What TV Ratings Really Mean

You just heard that a TV Show was ranked #1 in the Nielsen Media Research ratings. What does that really mean? How does Nielsen Media Research "rate" TV shows? Why do shows you think are really pretty good get canceled? This page will answer these questions, and in the process give you a bit of background about a unique partnership between audience research and the television business.

Nielsen Media Research ratings are a service of Nielsen Media Research. The company was founded in the U.S. 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. In Canada, Nielsen Media Research began measuring television audiences in 1959.

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.

Nielsen Media Research 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 Nielsen Media Research 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.
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So when the Nielsen Media Research 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 Nielsen Media Research 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.

Knowing 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 3,000 households, containing over 7,000 people who have agreed to participate. Since there are over 12 million households with TVs in Canada, it might seem that a sample of 3,000 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 3,000 vegetable pieces. We probably wouldn't get exactly 1,500 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 3,000 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.

### Measuring homes, TVs, programs, commercials and people

#### 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 Nielsen Media Research 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 has established agreements with the stations and networks to receive confirmed station line-up information. The Nielsen Program Line-up System or PROL is a PC based system that allows broadcaster clients to input schedules from their own offices. Clients that input their own line-up electronically transmit their confirmed line-up to Nielsen on a daily basis. Program line-ups for some stations are inputted by Nielsen staff. The Nielsen system identifies a new program by the program code. Therefore, if there are two program codes for the same program, the system treats them as different programs.

We track more than 800 TV stations and 1,600 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 anywhere in Canada with the Nielsen People Meter. 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.

**Information Accuracy**

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
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comes from sampling variation (some samples are going to be a bit high, others a bit low). We regularly check the data after it has been received. We employ forty-six different editing procedures to ensure the quality of the raw data which is then processed for use in reporting audience estimates. The objective of these editing procedures is to eliminate unknown, suspect or unusable data.

Once this editing system has screened all the data for the day, it produces daily performance reports for each household in the sample. It is the Metered Checking Department's first priority of the day to assess the results of the prior day's performance. This includes the number of homes providing good data and homes providing bad data, e.g., irregularities, faults, etc. The homes that do not provide 'good' data are identified and the information is faxed out to the appropriate Field Representative. The Field Representative will respond to the problem by contacting the household and taking the necessary actions required to rectify the problem.

Nielsen Media Research Families

The Nielsen Media Research families are a cross-section of the households with television sets all across Canada. 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 provinces, 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 Statistics Canada 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.

Sample Selection

Our sample homes are selected 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 Canadian 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.

Representative Samples

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.
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We check our samples in various ways. Where we do know something about the characteristics of the entire population (thanks to Statistics Canada 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.

Viewing Confirmation

Confirming whether people are actually watching television 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 people meter; so that viewers can tell us what they do. With the help of the viewing public, we are constantly learning more about the partnership between TV and its audience.

Ratings Usage

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.

Nielsen Media Research 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.

Program Cancellations

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 what may seem like a lot of viewers may actually be an unpopular program. It may take hundreds of thousands of viewers for a network or nationally syndicated program to be popular enough to be a business success. Every time a program is canceled, 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.