingerprints from thousands of different commercials and automatically identified whenever possible (which is about 95% of the time). The other 5% of the time, videotapes of unmatched commercials are sent to a central office to be viewed and properly credited. This information is used to produce reports detailing when and where TV commercials actually aired.

Measuring People

This is the main ingredient in the recipe for ratings: who is watching? When we combine the measurement of who is watching with what channel is tuned and what program is on that channel, we can credit viewing to a program.

Nielsen Media Research measures who is watching programs which reach the entire nation with the Nielsen People Meter. In our national sample, we install set meters which have an attachment called a "People Meter". The People Meter is a box, about the size of a paperback book, which is placed on or near each TV set.



The box has buttons and lights which are assigned to each person who lives in the household (with additional buttons for guests). There is also a remote control to operate the people meter from anywhere in the room.

When a viewer begins watching TV, they push their button, changing their indicator light from red to green. When they finish watching, they push their button again and the indicator changes back to red. periodically, the lights flash to remind people to check to make sure that the information in the people meter is accurate.

Information from the people meters is combined with set tuning information and relayed to Nielsen Media Research each night.

National and local measurement

So far, we have been describing how Nielsen Media Research measures audiences to programs which reach the entire nation. But the television system in the United States also requires a local measurement of how programs perform in specific markets. In fact, Nielsen Media Research measures [more than 200 individual local television markets](#) in addition to



the national measurement service. There are many important differences in the way Nielsen Media Research measures local television.

Diaries: Another way to know who is watching

To measure the audiences for local television, Nielsen Media Research gathers viewing information using TV diaries, booklets in which samples of viewers record their television viewing during a measurement week. We conduct diary measurement for [more than 200 individual local television](#) four times each year, during February, May, July, and November: (You may have

heard of these as ["sweep" months](#), in which we conduct a complete diary measurement across the nation.)

The diary requests that viewers write down not only who watched, but what program and what channel they watched.

We have tried to make the task of filling out a diary as easy as possible by asking people to report what they do by quarter hours (instead of minute-by-minute). Once the diaries are filled out, viewers mail them back to us and we transfer the information into our computers in order to calculate ratings.

[In more than 50 of the largest markets](#), we have a sample of homes with set meters (not people meters) which provide the tuning status (set on/off, channel and time) of TV sets in the home. We collect information about who is viewing from separate samples of homes in these markets with diaries for each TV set. We combine the meter and diary information in a way which projects the diary viewing data adjusted to the meter tuning data.

How does Nielsen Media Research know if its viewing information is accurate?

No measurement system is perfect, whether it measures the entire population or just a sample. Errors are always a possibility. When measurement is based on a sample, there is the additional source of error which comes from sampling variation (some samples are going to be a bit high, others a bit low).

For this reason, Nielsen Media Research regularly cross-checks the information obtained from different samples and different measurement methods. Remarkably, the ratings produced from more than 100,000 diaries collected from all markets during each sweep month have been similar to the ratings based on 5,000 People Meter homes for the same period of time. Different measurement methods, completely separate samples-and a vast difference in sampling size-yet they both produce similar estimates of audience.

In addition to this, we have ongoing audits and quality checks to make sure that all of our procedures are working correctly.

Who are the NielsenTV families?

The NielsenTV families are a cross-section of the households with television sets all across America. Because we have selected them in a way which gives every household an equal chance of being picked, we have all kinds of households in the sample. This means that we



have homes from all fifty states, from cities and towns, suburbs and rural areas. We have people who own their homes and people who live in apartments. Some homes in the panel have children and some don't.

Various ethnic and income groups are represented. When we check the characteristics of households in our samples against the U.S. Census data, we find that our samples look very much like the population. Of course, the match is not perfect. When you draw a representative sample, it is usually close to the population on a given characteristic.

Between 11 and 12 percent of the NielsenTV samples are African American, for example, and this matches the percentage of all TV households in the United States which are classified as African American.

Let's look at the individual samples in terms of African American representation. National People Meter Sample -- There are 5,000 households in this sample. The number fluctuates daily as about 300 households come in and out of the sample every month. Of this number, nearly 550 households are African American, or about 11 percent of the total.

How do I become a member of the NielsenTV sample?

Strictly through chance. Naturally we'd like to accommodate people who offer to be in our sample, but doing so would violate basic laws of sampling practice. The sample would immediately become biased because those who asked to join may be systematically different from the population at large.

Instead, we carefully draw our sample in a way that offers every U.S. television household an equal chance of being selected. Once the homes are selected and agree to participate, Nielsen Media Research protects their privacy by keeping their identities confidential.

How do you make sure that a sample is representative of the population?

If every member of the population has an equally good chance of being in the sample, then this makes it a representative sample. Through statistical theory (and many years of practical experience which is consistent with that theory), we know that fairly drawn (or random) samples vary in usually small ways from the population. Over time these small differences tend to average out.

We check our samples in various ways. Where we do know something about the characteristics of the entire population (thanks to U.S. Census Bureau data), we compare our sample to the population. We find that although the samples aren't identical to the population, they are about as close to it as statistical theory predicts. The most important thing to check in our samples is the television viewing information. Although no one has measured the viewing of the entire population, we do have ways to cross check against other samples and other methods of measurement. We regularly compare our National People Meter audience data to the combined information from the diaries all across the [200+ local markets we measure](#).



Occasionally, we do special studies called Telephone Coincidentals. In these tests, we call thousands of randomly selected telephone numbers and ask people if their TV sets are on and who is watching. This research provides a completely independent check on the amount of TV usage and viewing, and when we have found some differences,

it has helped us zero in on ways to improve our ongoing measurement systems.

really watching TV?

This is really one of the most difficult questions we face. Some of the information we measure is possible to check by independent means. Programs are carried by stations and we can observe that when it happens. TV sets are tuned to particular stations and not to others, and we can measure that when it happens.

The only person who knows when viewing occurs is the viewer. Viewing is not necessarily looking at a TV; it is not necessarily being in the room with a TV; it is something that only the viewer can define. This is why we use the diary and the people meter; so that viewers can tell us what they do.

We conduct special research among former members of our TV meter and diary ratings samples to learn more about how they actually watch television and how accurately they have reported their viewing. With the help of the viewing public, we are constantly learning more about the partnership between TV and its audience.

How are the NielsenTV ratings used?

Nielsen Media Research's role is to measure both what is transmitted and what is received. By doing this, we provide the programmers and advertisers with vital feedback on their audience.

NielsenTV ratings are used like currency in the marketplace of advertiser-supported TV. When advertisers want a commercial to reach an audience, they need to place it in TV programs which deliver an audience. The more audience a program delivers, the more the commercial time is worth to advertisers. So the amount charged for advertising is usually a negotiated rate per thousand viewers multiplied by the Nielsen Media Research audience estimate (in thousands).

Programs are expensive to produce, whether they attract large audiences or not. In the long run, TV programmers can't pay more for a program than they can earn from selling advertising in it.

Does Nielsen Media Research cancel low rated programs?

No. Occasionally some viewers find that a program they watch gets canceled. By estimating the audience, our information helps programmers keep the popular shows on TV, and it also helps them make the difficult decisions to cancel unpopular shows.

The irony of the mass medium of television is that a program with "only" a few million viewers may be an unpopular program. It may take ten million viewers for a network or nationally syndicated program to be popular enough to be a business success. Every time a program is canceled, a few million viewers feel betrayed. But if programmers tried to keep all programs going, the shows that lose money would eventually put the programmers out of business.

Nielsen Media Research ratings are also used by non-commercial television. They can learn about the audience they serve and make better programming decisions.

In Closing... We have just touched the surface of a very complicated measurement system which Nielsen Media Research operates every day to provide information about who is watching TV and what they are watching. Using a sample of homes with diaries, set meters, or People Meters and combining this information with extensive databases of what programs are on each TV station and cable channel, Nielsen Media Research produces TV ratings- the independent estimates of audiences which help the television industry operate their business and serve the American public.