Nielsen Media Research
Research Paper

Local People Meters
Los Angeles

Local People Meters versus the Current Meter/Diary Methodology:
A Macro Level Examination and Analysis of the Los Angeles Local People Meter

©Copyright 2004 Nielsen Media Research

Nielsen
Media Research

a vnu business

Table of Contents

Copyright 2004 Nielsen Media Research

Nielsen
Media Research

Nielsen Media Research has announced the introduction of an improved methodology to measure television audiences in the top ten U.S. markets. This method uses electronic People Meters for the collection of demographic ratings, replacing the paper diary as the source of this information. On August 5, 2004, Nielsen launched its People Meter service in Los Angeles as the exclusive local audience measurement service in the market.

The attached research paper provides an overview of the new methodology, a detailed review of the quality metrics of the Los Angeles People Meter sample along with the audience levels reported by the system, and a discussion of some of the key reasons for the differences in audience levels reported by the two systems during the parallel reporting period.

Executive Summary

In Los Angeles, on July 8, 2004, Nielsen Media Research introduced a People Meter system for collecting and reporting television audience data. At the same time, Nielsen maintained the current meter / diary system. These two services were run parallel to one another for a period of 28 days, at which time the set meter and diary system ceased operations, leaving the People Meter as the new source for audience measurement in Los Angeles as of August 5, 2004.

The Benefits of Local People Meters

The Local People Meter (LPM) system provides a more accurate measurement of television audience than the system it replaced. The People Meter has numerous features that address many of the known limitations of the current set meter / paper diary methodology.

- The People Meter panel size is larger by 48% (800 vs. 540 sample households), providing more stable data and significant reductions in sampling error.
- Response rates are 25% higher, providing more accurate and projectable data.
- The demographic composition of the People Meter sample is more representative of the Los Angeles marketplace, when compared to the current system, and provides more representative data.
- The People Meter panel more accurately matches the ethnic and racial composition of the Los Angeles marketplace.
- The People Meter provides an electronic, minute-by-minute record of ***who*** is watching ***what*** on television without having to rely on the memory of a diary keeper.

Copyright 2004 Nielsen Media Research

  - Paper diaries are sometimes filled out in advance, or after programs are viewed, or by a parent for a child who is viewing television.
  - The diary overstates the duration of a viewing session since people tend to fill in whole programs, rather than portions watched.
  - The People Meter better captures infrequent viewing to cable, pay cable, and smaller broadcast channels compared to the paper diary.
- For the above reasons, the People Meter is recognized and used worldwide as the current state-of-the-art television audience measurement system. It is the same methodology that Nielsen has used in its National Television Measurement service since 1987, in its National Hispanic and Los Angeles Hispanic services since 1992, and in its Local People Meter sample in Boston since 2002.

The Differences

The more accurate Local People Meter measurement delivers audience levels that are in some cases different from those collected with the current set meter / diary methodology. As such, Local People Meters show:

- Somewhat lower household tuning levels (a 2-point HUT difference in total day, or 22 fewer minutes per day of tuning in the LPM sample).
- Somewhat higher persons viewing levels.
- A shift in persons viewing, for all audiences, registering more viewing to a wider and more diverse array of program sources, and, in turn, somewhat lesser viewing to stronger, more traditional programs and program sources.

The Reasons for the Differences

Several factors were studied to determine what could lead to the lower household viewing levels and shifts in viewing patterns that we see when we compare the two methodologies.

The most salient reasons for the differences can be attributed to the following factors:

- **"Tuning Without Viewing"** can account for approximately 14 of the 22-minute difference seen in household tuning levels. Tuning without viewing occurs when the television set is on and no one is watching. However, we believe that the prompting (flashing lights) of a People Meter sometimes encourages panelists to turn off the television, having been sensitized to the fact that it had been on but with no one watching. In a set meter household, where there is no mechanism to measure persons,

Copyright 2004 Nielsen Media Research

there is no prompting and, therefore, no stimulus to turn the set off. For that reason, we believe that audience levels recorded by the set meter will contain more tuning (the set is on) with no one watching than the People Meter. This causes the household ratings to be higher with the meter diary methodology. This will not, however, affect persons ratings, which are, in fact, higher with the People Meter.

- **The Sample Composition** of the African American sub-sample differs substantially between the LPM and the set meter on larger homes and child homes. Independent universe estimates show the LPM properly representing these characteristics, while the set meter is considerably high on both. When appropriate adjustments are made to the set meter panel to estimate the impact of this difference, the set meter African American HUTs decline by almost three points on a total day basis. This imbalance in the set meter demographic distribution can explain a significant proportion of the lower HUTs for African American households, and can account for approximately four minutes of the 22-minute overall HUT difference.

- **Limitations of the Diary** can account for many of the differences in the persons viewing patterns that are evident between the two samples. Despite an ongoing program to improve diary methodology, our research indicates that the diary is sometimes filled out at times other than when the panelist is actually watching, and that can lead to systematic differences in the audiences. A People Meter, on the other hand, electronically measures viewing in real time. As such, the diary may:
    - Understate viewing to infrequently-watched programs and program sources
    - Overstate viewing to popular and stripped programs
    - Overstate the duration of viewing to specific programs

- **Sampling Error** can contribute randomly to differences in viewing patterns between the two panels. Two samples of 540 and 800 households each will differ somewhat (even if they had identical methodologies) due to the variation inherent in sampling. The expected size of the difference is calculable and represents part of the differences that we observe. This may be especially true for targeted media that tend to draw most of their audience from certain subgroups, which, in and of themselves, are subject to even more sampling variation than the total sample. Higher response rates in the People Meter panel will make it more representative of the marketplace because the panel contains a larger proportion of Basics (pre-designated households) and, as such, will lead to better representation of viewing patterns. However, this effect is

Copyright 2004 Nielsen Media Research

almost impossible to calculate, since one cannot know the behavior of those who refuse to participate. Nonetheless, little difference was seen in the viewing behaviors of basic homes when compared to the alternate homes that were chosen to replace refusing basics.

Several other factors were investigated and ruled out as significant contributors to the differences. They include:

- **Cutback Homes** – The LPM sample is composed of existing National People Meter homes ("cutback homes") and newly-installed Local People Meter homes. In Los Angeles, there is very little difference between HUT levels in the cutback sample and the LPM-only sample.

- **Fault Rates** – Fault rate is a measure of the number of homes that are not in tabulation for a given day due to their not passing quality edits as a result of one or more of a number of reasons, such as power failures, the addition of new equipment in the household, or persons not complying with button-pushing requirements. Faulting patterns were investigated to determine whether the levels of faulting, or the differential nature of faulting, were different for the LPM versus set meter panels. Overall, in-tab rates were consistently higher in the LPM sample. Differential fault rates were similar. Faulting was higher in both panels for heavy-viewing households, and the LPM had lower (better) fault rates for households with children, large households, and Hispanic households. Differential faulting is an important issue and ongoing concern for Nielsen, and internal and external committees continue to study ways to improve fault rates. However, the results of analyses comparing fault rates of the LPM to those of the set meter conclude that the fault rates in these two samples do not significantly differ from one another and do not play a role in the reported audience differences.

- **Button Pushing Compliance** – Four years ago, Nielsen conducted studies to determine if there was evidence that panelists might experience fatigue in pressing their buttons over time. As a result of that analysis, we restructured the schedule according to which we dispersed incentive bonuses. This spring, we released a report on a follow-up study which suggested that there was little change in button pushing over time. We concluded that the schedules that we had instituted in 2000/2001 were effective.

In summary, for the May 2004 NSI measurement, the Local People Meter and set meter samples reported a total-day HUT difference of 2.0 points (42.4 versus 40.2) with the LPM lower. This difference translates to 22 fewer tuning minutes per day being reported in the LPM in the average home. We believe that this difference is the result of:

Copyright 2004 Nielsen Media Research

- Up to 14 minutes of the 22-minute difference may be accounted for by an under-reporting of tuning without viewing in the LPM
- Four minutes can be accounted for by the African American sub-group in the set meter sample, which over-represented the higher tuning levels of larger African American households (5+) and African American households with any children <18.
- The remaining four minutes are likely to be due to the impact of sampling error and the overall higher quality associated with the LPM sample.

The following research paper discusses these issues in detail. Nielsen Media Research has devoted a great deal of effort to deliver an audience measurement panel in Los Angeles with the highest possible quality. We have made numerous quality improvements to our Local and National People Meter Methodology over the past few years, and, while we believe that the methods used are the best currently available, we will continue to work with the marketplace – both our clients and interested groups – to further improve these methods over the coming months and years.

Copyright 2004 Nielsen Media Research

Overview

Since 1970, the Los Angeles market had been measured using a set meter and diary methodology to capture and report audience estimates. While the set meter reports, on an overnight basis, household level data 365 days a year, the diary sample, used to collect and report persons level estimates, measures only for seven (7) months a year, January, February, March, May, July, October, and November.

Since October 2003, when the LPM panel reached a level of 540 installed households, Nielsen Media Research had been releasing preliminary ratings estimates to its clients in the market. While this has allowed clients to compare the data coming from the LPM to that of the meter/diary methodology, it is important to note that many of these comparisons had been based on a partial LPM sample, not the final sample of 800 installed households.

The People Meter sample was completed and met with Nielsen's stated quality goals during the early summer. Consequently, restrictions on the use of People Meter data were lifted commencing July 8, 2004. On August 5, 2004, the set meter and diary methodology was shut down, making the Local People Meter sample the exclusive audience measurement service in Los Angeles. This report will focus on a comparison between the two services for the May survey period, a time during which the LPM sample had reached its full size of 800, yielding more stable comparisons.

The purpose of this paper is to examine the data coming from the two sources from a broad perspective. It will examine overall household usage (HUTs) and persons usage (PUTs) as well as distributions of gross rating points (GRPs) in the market to major media groups. These media groups include:

- English Language Broadcast
- Spanish Language Broadcast
- PBS
- Ad Supported Cable sources
- Pay Cable sources

Because of recent focus on the LPM and its ability to properly measure ethnic audiences, comparisons in this paper will not only be produced for the total market samples, but also produced, sample sizes permitting, for the African American, Hispanic and Asian sub-sections.

The paper will first provide comparative information on key metrics and estimates coming from both measures and offer observations on any differences. Then, to the extent that differences are observed, the paper will provide hypotheses and analyses, which might explain these differences.

Copyright 2004 Nielsen Media Research

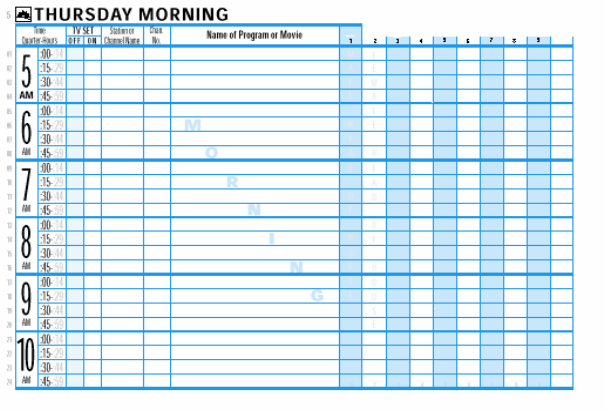
Before providing these comparisons, it is helpful to present an overview of the methods compared -- the meter/diary methodology, and its replacement, the Local People Meter.

What Are Meter/Diary Ratings?

In 55 of the largest U.S. markets, Nielsen currently measures television viewing by combining the results of two types of audience measurement – a set meter and a paper diary.

The first type of measurement – the set meter – addresses the question of ***what*** is being watched. First, a panel of cooperating homes (540 in LA, for example) is selected to participate for a period of five years. Each tuning device (television set, VCR, DVD player, etc.) is equipped with a meter that records the channel to which the tuner is set. In this way we know ***what*** each set in the house is tuned to, and for how long. Household ratings from the set meters are reported every day of the year.

The second type of measurement – the paper diary – is used to address the question of ***who*** is watching. Four times a year (February, May, July and November – called "sweeps"), Nielsen mails paper diaries to separate samples. In January, March, and October we conduct diary measurement as well for several larger markets. We ask each household member to enter their television viewing for one week, by indicating what program they watched for each 15-minute (quarter hour) segment that they watched television.



Since the accuracy of the passive set meter is far superior to the self-reporting nature of the diary, at the end of a sweeps month, Nielsen integrates the results of the two methods and projects the persons ratings (the ***who***) to the set meter ratings (the ***what***) to produce the demographic ratings. The household ratings come from the meter sample.

Advantages of Meter/Diary Measurement:

- The primary advantage of such a mixed methodology is cost. Collecting demographic information in this manner only four to seven times a year, while not inexpensive, is less costly for local market television clients than employing a People Meter to provide demographic data 365 days a year. In fact, in some 150 smaller markets, only a diary is used due to the local advertising marketplace's inability to support the cost of the set meter sample. For example, there

Copyright 2004 Nielsen Media Research

are approximately 40 local markets that have fewer than 100,000 households. It would be impossible for such small markets to support a People Meter service, as we know it today.

- A second advantage is the ability to have a household accept a passive set meter and remain in the sample for up to five years.

Limitations of the Diary

Despite a fairly aggressive ongoing program to improve the diary methodology:

- Diaries might not be filled out by the person doing the viewing.
- Diaries might not be filled out as the viewing occurs, introducing inaccuracies due to the passage of time and the role memory plays.
- Diaries are being constantly challenged by the need to report viewing to the ever-expanding set of viewing choices.
- It is getting increasingly more difficult to get a large proportion of people to agree to accept, complete, and return a diary mailed to their house. Response rates for the diaries are substantially lower than those of People Meter samples.
- Finally, as TiVo's, video games, and more digital channels appear on the television landscape, diaries will continue to be more challenged.

What Are Local People Meter Ratings?

People Meters measure both ***what*** is being watched and ***who*** is watching it, in a single sample, electronically, and provide rich demographic data on a daily basis, 365 days a year.

People Meters are considered to be the current best practice for television audience measurement worldwide, and are used in our National ratings service, our Hispanic national service, our local Hispanic service in Los Angeles, and our local market service in Boston. They are also about to be introduced to the remaining top ten markets in the U.S. Our People Meter services have been audited annually by Ernst & Young and accredited by the Media Rating Council. Internationally, People Meters are used by all major rating services in South American, European, and Asian markets, by companies such as AGB Worldwide, Taylor-Nelson Sofres, IBOPE, Video Research, and Media Fax.

Nielsen Media Research is in the process of doubling the size of its National People Meter sample from what had been 5100 homes to over 12,000 homes.

The Local People Meter sample in Los Angeles will have 800 homes compared to the 540 homes in the current set meter panel. Homes

recruited for the People Meter panels will remain in the sample for up to two years.

The People Meter has two components – a passive set meter to determine what is being watched, and a remote control type of device that allows each family member to simply press their button and log in and out of the audience in real time. The passive set meter component is identical to the one which is currently used in the local market set meter panels.

Advantages of the People Meter

- The People Meter allows a minute-by-minute determination of who is watching what, all day and every day (as opposed to the quarter hour and "sweep" period limitations of the diary).
- The percentage of people agreeing to cooperate in a People Meter panel (response rate, which is a primary factor in determining the quality of a research sample) is considerably higher than that which we can achieve with either the diary or set meter samples due to specialized recruitment procedures and the overall nature of the task. This means that the data from the People Meter sample are more accurate and projectable than that which we can collect from other methods.
- There is no potential bias introduced, based on what people feel their favorite programs are, or believe they are "supposed" to be watching, as might be the case in filling our a paper diary– you need to actually watch a program for it to be recorded with a People Meter.
- There are no potential memory effects of someone else filling out the diary for a family member, or filling out a diary all at once at the end of a week – the meter records the ***who*** and ***what***, impartially and in real time.
- The larger samples we are employing with People Meters allow the marketplace to look more carefully at smaller demographic and socioeconomic breaks, helping "smaller" players (such as new cable networks and niche or targeted programmers) compete more effectively in the marketplace.

Challenges of the People Meter Technology

- People Meters are expensive, both from a technology and panel maintenance perspective. While it is not likely that smaller local markets will be able to afford the current People Meter technology, Nielsen is actively pursuing the feasibility of a low-cost meter to replace the diary in smaller markets.
- Ensuring that panel members press their People Meter buttons properly for the duration of their tenure in the panel is a challenge that Nielsen continually addresses with research programs to improve motivational incentives to the panel members, as well as improved training and coaching procedures for individual household members.

Copyright 2004 Nielsen Media Research

Sample and Audience Comparisons

In the next sections, we provide comparisons between the Meter Diary and LPM systems on the following three dimensions.

- Metrics (quality measures)
- Sample Characteristics
- Audience Comparisons

Metrics

Two of the most important quality metrics for a research panel are (1) sample size and (2) response rate. The LPM has a larger sample size and higher response rate than the Meter / Diary system in Los Angeles. This leads to greater stability and greater accuracy in the audience estimates that are being produced by the LPM.

Sample size is an important measure of reliability because small samples can yield apparent differences just because of normal sampling variation. Sampling variation, or standard error, is a measure of the variability in the ratings because no two samples are identical. However, the larger the sample, the less the sampling variability associated with that sample.

In today's world of ever-increasing fractionalization of audiences, larger sample sizes offer the ability to provide more stable estimates of smaller and more targeted audiences.

Response rate is a measure of accuracy. It will determine the degree to which a sample can properly represent the population from which it was drawn. It is a measure of the percentage of the originally sampled respondents that ultimately is used in the survey data tabulation. Because survey research relies on a sampling of the population that is being measured, it is critical that survey participants are randomly selected and the highest possible proportion of those sampled agree to participate and provide data that can be used in tabulation. While there is no general rule for what level of response rate provides for acceptable survey results, media researchers have always agreed that surveys with higher response rates provide for higher quality survey results (and hence more accurate) than similar surveys with lower response rates.

Copyright 2004 Nielsen Media Research

In order to be able to report an accurate and conservative measure of response rate to its client base, Nielsen Media Research has developed a statistic called the Sample Performance Indicator, or SPI. The SPI takes into account three important statistics in its measure:

1. The cooperation rate, or the percentage of initially selected respondents who agree to participate in the survey,
2. The installation rate, or the proportion of those who actually have metered equipment installed in their homes, and
3. The in-tab rate, or the proportion of those installed, who have passed Nielsen Media Research edits and whose results are being used in data tabulation.

This SPI computation is more conservative (stringent) than most of the response rate calculations used in the survey research profession.

Sample Size

Larger samples will provide ratings that are more stable and will permit users to look at finer demographic breaks, especially for less-frequently watched programming sources. In Los Angeles, the sample size for the LPM service is 48% greater than for set meters – 800 households vs. 540 households).

The comparison of the variability of demographic ratings is not a simple matter of comparing sample sizes, since the variability of the set meter / diary service is driven by both the overall sample size, and the fact that four different samples each fill out a diary for one week of the four-week month. There is also additional variability introduced by the meter-diary integration procedure used to calculate the persons ratings. In this procedure, the diary ratings are adjusted to match the levels of household tuning recorded in the set meter sample.

Table 1 shows the relative improvement in variability due to the switch to People Meters for one-week and four-week ratings. While the improvement is less for the monthly (four-week) numbers, it is still a significant improvement for all demographic cells.

Copyright 2004 Nielsen Media Research

These comparisons are for the total sample. Similar comparisons were made for African American and Hispanic sub-samples. A review of the data on African American and Hispanics shows that the gains in stability for these sub-groups are even more significant than those for the total sample. In fact, in some cases the standard errors are reduced by more than 50% as a result of converting to LPM. This will clearly lead to more stable data being produced for African American and Hispanic reports. Although we don't report Asian data separately, their reduction in standard error is approximately the same as for African Americans and Hispanics.

Table 1

LPM Standard Error Reductions: LPM vs. ViP

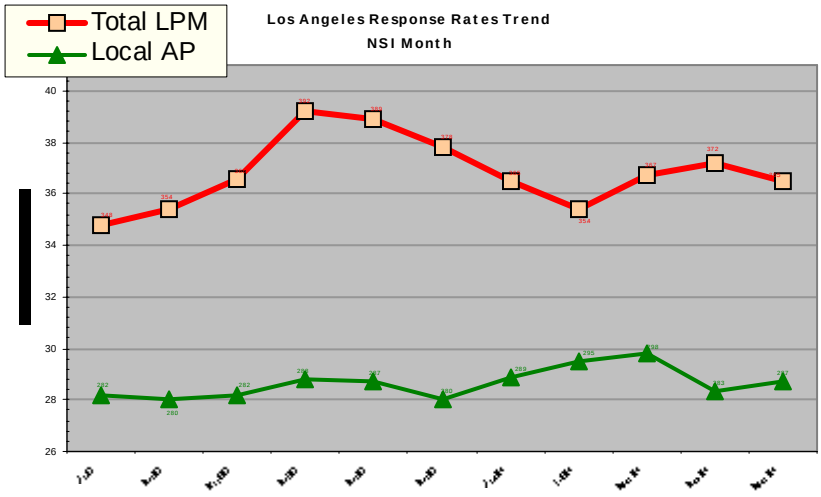
Demographic	One Week	Four Week
Households	-18%	-18%
Persons 2+	-48%	-32%
Persons 18+	-46%	-28%
Persons 50+	-30%	-7%
Kids	-41%	-22%
Teens	-39%	-19%
Men 18-34	-40%	-21%
Men 18-49	-38%	-19%
Men 25-54	-34%	-12%
Men 18+	-40%	-21%
Women 18-34	-40%	-20%
Women 18-49	-40%	-21%
Women 25-54	-36%	-16%
Women 18+	-43%	-24%

SPI (Response Rate)

The higher the response rate (SPI), the more confident we can be of the accuracy of the estimates produced. LPM response rates are substantially and consistently higher than those of the set meter panel.

Chart 1 compares the SPI from the set meter panel (Local AP – Area Probability) to that of the LPM from last July through the most recent data available.[1]

Chart 1



The chart shows that the response rate for LPM is substantially higher than that of the set meter panel. This means that on this metric, the LPM sample is expected to provide the more accurate and projectable ratings data.

[1] Note, the reasons for the substantial increases in the LPM, early on, are related to the panel being in the early stages of recruitment and installation.

Copyright 2004 Nielsen Media Research

Table 2 shows the diary response rates from the recent January, February, March and May 2004 surveys for Los Angeles. Even with a more conservative estimation method, the LPM service provides a response rate superior to that of the diary.

Table 2

Response Rate Comparison
LPM versus Diary

Measurement Period	LPM SPI	Diary Response Rate
Jan 2004	30.8	26.9
Feb 2004	31.8	28.0
Mar 2004	36.7	27.5
May 2004	36.5	26.7

Sample Characteristics

In the following section, we compare the demographic characteristics of the LPM sample, the set meter sample, and the diary samples. All comparisons will be made for the full May 2004 survey period unless otherwise noted.

Market Sections: Local People Meter versus Set Meter

Household Sample Characteristics:

Typical quantitative market sections used to evaluate meter panels, and those to which we attempt to achieve market representation, are:

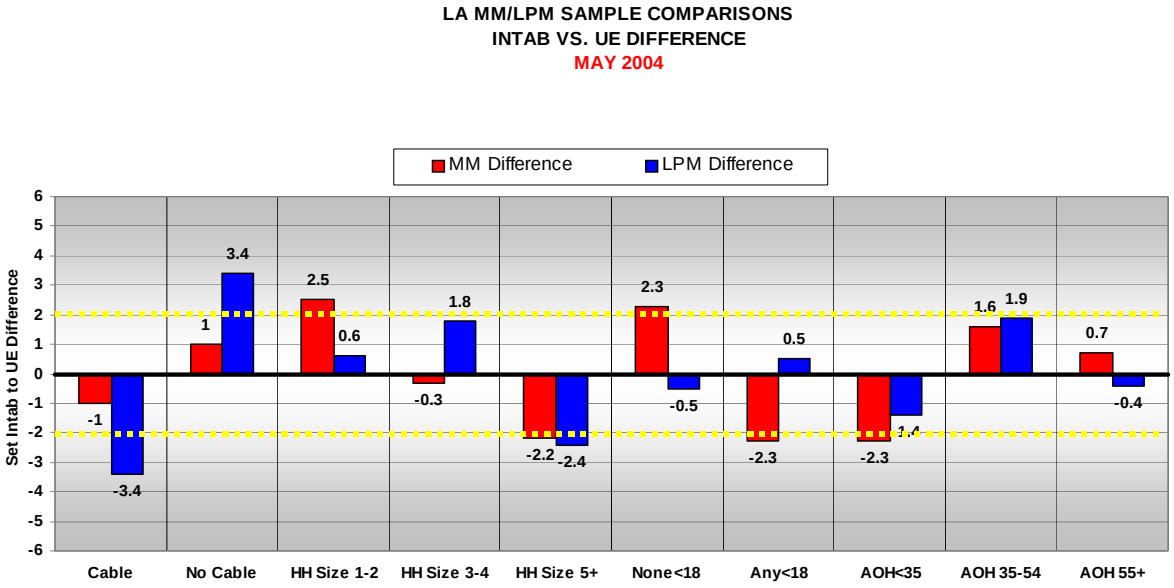
- Presence of Cable
- Presence of Alternate Delivery Systems (ADS)
- Household Size
- Age of Householder
- Presence of non-Adults
- Race of Householder
- Hispanic Identity of Householder
- Geography

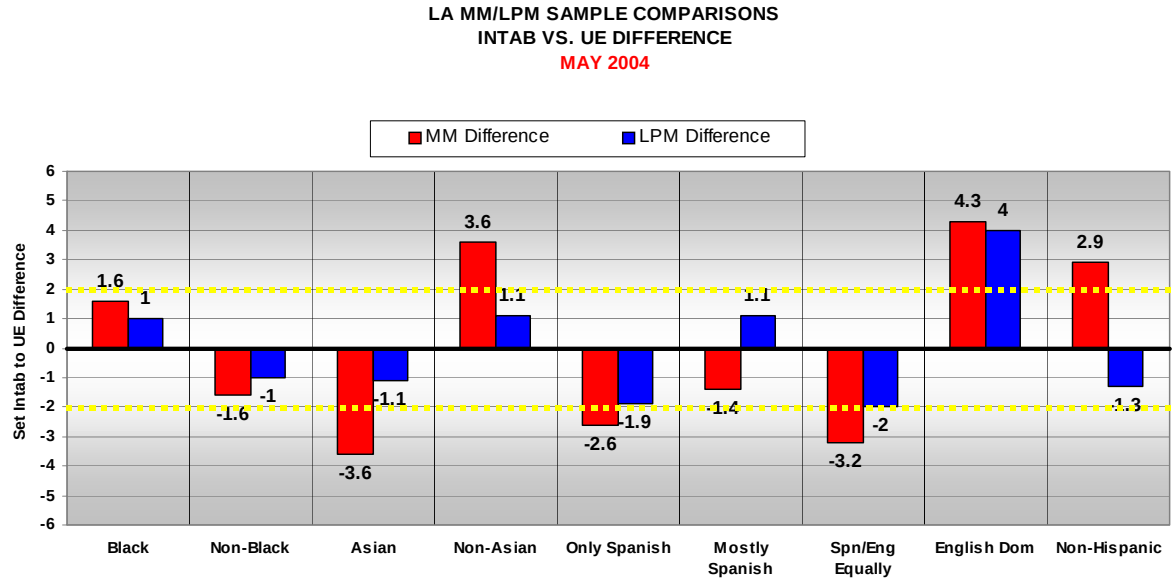
The sample design used in the LPM and the set meter panels is identical. The use of the same sample design, therefore, would lead to the expectation that the sample profiles of each would be very similar. However, there are methodological reasons that the two samples might yield different demographic profiles. The first is sampling variation – just as two samples will not produce the same ratings, they will not produce the same demographic profile. This is why response rate is important. Since the LPM response rates are substantially higher, we would expect that the LPM profile would be closer to its universe than the set meter sample.

Copyright 2004 Nielsen Media Research

Second, panelists in the LPM sample can be in the panel for up to two years whereas panelists in the set meter sample can remain in the panel for up to five years. This can also affect the composition of the panels.

Charts 2 & 3





Demographic profiles of the two samples for the May 2004 NSI survey are shown in Charts 2 and 3 above. The overall sample characteristics for the LPM service are clearly in better alignment with universe estimates than are those for the set meter sample. As of the May 2004 survey, Cable, HH Size 5+, and English Dominant Hispanic households were the only characteristics that exceeded our goals for a two-point tolerance in the LPM sample. We should note that as of

Copyright 2004 Nielsen Media Research

August, both household size wired cable are within two points of their respective universe estimates.

Deviations such as these are not unexpected given the sample sizes involved, and may have less impact on audience estimates because weighting adjustments are made on the in-tabs prior to the audience estimate calculation.

Persons in Households: Local People Meter versus Diary

In the current meter/diary methodology, demographic estimates are derived from persons in households selected to keep a one-week diary. In the LPM methodology, they are derived from the persons living in the LPM homes.

Table 3 shows that the LPM sample is delivering a far better representation of persons demographics than the diary sample.

It is also important to consider the issue of sample size and reliability. Because of the meter/diary adjustment required to align the diary estimates to the meter, the reliability of the estimates derived from the LPM is far superior to that of the set meter and diary. This provides for much greater stability in demographic estimates both for individual ratings and for trends.

Table 3

May 2004
Persons in Households

Demographic	Diary	LPM	UE
Persons 2+	100.0	100.0	100.0
Women 18+	42.0	37.9	38.0
Women 18-24	3.7	5.5	4.8
Women 25-34	6.9	7.4	7.5
Women 35-49	12.9	12.6	11.9
Women 50-54	4.0	3.2	3.3
Women 55-64	6.1	4.2	4.6
Women 65+	8.4	5.0	5.9
Men 18+	36.2	35.0	35.9
Men 18-24	3.4	4.8	5.0
Men 25-34	6.2	6.7	7.6
Men 35-49	11.6	12.2	11.7
Men 50-54	3.4	2.9	3.0
Men 55-64	5.1	4.0	4.2
Men 65+	6.4	4.3	4.3
Teens	8.3	10.7	9.7
Kids	13.4	16.3	16.4

Copyright 2004 Nielsen Media Research

African American Households:

In the LPM, the sample size for African Americans has increased by 44%. For the May 2004 Survey, the LPM installed sample size of African Americans was 78 while the set meter was at 54. Because of these smaller sample sizes, one must recognize that there will be greater variances in sample representation than those seen in the total sample.

Table 4

Los Angeles
African American Households
May 2004 Sweep

Characteristic	LPM Install	MM Install	2004 UE
Cable	63.0	66.1	57.7
Cable+	79.6	81.6	
Household Size			
1-2	52.7	47.8	55.2
3-4	36.6	30.2	31.8
5+	10.7	22.0	13.0
Child	40.4	52.7	37.2
Hispanic	2.6	7.3	
Span Dom	0.0	0.0	
Age Head			
<35	20.4	22.8	23.7
35-54	52.8	50.0	46.9
55-64	12.8	12.9	14.7
65+	14.0	14.3	14.7

In general, both panels seem to align well on Cable, Cable+, and Age of Householder (see Table 4). There is a sizable difference, however, in the representation of household size. The set meter sample over represents these large heavy-viewing households by nine points while the LPM sample is two points low. This finding is significant since there are sizable differences between the African American HUT levels as reported by the set meter and the LPM. The set meter sample also over represents households with children by 15 points. These factors combined may have a significant impact on the reported ratings of the set meter panel.

Copyright 2004 Nielsen Media Research

Table 5 Los Angeles Hispanic Households May 2004 Sweep			
Characteristic	LPM Install	MM Install	2004 UE
Cable	45.5	51.3	49.9
Cable+	66.4	69.3	
Household Size			
1-2	23.9	25.8	23.7
3-4	40.8	40.9	37.5
5+	35.2	33.3	38.7
Child	64.3	57.3	63.9
African Amer.	0.8	2.6	
Language			
Only Span	9.3	8.6	15.8
Most Span	34.4	29.1	32.4
Equal	17.3	15.9	23.9
Most Eng	24.0	25.9	16.8
Only Eng	15.0	20.5	11.2
Age Head			
<35	25.9	29.8	34.7
35-54	55.7	53.2	46.1
55-64	11.7	8.5	10.3
65+	6.8	8.5	8.9

Hispanic Households:

The number of Hispanic households in the LPM sample is 74% greater than that of the set meter panel. At the time of the May sweep, the LPM installed sample size for Hispanics was 266 compared to 153 for the set meter sample.

Although small samples limit our ability to interpret these differences, we find that both samples are light on Only Spanish and Age of Head <35 and high on Mostly/Only English and Age of Head 35-54 (see Table 5). The only sizeable difference between the two panels is the seven-point difference on the presence of non-adults. In this case, the LPM aligns better with the published universe estimate than does the set meter.

Audience Comparisons

We analyzed audience differences along two dimensions. The first was overall usage (HUTs and PUTs) in order to determine the extent to which the two systems are reporting different levels of usage for the Los Angeles market. Second, we reviewed a share analysis that looked at the distribution of the available rating points delivered by each system to major media groups in the market.

Copyright 2004 Nielsen Media Research

Table 6

LOS ANGELES HUT COMPARISON
MAY 2004 AVERAGE

	TOTAL				BLACK				HISPANIC				ASIAN/PACIFIC ISLANDER			
	MM HUT	PM HUT	DIFF	% DIFF	MM HUT	PM HUT	DIFF	% DIFF	MM HUT	PM HUT	DIFF	% DIFF	MM HUT	PM HUT	DIFF	% DIFF
MF 5a-6a	14.25	12.23	**-2.02**	**-14.2%**	30.32	24.11	**-6.21**	**-20.5%**	13.69	9.97	**-3.72**	**-27.2%**	2.43	10.06	**7.63**	**314.0%**
MF 6a-7a	23.76	21.66	**-2.10**	**-8.8%**	45.12	35.20	**-9.92**	**-22.0%**	25.71	22.86	**-2.85**	**-11.1%**	12.03	17.74	**5.71**	**47.5%**
MF 7a-9a	29.07	27.93	**-1.14**	**-3.9%**	42.40	29.99	**-12.41**	**-29.3%**	34.39	33.97	**-0.42**	**-1.2%**	17.31	21.62	**4.31**	**24.9%**
MF 9a-12n	28.25	27.27	**-0.98**	**-3.5%**	41.06	28.16	**-12.90**	**-31.4%**	35.07	35.10	**0.03**	**0.1%**	14.51	20.65	**6.14**	**42.3%**
MF 12n-4p	33.99	32.35	**-1.64**	**-4.8%**	45.97	33.37	**-12.60**	**-27.4%**	40.88	42.00	**1.12**	**2.7%**	20.39	25.82	**5.43**	**26.6%**
MF 4p-5p	44.62	41.47	**-3.15**	**-7.1%**	57.82	40.70	**-17.12**	**-29.6%**	56.07	52.57	**-3.50**	**-6.2%**	21.91	35.18	**13.27**	**60.6%**
MF 5p-6p	48.47	45.24	**-3.23**	**-6.7%**	62.78	48.26	**-14.52**	**-23.1%**	56.65	53.48	**-3.17**	**-5.6%**	27.42	37.67	**10.25**	**37.4%**
MF 6p-6:30p	53.45	50.09	**-3.36**	**-6.3%**	65.97	52.23	**-13.74**	**-20.8%**	60.80	56.93	**-3.87**	**-6.4%**	31.64	42.85	**11.21**	**35.4%**
MF 6:30p-7p	55.93	52.39	**-3.54**	**-6.3%**	66.75	55.52	**-11.23**	**-16.8%**	63.01	58.90	**-4.11**	**-6.5%**	33.82	45.06	**11.24**	**33.2%**
MF 7p-8p	59.65	57.71	**-1.94**	**-3.3%**	71.44	60.41	**-11.03**	**-15.4%**	65.80	64.68	**-1.12**	**-1.7%**	38.14	50.50	**12.36**	**32.4%**
MF 8p-10p	68.75	67.35	**-1.40**	**-2.0%**	76.99	68.13	**-8.86**	**-11.5%**	73.43	72.97	**-0.46**	**-0.6%**	48.16	62.57	**14.41**	**29.9%**
MF 8p-11p	66.63	64.91	**-1.72**	**-2.6%**	76.28	67.61	**-8.67**	**-11.4%**	70.15	69.51	**-0.64**	**-0.9%**	45.89	61.67	**15.78**	**34.4%**
MF 10p-11p	62.40	60.03	**-2.37**	**-3.8%**	74.86	66.57	**-8.29**	**-11.1%**	63.58	62.59	**-0.99**	**-1.6%**	41.35	59.87	**18.52**	**44.8%**
MF 11p-11:30p	49.56	46.35	**-3.21**	**-6.5%**	65.28	60.15	**-5.13**	**-7.9%**	48.54	46.83	**-1.71**	**-3.5%**	29.20	49.48	**20.28**	**69.5%**
MF 11:30p-1a	33.16	29.08	**-4.08**	**-12.3%**	50.70	43.95	**-6.75**	**-13.3%**	30.41	28.66	**-1.75**	**-5.8%**	18.08	31.84	**13.76**	**76.1%**
M-Su Prime (10p)	66.14	64.51	**-1.63**	**-2.5%**	74.56	66.77	**-7.79**	**-10.4%**	69.53	68.55	**-0.98**	**-1.4%**	46.62	59.03	**12.41**	**26.6%**
M-Su Prime (11p)	64.60	62.78	**-1.82**	**-2.8%**	74.03	66.38	**-7.65**	**-10.3%**	67.33	66.43	**-0.90**	**-1.3%**	44.49	58.82	**14.33**	**32.2%**
M-Su 10p-11p	61.30	59.06	**-2.24**	**-3.7%**	72.89	65.56	**-7.33**	**-10.1%**	62.61	61.89	**-0.72**	**-1.1%**	39.94	58.37	**18.43**	**46.1%**
M-Su 11p-11:30p	49.19	46.06	**-3.13**	**-6.4%**	64.92	58.87	**-6.05**	**-9.3%**	48.40	47.05	**-1.35**	**-2.8%**	29.42	48.50	**19.08**	**64.9%**
M-Su 11:30p-1a	33.40	29.29	**-4.11**	**-12.3%**	52.09	43.98	**-8.11**	**-15.6%**	31.11	29.08	**-2.03**	**-6.5%**	19.03	32.14	**13.11**	**68.9%**
M-Su 7a-1a	42.41	40.35	**-2.06**	**-4.9%**	55.52	44.80	**-10.72**	**-19.3%**	47.02	46.22	**-0.80**	**-1.7%**	26.26	35.37	**9.11**	**34.7%**

HUTs

Table 6 shows household usage level (HUT) comparisons by daypart for the May Sweep for the total market, as well as for African American, Hispanic, and Asian sub-samples. Overall, usage levels in the LPM sample are somewhat lower than those in the set meter sample, averaging a two-point difference (or 4.9%). The difference is greater for African Americans (-19.3%), less for Hispanics (-1.7%), while usage among Asians is higher by 34.7% in the LPM sample.

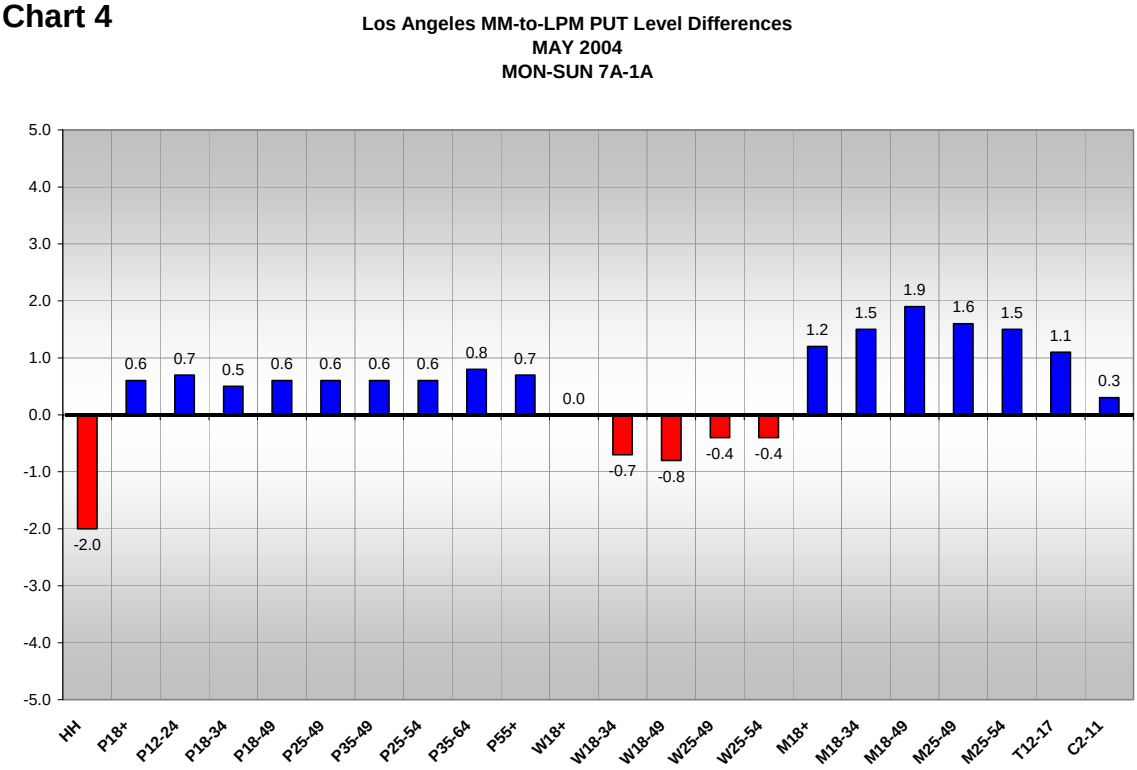
PUTs

Unlike HUTs, persons usage levels (PUTs) in the LPM sample are considerably higher than those for the set meter / diary sample for many demographics and dayparts. Chart 4, for the May 2004 survey, illustrates the differences in PUT for total day (7AM-1AM). PUT's are considerably higher in the LPM for men, kids, and teens and slightly lower for women.

Copyright 2004 Nielsen Media Research

Patterns in PUT levels vary somewhat by daypart, where LPM PUT's are lower in early morning, early fringe, and prime and higher in daytime and late fringe. The other notable exception is for kids in the later time periods where the LPM shows considerably higher levels. This pattern is consistent with expectations based on our belief that women are most likely to be the diary keepers in the house.

Chart 4



Audience Comparisons: Share of Gross Rating Points (GRPs)

In this section, we will explore the distribution of viewing across the following broad media groups:

- English Language Broadcast
- Spanish Language Broadcast
- PBS
- Ad Supported Cable sources
- Pay Cable sources

Ratings for the May survey period are computed for each individual broadcast or cable outlet and then aggregated and shared according to the categories listed above.

Copyright 2004 Nielsen Media Research

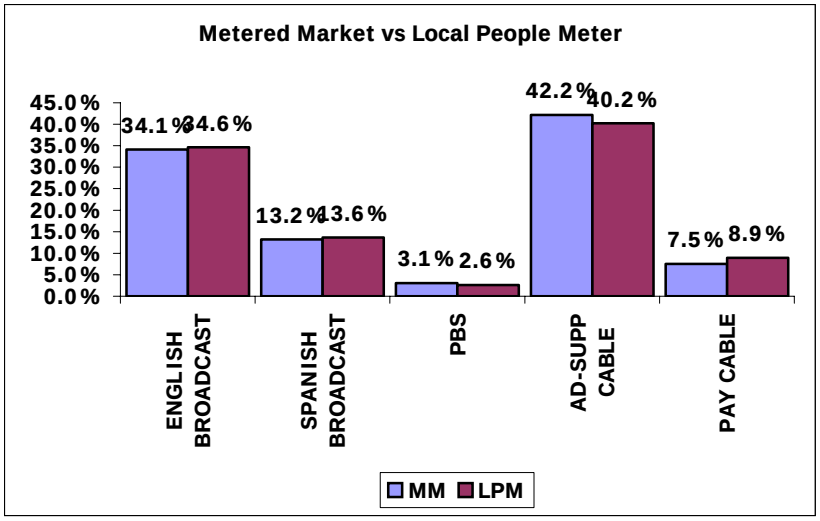
One would expect, at a household level, the distribution of rating points to be similar between the two panels, since the source for both sets of estimates is an electronic meter. However, when persons data are examined, one would expect some differences in the distributions of reported viewing due to the differences in collection mechanisms – an electronic People Meter vs. a paper diary.

Households

Charts 5 through 8 compare total day (7AM-1AM) household ratings across the various media groups, for the overall sample as well as African American, Hispanic, and Asian sub-samples. As expected, the distributions between the two panels are almost identical. Where apparent differences exist, they are within sampling error (especially for Asian, for which the sample sizes are very small – 36 households in the set meter sample, and 77 in LPM).

Chart 5
Los Angeles Media Group Comparisons

May 2004
Total Sample, Total Day (M-Sun 7a-1a)



Copyright 2004 Nielsen Media Research

Chart 6
African-American Households (M-Sun 7a-1a)

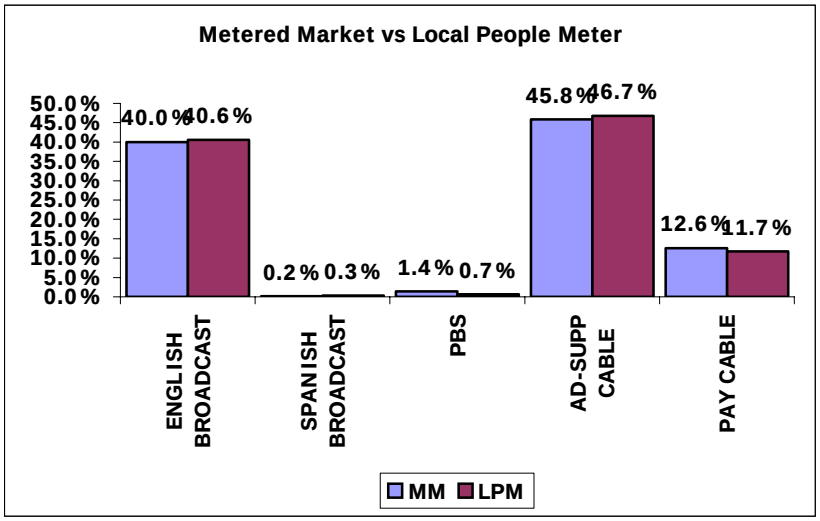
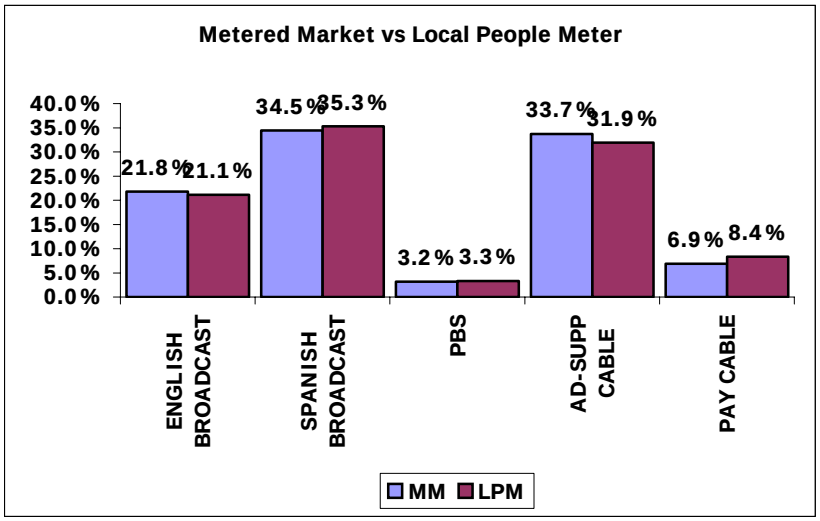
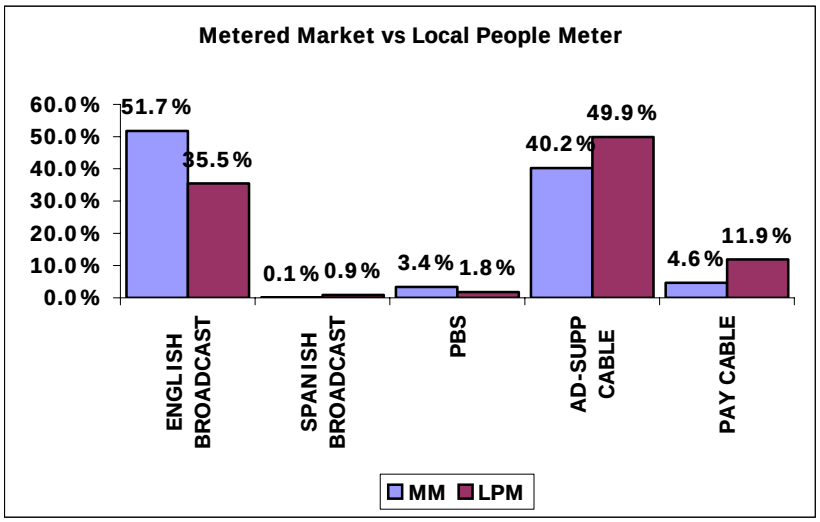


Chart 7
Hispanic Households (M-Sun 7a-1a)



Copyright 2004 Nielsen Media Research

Chart 8
Asian Households (M-Sun 7a-1a)



Persons

We would expect a redistribution of viewing share due to the significant difference in the way persons viewing is collected by the two methods. The People Meter records viewing electronically and in real time, whereas the paper diary is reliant on memory and the recording of 15-minute segments of viewing.

As expected, the People Meter reports a shift in viewing for all audiences, registering more viewing to a wider and more diverse array of program sources. In turn, the People Meter reports somewhat lesser viewing to the most popular, more traditional programs and program sources. As is true for the overall market, similar shifts are seen for African American, Hispanic, and Asian sub-groups (although this trend is somewhat more pronounced among Hispanics).

Copyright 2004 Nielsen Media Research

Chart 9

Total Sample (M-Sun, 7a-1a) Persons 2+

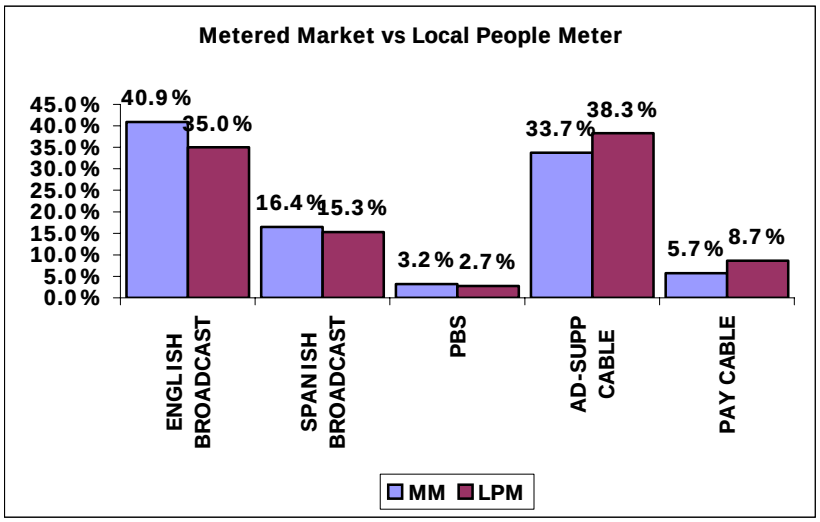
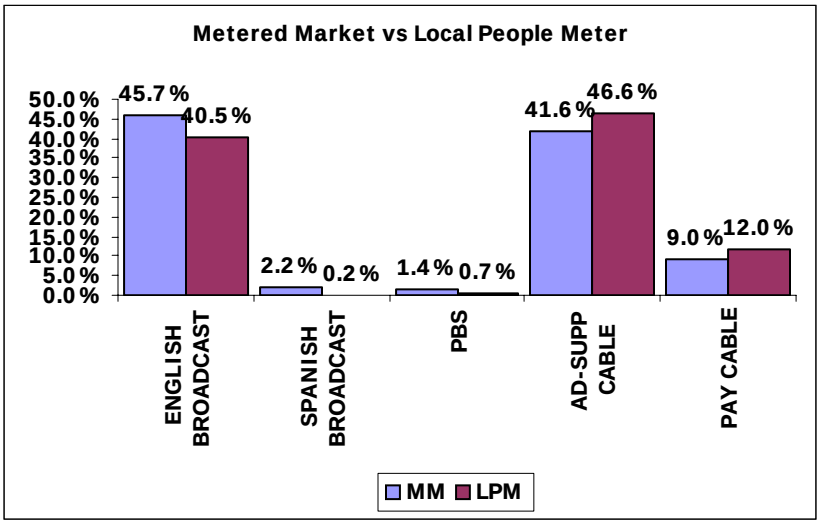


Chart 10

African-American (M-Sun 7a-1a) Persons 2+



.

Copyright 2004 Nielsen Media Research

Chart 11

Hispanic (M-Sun 7a-1a) Persons 2+

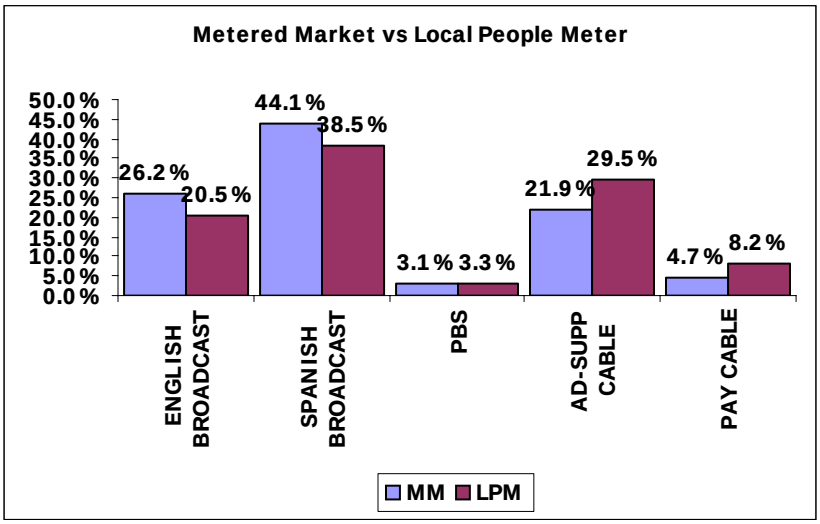
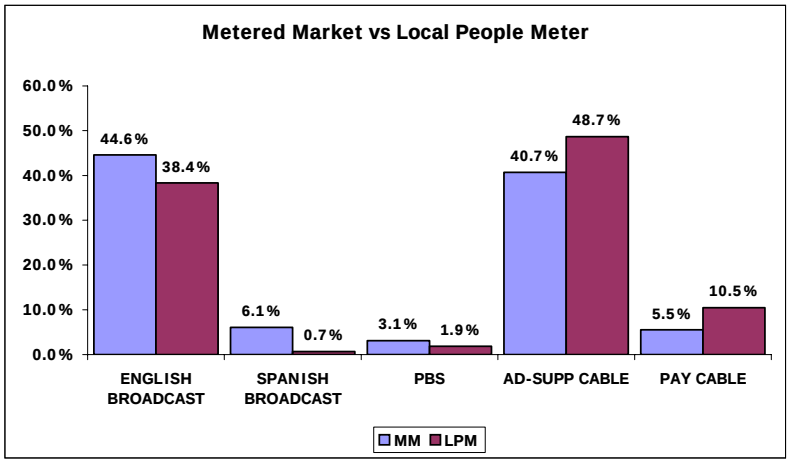


Chart 12

Asian (M-Sun 7a-1a) Persons 2+



Charts 9 through 12 show the shift in share for the broadest demographic group (Persons 2+) across the broadest daypart (total day). Similar shifts occur from broadcast to cable, regardless of race or ethnicity. This shift is consistent with expectations about the limitations of the diary and its tendency to understate smaller stations and networks.

Copyright 2004 Nielsen Media Research

General Observations – Quality Metrics and Viewing Patterns

We believe that these analyses show that the quality metrics are superior for the LPM.

- Sample size is 48% larger (with equally large gains for African Americans and Hispanics) – LPM is more stable,
- Response rates are substantially and consistently higher in the LPM – LPM is more accurate and projectable, and
- Overall demographic composition of the People Meter sample is more representative of the Los Angeles marketplace than is that of the current system - LPM provides more representative data.

The stronger quality metrics for the Local People Meter sample provide for greater confidence in the accuracy of the LPM estimates. However, differences do exist when comparing audience estimates for the two panels.

LPM reports that HUTs are somewhat lower for the total sample as well as for the African American and Hispanic sub-samples. PUT levels are higher in the LPM sample for males, kids, and teens and slightly lower for women.

Shares of available rating points across major media groups for households show remarkably similar patterns for both the set meter and the LPM. There are very few instances where the two panels disagree in household share distribution. The exception would be the higher levels in LPM for Asian households.

The LPM reports substantial shifts away from the strongest program sources to a wide array of diverse programming sources -- in general, local broadcast sources lose share to Ad Supported cable and Pay Cable. This shift is consistent with what might be expected when changing from a paper diary collection of demographics to a real-time electronic measurement tool such as the People Meter. The following section discusses the reasons for this shift in more detail.

Researching the Differences

The comparisons presented so far demonstrate that the LPM is providing a measurement service that is superior in quality to that of the set meter/diary methodology. Nevertheless, as the comparisons have shown, there are differences between the two services in some of the estimates being generated for Los Angeles. In this section we will explore a number of factors that could contribute to these differences.

Copyright 2004 Nielsen Media Research

Sampling Error

From July 8, 2004 through August 5, 2004, two different samples and methods were used to measure the Los Angeles market. We would expect to see differences in the estimates produced by these samples solely because of sampling variation.

However, there are also significant and systematic differences in the ways that each sample collects and reports its data. And so, while sampling variation is material, and in some cases sufficient, to explain the differences in the ratings, much of the difference that we have shown is due to the systematic differences in way People Meters and meter diaries collect data.

We will present these systematic differences in their relative order of importance.

Tuning Without Viewing

Tuning without viewing (TWOV) occurs when the television set is on but there is no one watching. This phenomenon has been studied to a moderate extent over the years and while researchers may disagree as to the proportion of tuning this represents, they all agree that Tuning Without Viewing exists.

Table 7

	Percent (%) of Household Set Tuning Minutes With No Person Logged In		
April 29-May 26, 2004	(NSI) Total	Hispanic HOH	Black HOH
Total Day	2.5	3.6	2.5
Daytime	3.5	4.8	3.3
Early Fringe	2.0	2.3	2.5
Prime	1.4	2.0	1.6
NSI Day 7AM-1AM	2.4	3.3	2.5

When the set is turned on, the People Meter will begin flashing as a reminder for the respondent to enter the audience. It will keep flashing until such time as someone is entered and they press the “OK” button. Sometimes, the set is left on and yet there is no one in the room watching. When this happens in a People Meter household, we believe that the flashing lights sensitize panelists to the fact that the TV is on and no one is watching, and increases the chance that they turn the set off. This

Copyright 2004 Nielsen Media Research

same sensitization would not occur in a set meter panel where there are no flashing lights.

Unfortunately, there are no benchmarks of what the true Tuning Without Viewing (TWOV) levels should be in the population. Referring to previous studies of TWOV, and taking into account the results observed from testing that Nielsen has conducted, we believe that TWOV levels are between 5% and 7%. That is, on an average day, there are no viewers for approximately 5 to 7% of the total tuning minutes in the average panel home.

Table 7 shows TWOV percentages that were calculated from the Los Angeles Local People Meter service for the May 2004 survey. The LPM shows levels of 2.4% for the SS 7AM-1AM daypart. However, if TWOV does occur between 5 to 7% of the time, then these data would suggest that panelists are sensitized to the point where between 2.5 and 4.5% of the tuning time, they turn the set off rather than let the lights flash or enter audience when there is no one watching.

The degree to which this phenomenon is impacting the observed HUT level differences seen in Los Angeles is illustrated below. First, we translate HUT into an average amount of television being watched per day.

- For the May 2004 NSI survey the NSI day, the set meter reported a SS 7AM-1AM HUT level of 42.4, while the LPM reported a HUT 40.4. This is a 2.0 point (-4.7%) difference in HUT.
- These HUTs translate into tuning levels of 7 hours and 38 minutes of television per day in the set meter panel and 7 hours and 16 minutes of television per day in the LPM. This is a difference of 22 minutes between the two panels on an average day.
- Table 7 shows the LPM reporting that 2.4% of tuning minutes were TWOV. This is 10.5 minutes on an average day (7 hours, 16 minutes times 2.4%).
- We can ask ourselves how many more TWOV minutes would be needed to raise the average for the day from the present 2.4% to the assumed average of 5-7%.
- Adding an additional 11.9 minutes would raise the TWOV to 5.0%, and adding an additional 21.5 minutes would raise the TWOV level to 7%.
- Recall that the HUT difference between the two panels is only about 22 minutes.
- Therefore if we accept 5 to 7% as a level of true TWOV, then this phenomenon accounts for 50 to 100% of the observed HUT difference seen in LA. Table 8 shows the proportion of HUT difference explained by TWOV, under different assumptions of what the true TWOV level is.

Copyright 2004 Nielsen Media Research

Table 8
Los Angeles Market
May 2004

Zero Audience Modeling Results
Set Meter HUT: 42.4

Zero Audience %	LPM HUT	Difference from Set Meter	Percent of HUT Difference Explained
2.5%	40.4	-2.0	0.0%
3.0%	40.6	-1.8	10.0%
3.5%	40.8	-1.6	20.0%
4.0%	41.0	-1.4	30.0%
4.5%	41.2	-1.2	40.0%
5.0%	41.4	-1.0	50.0%
5.5%	41.6	-0.8	60.0%
6.0%	41.9	-0.5	75.0%
6.5%	42.1	-0.3	85.0%
7.0%	42.3	-0.1	95.0%

We have concluded that under-reporting of TWOV in the LPM is a real phenomenon. While we cannot specifically determine the exact level of under-reporting that is occurring, we do conclude that, at a minimum, 50% of the observed HUT differences between the LPM and set meter is due to under-reporting of TWOV in the LPM. It is very possible, given the relatively small differences when measured in terms of minutes, that this phenomenon is accounting for almost two-thirds of the 22-minute difference.
It is also important to note that these would be HUT points with no associated audience. Therefore, while the household levels may show this impact, demographic estimates will remain unaffected.

Differences in Non-Weighting Variables

Prior to the final calculation of audience estimates, post-stratification weighting will remove much of the potential impact from an imbalance in those variables used in the weighting scheme. The variables used in the meter weighting process are:

- Cable
- ADS
- Age of Householder
- Presence of non-Adults

Copyright 2004 Nielsen Media Research

- Household Size
- Race
- Hispanic Identity (including Language of Home)
- Geography

However, there are a number of additional sample characteristics that are not used in the weighting process (often due to the lack of a reliable universe estimate), and it is possible that differences in representation between the two panels, on any of these, might contribute to observed differences in the reported audience estimates.

Three such variables worth noting are Income, Education, and Occupation.

Table 9

Qualitative Demographics
May 2004 Sweep
Average Day Installed

Demographic	LPM%	MM%	Diff
Income:			
<$10	3.4	2.3	1.1
$10-19.9	8.4	10.7	-2.3
$20-29.9	14.0	10.7	3.3
$30-39.9	13.1	11.0	2.1
$40-49.9	9.2	11.8	-2.6
$50-59.9	8.7	10.8	-2.1
$60-$74.9	12.3	10.4	1.9
$75+	30.8	32.3	-1.5

Table 10

Qualitative Demographics
May 2004 Sweep
Average Day Installed

Demographic	LPM%	MM%	Diff
Occupation			
POM	47.5	48.5	-1.0
BC – Skill	8.0	9.2	-1.2
BC – Unskill	20.8	15.9	4.9
NILF	23.7	26.4	-2.7
Farmer	0.1	0.6	-0.5

The two panels are reasonably close with respect to their income distributions (see Table 9). We do not have universe estimates for this variable but all differences between the panels are within sampling error margins.

However, there are differences in Occupation between the two panels (see Table 10). The LPM sample has more households classified as Blue Collar - Unskilled.

Copyright 2004 Nielsen Media Research

Table 11

Qualitative Demographics
May 2004 Sweep
Average Day Installed

Demographic	LPM%	MM%	Diff
Education			
0-8 Grade	8.4	5.9	2.5
1-3 HS	7.1	7.0	0.1
4 HS	15.5	17.9	-2.4
1+ College	69.0	69.1	-0.1
4+ College	32.8	34.0	-1.2

Regarding Education, the LPM is somewhat lower in high school graduates, and higher in "0-8 Grade School" (see Table 11).

We also compared the qualitative characteristics of multi-set, PC ownership and Internet access status. The LPM and set meter show only a 3.5 point difference on multi-set, a 1.8 point difference on PC ownership and a 2.1 point difference on PC ownership/Internet Access.

To gauge the extent to which these qualitative demographics might affect audience estimates, we weighted the panels to compensate for the differences.

Table 12

Los Angeles LPM Weighting Analysis
Impact to HUT of Weighting on Extended Sample Controls
4/29/2004 - 5/26/2004

Audience	M-F 9:00A-4:00P	M-F 4:00P-8:00P	M-F 11:00-11:30P	M-F 11:30P-1:00A	PRIME (ET/PT)	Sa-Su 9A-4:00P	S/S 7:00A-1:00A
Total LPM	30.2	48.9	46.4	29.1	62.8	36.6	40.4
Total LPM Re-Weighted	29.9	48.5	46.0	29.1	62.3	36.4	40.1
Difference	-0.3	-0.4	-0.4	0.0	-0.5	-0.2	-0.3
Black	31.1	50.8	60.2	44.0	66.4	43.6	44.8
Black Re-Weighted	34.0	52.8	62.0	45.8	67.3	45.6	46.9
Difference	2.9	2.0	1.8	1.8	0.9	2.0	2.1
Hispanic	39.1	57.2	46.8	28.7	66.4	42.8	46.2
Hispanic Re-Weighted	38.5	56.3	46.6	28.4	66.0	42.6	45.8
Difference	-0.6	-0.9	-0.2	-0.3	-0.4	-0.2	-0.4

* LPM Sample was re-weighted on all production controls plus the MM weighted distribution of: Sets, Education, Occupation of Head of Household, and PC/Internet status.
** Sub-sample re-weighted estimates are reflective of Total sample re-weighting. No additional weighting was performed on these sub-samples.

The results, shown in Table 12, demonstrate that the imbalances seen in these characteristics are having little impact on the reported estimates for the total market.

However, there is an impact on the African American levels. Weighting on these characteristics has raised the HUT levels by about two points. Recall that the LPM African American HUTs are lower, and that the LPM panel better represents the African American population of Los Angeles (the set meter panel over-represents large African American households). We re-weighted the African American portion of the LPM and the Set Meter panels, to better understand the potential effects of these qualitative demographics on this subgroup.

The weighting used the following balancing controls:

- Household Size (1, 2, 3, 4, 5+)
- Age of Householder (<35, 35-54, 55+)

Copyright 2004 Nielsen Media Research

- Child
- Wired Cable
- Geography (LA County, Remainder DMA)

Table 13

Los Angeles LPM Weighting Analysis
Impact to HUT of Weighting on Household Characteristics Within Black Race*
4/29/2004 - 5/26/2004

Audience	M-F 9:00A-4:00P	M-F 4:00P-8:00P	M-F 11:00-11:30P	M-F 11:30P-1:00A	PRIME (ET/PT)	Sa-Su 9A-4:00P	S/S 7:00A-1:00A
Black MM	43.9	64.6	65.3	50.7	74.0	52.6	55.5
Black MM Re-Weighted	40.3	62.3	64.6	50.7	71.8	50.4	52.8
Difference	-3.6	-2.3	-0.7	0.0	-2.2	-2.2	-2.7

* Total samples were re-weighted on all production controls, plus combination of Black race with each of the following: Household Size (1,2,3-4,5+), Age of Head (<35, 35-54, 55+), Presence of Non-Adults (None, Any), Wired Cable Status (Yes, No), and Geography (LA County, Rem DMA). Sub-sample estimates were then generated from the re-weighted total samples.

Table 13 shows that re-weighting the African American sub-segment to align with universe estimates for market sections results in a lowering of the HUT by 2.7 points for the total day. The impact this has on the overall HUT is evaluated as follows:

- The total day total sample set meter HUT for May 2004 is 42.4
- The reported set meter African American HUT for May 2004 is 55.5
- The African American penetration in Los Angeles is 8.8%
- The non-African American set meter total day HUT is 41.1
- Replacing the 55.5 HUT for African Americans with the adjusted HUT of 52.8 reduces the total set meter HUT to 42.1
- The LPM reported HUT for the same time period is 40.4 or 2.0 points (4.7%) lower than the corresponding set meter.
- The adjustments done on the African American sample representation reduce the overall difference by 0.3 points, thus explaining 15.0% of the overall HUT difference.
- The overall HUT difference for total day translates to a difference of 22 minutes of tuning in the average home.
- The African American sample imbalance therefore accounts for three to four minutes of this difference.

For this reason, we conclude that while the overall differences in representation of these characteristics are not having a material impact on the data reported from the LPM, the imbalances in the representation of African Americans in the set meter panel, which are not compensated for through post stratification, are accounting for approximately 15% of the reported HUT difference.

Copyright 2004 Nielsen Media Research

Local People Meter Only Versus National People Meter (NPM) Cutback

The LPM panel has been constructed from two components. The first is the set of approximately 260 National People Meter (NPM) sample homes that were already in Los Angeles to provide National ratings. The second is a representative sample of 540 “LPM only” homes augmenting the NPM panel in order to bring the total panel size to its target of 800 installed households. The NPM homes in Los Angeles (called the “NPM cutback”) were designed, selected and maintained as part of a larger national panel rather than managed locally to the Los Angeles market.

The NPM cutback households were managed as a part of the national panel prior to the construction of the LPM. Therefore, this component of the LPM might show different characteristics and quality metrics. An examination of this component showed a panel with a high response rate but less than ideal characteristic representation of the local market.

We questioned the degree to which the NPM cutback and the LPM-only portions of the panel are delivering different audience estimates and possibly contributing to differences in the estimates between the LPM and set meter panels. To address this question, we generated audience data separately for the NPM cutback and the LPM-only panel portion.

Table 14
Los Angeles
May 2004
Total Sample HUTs

Daypart	Total	NPM Cutback	LPM Only	Diff
MF 9A-4P	30.2	29.8	30.4	-0.6
MF 4-8P	48.9	48.3	49.3	-1.0
MF 11-11:30P	46.4	47.0	46.0	1.0
MF 11:30P-1A	29.1	30.0	28.6	1.4
PRIME	62.8	62.4	63.0	-0.6
Sat&Sun 9A-4P	36.6	36.3	36.7	-0.4
SS 7A-1A	40.4	40.2	40.5	-0.3

Table 14 shows that the NPM cutback and the LPM-only portion of the panel are delivering similar HUT levels. The differences that we see are well within sampling error given the small sample of cutback homes.

Copyright 2004 Nielsen Media Research

Faulting

In general, in-tab rates have been higher for the LPM sample when set-only edits are compared for the two panels (this is the only valid direct comparison between the two panels inasmuch as the set meter sample is not affected by persons edits). However, it is possible that the kinds of households failing to pass edits on an average day are different between the two panels. If, for example, higher tuning homes were more likely to fault in the LPM panel than in the set meter panel, then that could lead to HUT, and possibly individual station ratings, differences.

There are a variety of reasons that households fault. These include behavioral reasons (unplugged meters, line up changes, etc.), technical reasons (data gaps, etc.) and environmental reasons (power outages, etc.). Nielsen has presented a comprehensive plan to the MRC to reduce faulting without introducing the risk of introducing bias in its reported data.

An analysis of Los Angeles in-tab rates among key demographics shows that there are no systematic differences in the kinds of homes that are faulting in one panel versus the other, and more important, faulting has less of an impact on the People Meter panel than it does on the set meter panel.

Table 15 compares in-tab rates between the set meter and the LPM for various characteristics using the set-level edits for the LPM.

Table 15

Los Angeles
May 2004 Sweep

Set Edit (LPM) In-tab Rates

	Total		African American		Hispanic	
Demographic	LPM	MM	LPM	MM	LPM	MM
Total	90.5	89.1	90.2	89.6	88.4	86.9
Cable	91.2	89.7	89.7	87.7	89.5	86.4
ADS	87.9	83.8	88.3	90.3	86.4	81.8
HH Size						
1-2	92.5	91.7	90.9	92.3	90.1	88.8
3-4	90.6	87.6	88.6	89.8	90.9	87.2
5+	85.0	84.8	92.7	83.6	84.4	84.9
Age of Head						
<35	89.1	84.3	91.7	79.0	86.0	79.3

Copyright 2004 Nielsen Media Research

Table 15						
Los Angeles May 2004 Sweep Set Edit (LPM) In-tab Rates						
	Total		African American		Hispanic	
Demographic	LPM	MM	LPM	MM	LPM	MM
35-54	89.9	89.2	88.5	92.0	87.9	89.6
55+	92.3	92.0	92.5	94.2	93.5	91.5
Pres. Child	88.0	86.0	91.0	87.9	86.9	85.0
Af. Amer	90.2	89.6	90.2	89.6	78.6	92.0
Hispanic	88.4	86.9	78.6	92.0	88.4	86.9
Sp. Dom	88.9	90.1			88.9	90.1

The most stable comparisons are for the total sample characteristics where sample sizes are sufficient to provide relatively stable statistics. Here we see that overall and differential faulting is quite similar for both the LPM and Set Meter samples. In all but one comparison (Spanish Dominant Hispanics) the LPM exhibits higher set in-tab rates, and thus lower fault rates, than the corresponding set meter. These are relevant because these rates determine which households are used in the overall HUT and household station ratings.

We apply a second level of edits to People Meter data to determine if the persons information collected from the home is acceptable for use in the calculation of persons-level audience data. These persons edits generally have the impact of lowering in-tab rates approximately another three to four points. The impact does vary by certain characteristics. There is no comparable level of edits for the set meter which does not collect persons information, so the following table shows in-tab rates only for the LPM on both sets of edits. However, the patterns are similar to the set-only in-tab rates, with larger households faulting to a greater degree than smaller ones.

Copyright 2004 Nielsen Media Research

Table 16 Los Angeles May 2004 Sweep Set & Persons Edit (LPM) In-tab Rates vs. Set Only In-tab Rates (MM)			
	Total	African American	Hispanic
Demographic	LPM	LPM	LPM
Total	86.7	86.8	83.0
Cable	87.1	86.3	83.4
ADS	84.2	82.9	82.1
HH Size			
1-2	90.1	87.9	84.7
3-4	86.9	86.7	85.3
5+	77.3	82.1	79.1
Age of Head			
<35	84.1	89.9	79.7
35-54	86.2	85.2	83.1
55+	89.2	87.6	87.1
Pres. Child	82.8	86.5	81.4
Af. Amer	86.8	86.8	76.8
Hispanic	83.0	76.8	83.0
Sp. Dom	83.6		83.6

Heavy-tuning households:

We also evaluated the degree to which heavier-tuning households might be more likely to fault in one panel vs. the other. To examine this possibility, tuning deciles were created for each panel (see Table 17). The deciles were calculated by averaging the minutes tuned per day, and then ranking all homes from the highest average to the lowest. Then homes were divided into deciles, with each containing approximately the same number of homes. Once created, in-tab rates were created by deciles and then compared between the two panels.

Tuning decile #1 represents the highest tuning households, while #10 represents the lowest. For the total sample, there is very little difference in in-tab rates between the deciles, although we do note that the heaviest tuning decile does have a lower in-tab rate in the LPM. However, it is difficult to draw conclusions for sub-samples of African Americans and Hispanics, due to the small sample sizes. For Hispanic households, there is a large in-tab rate differential in the highest tuning decile with LPM being lower. This means that more higher tuning Hispanic homes are in tab on an average day in the set meter

Table 17

Fault Analysis Among Los Angeles Set Top Meter/LPM Homes
Installed Sample 4/29/2004 - 5/26/2004

Tuning Decile	Set Intab Rate					
	Total		Black Hhlds		Hispanic Hhlds	
	MM	LPM	MM	LPM	MM	LPM
1	90.7%	86.2%	86.3%	88.0%	93.7%	82.8%
2	89.3%	89.1%	89.9%	93.1%	86.3%	87.3%
3	90.6%	91.6%	81.0%	92.1%	85.3%	88.0%
4	87.2%	91.6%	90.5%	87.8%	84.6%	87.9%
5	91.5%	91.3%	87.5%	92.4%	84.9%	90.5%
6	94.7%	90.5%	98.2%	98.7%	98.5%	86.1%
7	90.3%	93.4%	88.4%	91.1%	91.6%	89.6%
8	92.9%	94.1%	97.9%	92.4%	86.0%	94.1%
9	94.8%	94.8%	95.7%	83.8%	92.8%	89.9%
10	89.1%	90.1%	89.3%	82.8%	83.3%	89.7%
Total	89.1%	90.5%	89.6%	90.3%	86.9%	88.4%

Copyright 2004 Nielsen Media Research

panel than in the LPM. However, we should be aware that with approximately 235 Hispanic homes in-tab on an average day in the LPM and 153 in the set meter, these in-tab rates are being calculated on 23.5 and 15.3 in-tab homes respectively in each decile. That means, for example, in the Hispanic examination, for decile #1, the observed difference of 11 in-tab rate points is the result of approximately 2.5 homes not being in-tab in the LPM. For this reason, while shown for information purposes, no conclusions can be drawn for either the African American or Hispanic sub-samples.

In conclusion, overall and differential fault rates are quite similar for both the LPM and Set Meter samples. At the household edit level, differential faulting between the set meter and the LPM is having no material impact on observed household audience differences.

Basics versus Alternates

Nielsen meter panel methodology provides extensive procedures to ensure that every possible attempt is made to successfully recruit the pre-designated (basic) household. If the basic household cannot be recruited, there are a set of procedures that are followed in order to recruit an alternate household that will hopefully represent the viewing behavior of the basic it replaces. We asked the question: Do differences between basics and alternates in the two samples contribute to the observed audience estimate differences?

Table 18

Los Angeles
May 2004

HUTs

	Basics			Alternates		
Daypart	LPM	MM	Diff	LPM	MM	Diff
MF 9A-4P	29.9	30.7	-0.8	30.5	32.1	-1.6
MF 4-8P	48.0	51.5	-3.5	49.8	52.1	-2.3
MF 11-11:30P	46.1	50.1	-4.0	46.6	49.2	-2.6
MF 11:30P-1A	29.4	33.0	-3.6	28.8	33.3	-4.5
PRIME	61.5	65.0	-3.5	64.1	64.3	-0.2
Sat&Sun 9A-4P	36.6	37.6	-1.0	36.5	38.0	-1.5
SS 7A-1A	39.9	42.1	-2.2	40.8	42.6	-1.8

Copyright 2004 Nielsen Media Research

Sample Sizes	Basics	Alt.
LPM	369	353
Set Meter	184	286

Table 18 shows that basic homes generally exhibit similar or slightly larger HUT differences than those seen in the corresponding alternate sample. However, the magnitude of the difference is within a range that would be expected due to sampling error alone.

Therefore, we find that there is little evidence to suggest that differences between basics versus alternates in the two panels would be contributing to the observed viewing differences.

Button-Pushing Compliance

Nielsen has regularly conducted research to determine if there is evidence that panelists grow tired of pressing their buttons over time and fail to log themselves in as a consequence. Since such studies compare panelists' behavior over time, samples need to be installed for at least a year before a reasonable analysis can be conducted on a local market. However, we have recently released a study of compliance within the National People Meter Panel, which evaluated whether Hispanics, African Americans or members of other demographic categories might show signs of increased fatigue.

This analysis was reported in the "***Nielsen Research Paper: 2002-2003 Age Effects Analysis***" released in March 2004. The paper concludes that the current incentive plan and payment structure does a reliable job of supporting button-pressing compliance and that differential compliance was not materially affecting the differences that we had seen in African American and Hispanic PUT levels.

This report is currently available on our client website.

Diary Methodology

In our earlier analysis of PUT differences and in our summary to this report, we offer the conclusion that much of the difference in the patterns of persons-level estimates were a consequence of the more accurate measurement provided by the People Meter. It is fairly well understood that more-frequently viewed programs (especially those that are on more than once a week) are overstated in the diary, and that less-frequently watched programs and program sources are

Copyright 2004 Nielsen Media Research

understated. This is not surprising, since in recontact studies we have found that many diary keepers fill out their diaries well after the actual viewing sessions.

In this final section, we share additional R&D, which considers how panelists claim to fill out a diary and corroborate the conclusion that the People Meter is less sensitive to the limitations of the diary.

The data from a recently completed diary-holder recontact study suggests that Hispanics, and to a lesser extent African Americans, are somewhat more likely to report that they record what they expect to be watching throughout the diary week, i.e., their normal viewing behavior, rather than what they actually watched.

In a 2002 study, we found similar results for both Hispanic and African American households, although the relationship among African Americans did not show up as clearly in the recent 2004 study.

Summary of Results from 2004 Intab Household Follow-up Survey[2]

- Whites and African Americans are about equally likely to indicate that they filled out their diary at the actual time of viewing. In fact, most respondents (71%) indicated that they filled the diary while watching television. Conversely, 29% indicated that they did not fill out their diaries at the time of viewing.

- African Americans (11 %) are more likely than Whites (5 %) to fill out their diaries at the beginning of each day.

- Spanish Dominant households are more likely to say that that they sometimes listed programs that they normally watched but didn't because they weren't able to during the diary week. (24 vs. 11%)

This report provides additional support for the conclusion that diary keepers may view their responsibility in a way that leads them to over-report the programs that they most frequently watch and under-report the programs that they watch less frequently.

[2] Recontacts were made in four DMAs. The return sample included 577 African Americans, 405 English-language Hispanics, 492 Spanish-language Hispanics, and 435 Whites or Asians.

Copyright 2004 Nielsen Media Research

Summary and Conclusions

We reviewed several factors to explain the lower HUT levels and redistributed viewing shares when we compared Local People Meters to the set meter / diary methodology in Los Angeles.

First, we expect to see some differences in HUTs and share between the two samples simply due to sampling error (two samples drawn from the same population are likely to differ due to chance alone). We also expect to see some differences due to the fact that the LPM sample is more representative of the universe. That is, the LPM sample has a higher response rate, larger sample size, and is closer to overall demographic representation.

More important, we concluded that there are three primary contributors to the differences seen in audience levels, two for HUT level differences and one for the redistribution of audience shares.

The lights on a People Meter may condition panelists to turn off their set when there is no one watching. This loss of Tuning Without Viewing may account for up to 14 minutes a day and thus explain at least 50% of the lower HUT levels reported by the Local People Meter panel.

The Los Angeles set meter panel over-represents larger African American households. This accounts for approximately four minutes (or15%) of the LPM / set meter HUT difference.

Overall, persons ratings levels are higher as reported by the LPM. The redistribution of persons shares is consistent with the known limitations of the diary. Because its accuracy is often based on memory, the diary panelists are more likely to under-report less frequently watched programs and program sources, and are more likely to over-report viewing to more popular and stripped programs. Diary keepers are also more likely to overstate the duration of tuning to some programs.

We examined several other factors but did not find that they had any demonstrable or directional effects on viewing levels. These factors include comparisons of fault rates, basic versus alternate homes, national cutback versus LPM-only homes, and button pushing compliance.

In conclusion, Nielsen Media Research believes that the Local People Meter system provides a more accurate reflection of television viewing behavior in the Los Angeles marketplace than does the set meter / diary methodology. However, Nielsen is also committed to a process of continuous improvement,

Copyright 2004 Nielsen Media Research

and continues to work with the marketplace to improve its procedures in all its research panels whether People Meter, set meter, or diary.

Copyright 2004 Nielsen Media Research