

# **How U.S. Adults Use Radio and Other Forms of Audio**

*Results from the Council for Research Excellence  
Video Consumer Mapping Study*

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## **Council for Research Excellence**

The Council for Research Excellence (CRE) sponsored this study with financial support from The Nielsen Company. The CRE is an independent research organization consisting of approximately 40 senior research professionals representing advertisers, agencies, networks, and cable companies. Formed in 2005, CRE members have worked together in the spirit of collegiality on projects of value to the broader media and advertising industry. The Council's key mission is to fill critical knowledge gaps in the industry, primarily through the conduct of research efforts that are simply too big and/or too costly for any single company to handle. More details concerning the CRE, including the current membership roster, completed and in-flight projects, reports, data and other information are freely available at:

[www.researchexcellence.com](http://www.researchexcellence.com).

## Executive Summary

The Video Consumer Mapping (VCM) Study, sponsored by the Council for Research Excellence, is used to examine audio media usage among participants in five DMAs: Atlanta, Chicago, Dallas, Philadelphia, and Seattle. Using a direct observation method, the final sample included 752 observed days (half in Spring 2008, half in Fall 2008), with ¾ million minutes of observation, at 10 second resolution throughout those days.

### Important Disclaimer

1. Although the study sample was selected to provide a good cross-section of the population in terms of demographics, geography, and days of the week observed, the sample is not a probability-based sample and the data in the analyses presented here were not standardized or “weighted” to any external population parameters.
2. As a result, some of the findings may be skewed to the degree that individuals with certain characteristics or behaviors are over- or under-represented as compared to the general population.
3. In terms of average daily minutes, the study provides broadcast radio listening estimates which are somewhat lower than those typically reported by on-going “currency” measures. This may be due to several factors: (1) the data were not adjusted (or weighted) to external population parameters per above, (2) broadcast radio estimates do not include radio streamed via internet, (3) some of the employed respondents may have taken-off work on the observation day to avoid needing to take the observer to work with them, (4) some respondents may have changed their listening habits while driving due to the presence of the observer in the vehicle with them, and (5) it should be recognized that no data collection approach is perfect and estimates from both electronic and diary-based measurements of radio use also demonstrate errors of various kinds.

***However, as the only-single source dataset of observed consumption of audio and other media exposures, this study does offer a wealth of insights to audio use despite these study limitations***

The key findings from the study included:

- 90% of adults are exposed to some form of audio media on a daily basis, with broadcast radio having by far the largest share of listening time.
- Exposure to audio listening falls into four tiers in terms of level of usage among listeners: (1) broadcast & satellite radio (79.1% daily reach; 122 minutes daily use among users), (2) CDs and tapes (37.1% daily reach; 72 minutes); (3) portable audio [ipods/MP3 players] ( 11.6% daily reach; 69minutes), digital audio stored on a computer such as music files downloaded or transferred to and played on a computer (10.4% daily reach; 65 minutes average use), and digital audio streamed on a computer (9.3% daily reach; 67 minutes) and (4) audio on mobile phones (<2% daily reach; 9 minutes).

- The Role of Portable Audio Devices:
  - i). Importantly MP3 and iPod players averaged only 8 minutes of listening per day among the entire observed sample, with just under 90% of the sample not listening at all .
  - ii) Among listeners (11.6%), the highest reach was among those aged 18 to 34 years (20.8%), singles (18.5%), and those who tend to be more technology-savvy (18.2%)
  - iii) Even among those who use other forms of audio media, broadcast radio still has a broad reach. For instance, among those who also listened to portable audio devices such as MP3 players or iPods, broadcast radio had a daily reach of 81.6% reach and 97 minutes of average listening time among those who listen to radio
- Audio media exposure has the highest reach among those with higher levels of education and income.
- Broadcast radio is the dominant form of audio media at home, work, and in the car.
- Broadcast radio reaches those aged 18-34 at rates equivalent to the general adult population, with 79.2% of younger adults listening to broadcast radio for an average of 104 minutes a day among listeners.
- Among key “advertising-based” media platforms, live television had the highest reach and daily usage among users (95.3%, 331 minutes), followed by broadcast radio (77.3% reach, 109 minutes), Web/Internet [excluding use of email] (63.7%, 77 minutes), newspapers (34.6%, 41 minutes), and magazines (26.5%, 22 minutes).
- On average, individuals spend almost identical amounts of time during weekdays (454 minutes) as they do on weekends (458 minutes) using one of the five key media sources.

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## 1.0 Study Background

The Video Consumer Mapping Study (VCM) is a unique, groundbreaking effort with the central goal of dimensioning current consumption of media in order to develop and guide future audience measurement efforts. Sponsored by the Council for Research Excellence (CRE), designed and executed by Ball State University and Sequent Partners, with funding from The Nielsen Company, the VCM Study is the largest and most extensive media use observational study ever conducted. While the primary focus of the study was on television and video, a vast and rich amount of data were captured on other media sources as well, including audio, computing and print.<sup>1</sup> Here we explore U.S. consumers' exposure to various forms of audio media, with a special focus on radio, examining usage patterns and correlates of usage, as well as making comparisons between audio use and other key advertising-based media platforms such as live television, Web/Internet, newspapers, and magazines. The unique advantage of using the VCM Study for this purpose is that it is "single source," that is, media consumption behaviors are assessed across an array of media sources for the same set of individuals – a far more powerful approach than studies which typically rely on pulling results from multiple surveys of differing sets of participants.

The study was based on real-time observation of consumers throughout an entire day. The individuals who participated in the study were drawn primarily from former Nielsen TV People Meter panelists. Consumers included in the analyses presented here were sampled from five geographically dispersed DMAs: Atlanta, Chicago, Dallas, Philadelphia, and Seattle. These locations provide a good mix of respondents, however, it is important to note that these data are not weighted to reflect national or DMA level demographic distributions.

A full waking day was observed for each of these consumers, to simultaneously measure their media exposure, their life activities and the locations, where they spent their day. Media exposure that took place early in the morning or later in the evening when the observer was not present were reconstructed through recall interviews with the participants. Each consumer in the final sample was observed twice, generally the same day of the week for each person, and spread across the days of the week for the sample. These consumers were observed first in Spring, 2008 (generally April and May) and then again in the Fall, 2008 (generally September and October). The final sample included 752 observed days, over  $\frac{3}{4}$  million minutes of observation, at 10 second resolution throughout those days.<sup>2</sup>

The data were collected by trained observers using a computer-assisted data entry device with a custom media collector program. They used this to input data regarding media exposure, life activity and location. The observers noted the beginning and end of any media exposure event,

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<sup>1</sup> Please note that detailed analysis of the television and video components of the study are freely available on the CRE's website at: [www.researchexcellence.com](http://www.researchexcellence.com).

<sup>2</sup> In addition, 100 people were recruited for the Media Acceleration portion of this research in the Indianapolis DMA. Because of the unique treatment given these individuals to assess potential changes over time in media consumption behavior, these individuals are not included in the analyses presented here.

any change in life activities, as well as any change in location with the data then logged to file every 10 seconds.

While a more detailed discussion of study limitations is provided in section 4.0, two need to be noted here as they directly affect interpretation of the findings. First, the data are not weighted and as such the findings may be skewed to the degree that individuals with certain characteristics or behaviors are over- or under-represented as compared to the general population. The sample was selected to provide a good cross-section of the population in terms of demographics, geography, and days of the week observed, but the data were not standardized to any external population parameters. However, there are some other factors tied to media use which were not accounted for in the sample design, such as proportion of time spent in a workplace among those who identified themselves as being “employed”. For instance, as shown in section 3.4, it appears that while the observations were spread fairly evenly across days of the week, a portion of those who identified themselves as being “employed” may have scheduled their observation day around their work schedule or taken the day off rather than taking the observer to their place of work. For a medium like broadcast radio, which has a significant portion of listening occurring at the workplace, this could have the effect of under-stating the overall average time spent listening. Second, because the data are observational, the assessment is based primarily upon media “exposure” rather than actual attributed “listening,” “viewing,” or “reading.” While such activity could often be inferred, it could not be confirmed for each observation by the observer.

## **2.0 Who Uses Audio?**

### **2.1 Overall Audio Usage**

More than 90% of the adults in the study were exposed to some form of audio media (excluding television audio) on a daily basis (Table 1). Broadcast radio dominates all other forms as the first tier of audio with just over 77% daily reach (sometimes referred to as “daily come”) and 109 minutes of average listening per day among broadcast radio users. When combined with listening from satellite radio, overall radio listening tops two hours per day for radio listeners.

CDs and taped music and audio content comprise the second tier of listening, with a daily reach of 37.1% and an average of 72 minutes per day among CD and tape users.

The third tier of audio media includes portable audio media such as MP3 players and iPods (11.6% daily reach; 69 minutes average use), digital audio stored on a computer such as music or other audio content files downloaded to transferred to and played on a desktop computer or laptop (10.4% daily reach; 65 minutes average use), and digital audio streamed to a computer (9.3% reach; 67 minutes average use).<sup>3</sup>

The fourth tier includes audio played on mobile phones which was a very small portion of total audio exposure (<2% reach; 9 minutes average use). Given the small amount of mobile phone audio captured in this study, no additional analyses of this media source are offered in this report.

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<sup>3</sup> Because the content of the streamed audio was not recorded, we are unable to determine how much of this exposure may have been to radio broadcast over the Internet, MP3 streaming, or other content.



Additionally, 40% of adults were also exposed or listened to other forms of audio, such as background music at an office, or audio in a restaurant or store. On average, listeners were exposed to 53 minutes of these other forms of audio.

Audio usage differs greatly along socio-economic and generational lines. Those who are employed and those who have higher levels of income and greater educational attainment are exposed to a greater amount of audio media than are those who are not employed and persons of more modest means and education level (Table 2). For example, while the average reach of audio media is 90.7%, more than 96% of those with an advanced degree were exposed to some form of audio media when observed. A similar pattern is seen in terms of the average number of minutes of audio per day. Those aged 18 to 34 and persons making \$100,000 or more per year each had 210 minutes of audio exposure per day. In contrast, those with a high school diploma or less education and those with annual incomes under \$30,000 each had 157 minutes of audio media exposure per day.

## 2.2 Audio Usage by Location

Audio media usage can vary significantly by where the listening/exposure occurs. Here we examine how various types of media are used in the home, car, work, and in other locations (Figure 1).

### 2.2.1 Home Audio Usage

Audio listening in the home is most likely to be to broadcast radio, which accounts for 46.4% of all audio exposure in the home. Broadcast radio also has the highest in-home reach with over one-third (35.0%) of those observed having listened to broadcast radio at home on the day of the observation, with an average of just over one hour of total listening time. Satellite radio comprised a much smaller share of all audio listening (7.2%), but among those who did listen to satellite radio at home the average total listening time was 169 minutes. One-fifth of home audio time is spent with CDs and tapes (averaging 72 minutes per day). Portable audio, or audio on or streamed to a desktop computer or laptop comprised less than 10% each of the listening minutes observed at home.

### 2.2.2 Car Audio Usage

Car audio listening time is primarily broadcast radio listening time, with broadcast radio comprising nearly three-fourths (74.2%) of all audio time in the car. Nearly 60% of all study participants listened to broadcast radio in the car, with approximately one hour, on average, of listening time. CDs and tapes were used by one-in-five individuals in the car (average of 41 minutes of listening and 16.2% of all car audio). Just over 5% listened to satellite radio in the car, averaging 48 minutes of listening time among those who listened.

### 2.2.3 Work Audio Usage

Over half (53.8%) of all audio exposure at work was to broadcast radio. Nearly 40% of those observed at work listened to broadcast radio, with users listening on average to more than two hours (123 minutes) per day. [See section 3.4 for additional information on broadcast radio usage at work compared to other forms of media]. Satellite radio and streaming audio accounted for just over 12% each of all audio time at work. Satellite radio was used by less than 2% of all study participants at work, but was used, on average, 174 minutes by those who did use it. Likewise, streaming audio reached less than 3% of all study participants at work but averaged 105 minutes for those who did stream.

### 2.2.4 Audio Usage in Other Locations

A fair amount of audio media exposure took place in a location other than the person's own home, car, or work. These locations could have included other people's homes, restaurants, outside, in stores, and the like. Unfortunately details as to the exact types of locations were not recorded by the study observers. Neither were some of the forms of "other audio" that fall outside of the major sources described here. These could include other audio sources such as background music and audio from an undisclosed source. Exposure to these "other forms" of audio comprised a plurality (43.7%) of the listening/exposure that occurred in these other locations. Over one-third of study participants had such exposure with an average total duration of 50 minutes per day. One-quarter (23.3%) of the audio listened to in these other locations was broadcast radio, with 36.8% of respondents having such exposure for an average of 26 minutes per day. CDs and tapes comprised 18.6% of the total "other location" time, with 16.0% of respondents listening to CDs and tapes in these locations for an average of 48 minutes per day.

## 2.3 Audio Source Usage Profiles

People use different audio sources in different ways and for varying lengths of time, yet there is also considerable cross-platform use. For instance, as shown below, broadcast radio has a wide reach even among those who use other sources of audio, such as satellite radio and portable audio (MP3 players/iPods) listeners. In this section we examine the types of individuals most likely to use these different forms of audio media, for how long each day, and where they are most likely to use the audio source.

### 2.3.1 Broadcast Radio

Broadcast radio accounts for just over half of all audio media exposure each day (Table 3b). Daily reach is highest among those with higher levels of education (advance degree, 83.9% reach) and income (\$100,000+ income, 84.3% reach). Daily usage is highest, however, among listeners aged 55 years or older (average 122 minutes) and black listeners (average 124 minutes). Most time spent listening to broadcast radio is in the car (43.6% of all broadcast radio minutes), followed by home (29.0%), work (15.4%), and other locations (12.0%).

Broadcast radio was also widely used among users of other forms of audio media. For instance, 81.6% of those who used portable audio devices, such as an MP3 player or iPod, also listened to broadcast radio, with those using both media listening to 98 minutes of broadcast radio per day (Table 4). Likewise, nine-in-ten satellite radio users also listened to broadcast radio for an average of 109 minutes per day. A similar pattern is seen with those who use other forms of audio media such as CDs/tapes, or digital audio on or streamed to a desktop or laptop computer.

Note that the average number of minutes for broadcast radio reported here is somewhat lower than normally reported in on-going “currency” measures, including both electronic and diary-based measures. There are several factors at work which could contribute to this. First, the data were not adjusted (or weighted) to external population parameters. Second, broadcast radio estimates do not include radio streamed via internet as streamed audio was not coded by observers as to content. Third, some of the employed respondents may have taken-off work on the observation day to avoid needing to take the observer to work with them (for more on this, see section 3.4 below). Fourth, some respondents may have changed their listening habits while driving due to the presence of the observer in the vehicle with them. Finally, it should be recognized that no data collection approach is perfect and estimates from both electronic and diary-based measurements also demonstrate errors of various kinds.

### 2.3.2 Satellite Radio

Satellite radio, like broadcast radio, has its highest reach among those with higher socio-economic backgrounds (\$100,000+ income = 21.5%; advanced degree = 21.2%) – (Table 3c). Yet, average daily use for satellite radio is highest among those aged 35 to 54 years (116 minutes) and men (115 minutes). Satellite radio also differs from broadcast radio in terms of where individuals tend to listen to or be exposed to this audio source: home (29.5%), work (23.1%), car (21.4%), and some other location (26.0%).

### 2.3.3 CDs/Tapes

Audio CDs and tapes are most likely to be used by those aged 18 to 34 years (46.0% daily reach), Hispanics (44.0%), and individuals who are single (42.6%) – (Table 3d). Daily use ranges from 90 to 100 minutes for those with incomes under \$30,000 per year, Hispanics, and renters. CDs and tapes account for approximately one-quarter of all daily audio exposure for individuals in these three groups. These forms of audio are most likely to be played in the home (38.9%), followed by car (28.7%), work (3.5%), and some other location (28.9%).

### 2.3.4 Portable Audio

Perhaps not surprisingly, portable audio – such as MP3 players & iPods -- has its highest reach among those aged 18 to 34 years (20.8%), singles (18.5%), and those who tend to be more technology-savvy (18.2%) – (Table 3e). Reach also tends to be higher among those with higher levels of income and education. Among those who use this source of audio, however, there was no clear pattern as to which groups use these forms more throughout the day with Hispanics averaging 140 minutes daily, followed by those with one child in the home (101 minutes) and renters (95 minutes). As a share of all audio exposure in a day, portable audio was highest among

those with one child in the home (9.1%) and ranged from 7.1% to 7.6% for an array of groups, including those with incomes above \$100,000, renters, those aged 18 to 34 years, and single individuals. The majority of listening to portable audio took place in the home (54.7%), followed by the car (21.6%), work (4.5%) and elsewhere (19.2%).

### 2.3.5 Digital Audio Stored On or Streamed to a Computer

Persons aged 18 to 34 (19.8%) and Hispanics (20.2%) were most likely to have been observed using digital audio stored on a computer or laptop (Table 3f). Daily usage of this form of audio was highest among the more technology-savvy (87 minutes), renters (85 minutes), and those with incomes above \$100,000 (83 minutes). Digital audio stored on a computer was less than 10% of all daily audio exposure for the groups examined, with nearly two-thirds (64.3%) of listening being done at home.

Audio streamed to a computer or laptop was highest among those with incomes above \$100,000 (16.3%), persons aged 35-54 (13.5%), and those with two or more children in the home (13.2%) – (Table 3g). Less than 7% of all audio media exposure throughout the day was to streaming audio, with listening split relatively evenly between home (52.7%) and work (48.8%).

### 2.3.6 Other Sources of Audio Media

Individuals were also observed using or being exposed to other forms of audio media, such as at a store, restaurant, or outside. Nearly one-third to half of all study participants were exposed to some other source of audio, ranging from 40 to 70 minutes on average per day. These sources comprise 9% to 17% of all audio media exposures. As might be expected, a very high percentage (84.3%) of these exposures or listening periods occurred in a location other than the home, car, or work.

## 3.0 Comparison of Usage Across Five Key Advertising Media Sources

How does broadcast radio, the leading form of audio media, usage patterns compare with those of other key “advertising-based” forms of media, including live television, Web/Internet (excluding email), newspapers, and magazines? Note that live television is used here rather than live plus DVR playback as information was not captured on the content or age of the programming viewed on the latter. The addition of DVR viewing increases total TV viewing by approximately 5%. By similar reasoning, no portion of audio streamed via the Internet was credited in this analysis to broadcast radio, despite studies which attribute a plurality of streamed audio to this source. Likewise, while Web/Internet usage is compared here, use of email and software usage on computers is not. Like DVRs, the content of emails – particularly any advertising-related content – was not recorded, nor were the observations coded as to the time spent sending emails versus the time spent reading incoming email. Inclusion of emails in this comparison, therefore, was not viewed as appropriate for this particular analysis.

### 3.1 Daily Reach and Usage of Key Advertising Media Sources

Among the five media sources compared, live television had a daily average reach of 93.5%, followed by broadcast radio (77.3%), Web/Internet (63.7%), newspapers (34.6%), and magazines (26.5%) (Table 5a). Note that the finding that broadcast radio has a reach substantially higher than Web use is somewhat different than the conclusion drawn in an earlier report based on these data (see [http://www.researchexcellence.com/VCMFINALREPORT\\_4\\_28\\_09.pdf](http://www.researchexcellence.com/VCMFINALREPORT_4_28_09.pdf)). In that report “computing” was viewed as having outpaced broadcast radio, however, in that analysis “computing” included all computer-based activities such as web/Internet browsing, email, and software use.

Looking at demographic correlates of daily reach (Table 5a), live television, newspapers, and magazines all showed a pattern of increased reach among older individuals, while for broadcast radio and Web usage the pattern was reverse with these media showing increasing levels of reach among younger adults. In terms of socio-economics, both broadcast radio and Web use were higher among those in upper income brackets and greater educational attainment; for live TV the pattern differed with higher reach among lower educated individuals and no clear differences in reach in terms of family income. Employment status was also a distinguishing factor across these media, with a higher percentage of employed persons using broadcast radio and Web, but lower levels of newspaper and magazine readership. Magazine readership was also significantly higher among women than men. Finally, a person’s comfort level with technology was also correlated with media usage. Those who are more tech-savvy were more likely to use the Web, but less likely to have viewed live television or read a newspaper than those who are less tech-savvy.

With regard to the average number of minutes for each of these media among those who used or were exposed to the media source during the observation day we find some similar patterns (Table 5b). Live television led the way with 331 minutes of average daily use, followed by broadcast radio (109 minutes), web (77 minutes), newspapers (41 minutes), and magazines (22 minutes). The amount of live television watched increased dramatically among less educated and those with lower levels of income as well as those who were not employed, persons who are divorced, widowed, or separated, and black individuals. A somewhat similar pattern is noted with newspaper readership, with higher amounts of time reading newspapers being recorded for those aged 55 or older, persons who are not employed, those who are divorced, widowed, or separated, and renters. In contrast, Web use was higher among men, those aged 35 to 54, and single persons. Radio and magazines showed less significant variation in usage across the demographic groups examined.

In terms of share of time across these five key media platforms, respondents, on average, spent two-thirds (66.5%) of their time with these various media watching live television, 18.4% with broadcast radio, 10.7% Web, 3.1% newspapers, and 1.3% magazines (Table 5c). This share of time was higher for live television among those with incomes below \$30,000 (80.3%), those with a high school diploma or less education (79.9%), and black individuals (76.0%). Broadcast radio time shares were higher than average among those making \$100,000 or more per year (24.7%),

but much lower for those with incomes below \$30,000 (10.8%) and renters (10.5%). Higher than average time shares for web use were seen among those with an advanced degree (17.4%), those with incomes above \$100,000 (15.3%), and those aged 18 to 34 (15.2%). There was less variation across these subgroups in terms of share of time for newspaper or magazine reading.

### 3.2 Activities Concurrent with Use of Key Advertising Media Sources

In order to understand better how these different forms of media are consumed, we examined some of the activities in which individuals were engaged while using these different media sources. Some caution is required in interpretation of data in this section as “concurrent activities” were not captured for all observations. The percentage of observations missing a concurrent activity code ranged from 6.5% (for Web use) to 17.3% (for magazine reading) of the total time for each of these media. Many of these missing observations occurred in the early morning or later evening hours when observers were not onsite and, therefore, the time intervals were reconstructed through the use of respondent recall.

We look at the percentage of total time for each media source across twelve different concurrent activities (Table 6). For broadcast radio, 44.2% of the time listening was concurrent with traveling or commuting, 16.8% with work<sup>4</sup>, and just under 10% was use of broadcast radio with no other concurrent activities. This is a very different pattern from the other four media, where for a majority of each the time was spent with the media source alone – that is, there were no other concurrent activities: live television (64.0%), web (53.9%), newspapers (78.0%), and magazines 76.5%). Following this, for web nearly one-third (32.8%) of the time was also spent working; for live television, 8.8% was spent doing home chores or other household activities, and for newspapers, 8.5% of the time was spent eating a meal. Other than use of the media itself, there were no clear patterns of concurrent activities associated with magazine reading.

### 3.3 Hourly Weekday/Weekend Usage of Key Advertising Media Sources

One surprising finding is that when we examine how individuals use these key media sources across different days of the week is that people, on average, spend almost identical amounts of time on weekdays (454 minutes) and weekends (458 minutes) using these media sources. The overall share of time does, however, shift with live TV taking up a larger percentage of time on the weekends, newspapers remaining the same, and radio, Web, and magazines taking up a smaller share of the total time spent (see Figure 2). Among users of these media, we see that use of television increases from weekdays to weekends (313 minutes vs. 357 minutes), while use of broadcast radio declines significantly (114 minutes vs. 93 minutes) and Web use drops slightly (78 minutes vs. 72 minutes). Interestingly, there is no appreciable difference in the average amount of time users spent reading newspapers (41 minutes) or reading magazines (22 minutes vs. 21 minutes).

Looking more closely at how these sources are used throughout the day, hourly reach for these five media sources are shown for weekdays (Figure 3) and weekends (Figure 4).<sup>5</sup> During

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<sup>4</sup> Note: here we distinguish “work” as an activity compared to “work” as a location.

<sup>5</sup> Examination of time of day was restricted to 7am through midnight for two reasons. First, this particular analysis was restricted to data captured by the observers; recall data used to reconstruct media exposure when the observer

weekdays, television is the predominant media, particularly in the evening hours. Television viewing is fairly steady throughout the morning, mid-day, and afternoon hours, then begins to climb starting with the 5pm hour and cresting in “prime time” at the 8pm and 9pm hours before dropping. Radio is fairly steady through 5pm, with noticeable increases during the early morning (8am), mid-day (noon) and evening “drive times” (3pm-5pm). Web usage has a slightly lower reach than radio for much of the day, but is essentially equivalent during the 9am and 10am hours. Web usage drops during the noontime hour before increasing again between the 2pm and 4pm hours. Both radio and web usage show steady declines beginning with the 5pm hour through 11 pm. Not surprisingly, newspaper usage is highest in the early morning hours (7am and 8am) then declines somewhat throughout the morning, holding steady through much of the remainder of the day until the 10 pm hour. Magazines, in contrast, tend not to be used as much in the early morning hours (7am through 9am hours), but increase during mid-morning and remain fairly consistent through much of the day, showing a decline beginning in the 10pm hour.

Weekend usage shows many of the same basic patterns, but with some extremes. Television viewing increases dramatically between the 7am and 8am hours, remaining steady through mid-day, then slowly increasing throughout the day, spiking in “prime time.” Radio shows a steady increase in use throughout the morning and early afternoon, cresting at the 1pm hour, then steadily declining the remainder of the day. Weekend web usage picks up during the 9am hours, and with the exception of a dip during noontime, remains fairly steady throughout most of the day, declining in the later evening. Newspaper usage during the weekends closely mirrors patterns seen during the weekdays, albeit with lower levels in the early morning on weekends. Magazines also show lower usage during the weekends with little usage noted after 5pm.

### 3.4 Importance of Employment and Work Location

Employment status and whether the observation took place on a day in which the individual went to a work place or not had an impact on media exposures. This is particularly so for patterns of live television viewing and broadcast radio listening. Among those who indicated they were employed and observed at least part of the day in a work place, 43.6% of their media exposure time was to live television, compared to 68.6% of those who said they were employed but did not go to a work place on the day they were observed (these included observations on days which were regularly scheduled days off for these employed persons). Conversely, broadcast radio usage dropped from 36.2% to 15.2% of all media time for those who went to a work place compared to those who did not. The percentage of time spent on the Web dropped slight among these two groups (16.9% versus 13.3%), while the percentage of time spent with newspapers (2.3% versus 1.9%) and magazines (0.9% versus 1.0%) remained virtually unchanged.

The effect is most notable in terms of the shift in the average number of minutes for live television and broadcast radio for employed persons who were observed at least part of the time at a workplace compared to those who indicated they were employed but were not observed at a workplace. As shown on Table 7, live television exposure among employed persons observed at work averaged 172 minutes per day, but rose to 318 minutes per day for employed persons not

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was not around were excluded. This is because the times for the recalled data are likely less accurate than those of the observer. Second, with the exception of television there was very little usage of the other four media sources during the midnight to 7am timeframes.

observed at a workplace. Conversely, broadcast radio usage declined precipitously between these two groups, with employed persons observed at work averaging 146 minutes of listening compared to 85 minutes for those who were not observed at work.

These findings suggest that at least some of those who indicated in the pre-observation survey that they were employed may have taken the day off or scheduled their observation day at time when they would not need to go to their workplace. These individuals may have found it more convenient to hold the observation on a day when they were home rather than taking the observer to their workplace. Buttressing this supposition are data from the U.S. Government's American Time Use Survey (ATUS), which finds that among those 18 and older, approximately 45% engage in work on any given day (weekdays and weekends included). As might be expected, this percentage varies significantly by age: 18 to 34 year olds (51.5%), 35 to 64 year olds (54.0%), and 65 and older (11.8%). In the VCM study, the percentage of adults 18 or older who were observed for 30 minutes or longer either at a workplace or engaged in work as activity (regardless of location) was 34.2% overall: 18-34 years olds (35.0%), 35 to 64 year olds (40.8%), and 65 and older (13.8%). In sum, the work observations are 32% lower for the 18 to 34 year old group in the VCM as compared to ATUS estimates and 24% lower for the 35 to 64 year old group; among those 65 and older the estimates were very close. This pattern of behavior on the part of study respondents is similar to that seen in some self-reported travel studies, with respondents choosing lighter travel days to complete diaries rather than more burdensome high travel days<sup>6</sup>. This is not to suggest that the observations themselves in the VCM study are incorrect or faulty, but rather that because the data are not weighted to account for this apparent shift in the behavior of respondents, that some of the behavioral patterns noted may be more reflective of weekend-type behavior than might be the case in the general population.

In a separate analysis, not shown here, the VCM data were adjusted using the ATUS information as a standard to assess the potential impact of work on the final estimates. The impact of adjustment was minimal in terms of the increase (or decrease) in the average number of daily minutes spent among users and non-users (total sample) of the following media sources: Live television (-17 minutes), newspapers (no difference), magazines (+1 minutes), web-only (+3 minutes), broadcast radio (+4 minutes), and web and email (+9 minutes).

#### 4.0 Study Limitations

Limitations of the VCM study are well documented in "Video Consumer Mapping Study: Technical Appendix" (available at: [http://www.researchexcellence.com/vcm\\_technicalappendix.pdf](http://www.researchexcellence.com/vcm_technicalappendix.pdf)). Several of those limitations which have a direct bearing on the analyses presented here, however, are worthy of repeating:

The data are exceptionally comprehensive and granular but also necessarily constrained and imperfect. The general constraints stem from features of the research method including reliance on human observers; the behavioral focus of the method; technical restrictions of the data logging tool and restrictions of pre-defined typologies for location, activity and media exposure.

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<sup>6</sup> For example, see Richardson, A.J. 2003. Behavioral Mechanisms of Nonresponse in Mail-Back Travel Surveys. *Transportation Research Record*, 1855, pp. 191-199.



There are no electronic monitoring systems which can capture media exposure (much less participant activities) across all media platforms and all locations. The study, therefore, relies on an observational or "shadowing" method in which human observers follow participants throughout the day. Shadowing overcomes the memory limitations and social desirability bias of recall data and the compliance problems of participant diary data; however, the data are limited to what can be observed and logged by a trained and attentive observer.

The report talks largely in terms of "media exposure" rather than "media use." To evaluate an event as "media use" is to make a complex interpretation of cues to a participant's cognitions and motivations. Media exposure, in contrast, is a concrete, behavioral observation. For example, if a participant is positioned to hear audio content a media exposure is taking place. We don't know if the participant is influenced by the content, "paying attention" to it or ignoring it; we do know the participant is exposed to the content.

Although the computer-assisted device used to aid in the capture and recording of observations is state-of-the-art, it does, like any other computer-based piece of equipment, occasionally suffer from technical issues. One infrequent consequence is for the device to "freeze up" and require rebooting. These rare system crashes typically create a void of one to two minutes in the data. If the location, activity and media states are identical before and after the system failure and the "data gap" is short, the missing records are auto-filled with the values of the records before and after the gap.

The activity coding system requires exclusive categorization, therefore, activity multitasking is not accommodated. In this respect the activity coding is not as complete or rich as the media coding (in which concurrent media are possible).

Finally, the supplemental instruments used to collect information such as demographic characteristics and technology ownership are subject to all the familiar limitations of self-administered measures.

## **Appendix**

### **Detailed Data Tables**

**Table 1. Audio Media Daily Usage & Reach**

<b>Source of Audio</b>	<b>Daily Use: Average Minutes (All)<sup>1</sup></b>	<b>Daily Use: Average Minutes (Users Only)</b>	<b>Daily Reach</b>
<i>Total Audio</i>	165	182	90.7
<i>Total Radio (Broadcast + Satellite)</i>	96	122	79.1
Broadcast (AM/FM) Radio	84	109	77.3
Satellite Radio	12	81	15.3
CDs/Tapes	27	72	37.1
Portable Audio (MP3/iPod)	8	69	11.6
Digital Audio Stored on a Computer	7	65	10.4
Digital Audio Streamed on a Computer	6	67	9.3
Audio via Mobile Phone	<1	9	1.6
Other Sources of Audio	21	53	39.8

Note: Based on 752 observed days (124,418 observed minutes)

<sup>1</sup> Includes both users and non-users of this media.

**Table 2. Total Audio Use by Demographic Characteristics**

<b>Demographic Characteristics</b>	<b>Number of Days Observed</b>	<b>Daily Use: Average Minutes (All)<sup>1</sup></b>	<b>Daily Use: Average Minutes (Users Only)</b>	<b>Daily Reach</b>
Total	752	165	182	90.7
Sex:				
Male	348	178	192	92.5
Female	394	156	175	89.1
Age:				
18-34 years	202	189	210	94.1
35-54 years	304	175	188	93.1
55+ years	228	137	163	84.2
Race/ethnicity:				
White	580	162	178	91.2
Black	100	164	186	88.0
Hispanic	84	172	190	90.5
Education:				
High school or less	156	134	157	85.3
Some college	230	176	193	90.9
College degree	244	176	194	91.0
Advance degree	118	156	161	96.6
Household income:				
< \$30,000	156	128	157	81.4
\$30,000-\$59,999	196	148	167	88.8
\$60,000-\$99,999	216	185	193	95.8
\$100,000+	172	198	210	94.2
Employment status:				
Employed	474	186	197	94.3
Other employment status	274	130	154	84.3
Owner/renter:				
Own home	604	169	185	91.7
Rent home	138	152	176	86.2
Marital status:				
Married	418	172	186	92.8
Divorced/Widowed	170	125	152	82.4
Single	162	189	201	93.8
Children in household				
None	426	158	179	88.5
One	132	168	182	92.4
Two or more	174	176	185	94.8
High-Tech Oriented <sup>2</sup>				
No	596	161	179	89.9
Yes	154	183	196	93.5

<sup>1</sup> Includes both users and non-users of this media.

<sup>2</sup> Based on responses to a series of questions on technology ownership and use.

**Table 3a. All Radio (Broadcast & Satellite) Use by Demographic Characteristics**

<b>Demographic Characteristics</b>	<b>Number of Days Observed</b>	<b>Daily Use: Average Minutes (All)<sup>1</sup></b>	<b>Daily Use: Average Minutes (Users Only)</b>	<b>Daily Reach</b>	<b>Daily Share of All Audio</b>
Total	752	96	122	79.1	58.3
Sex:					
Male	348	105	128	81.6	58.9
Female	394	89	116	76.6	57.2
Age:					
18-34 years	202	90	109	82.2	47.4
35-54 years	304	106	130	81.6	60.7
55+ years	228	92	128	71.9	67.0
Race/ethnicity:					
White	580	93	117	79.3	57.4
Black	100	109	137	79	66.2
Hispanic	84	88	119	73.8	51.1
Education:					
High school or less	156	81	118	69.2	60.7
Some college	230	102	130	78.7	58.3
College degree	244	97	118	82	55.0
Advance degree	118	95	110	86.4	61.0
Household income:					
< \$30,000	156	66	105	62.8	51.4
\$30,000-\$59,999	196	99	125	79.1	66.8
\$60,000-\$99,999	216	106	125	84.7	57.5
\$100,000+	172	109	126	86.6	55.4
Employment status:					
Employed	474	107	126	84.8	57.4
Other employment status	274	79	114	69	60.6
Owner/renter:					
Own home	604	106	129	81.5	62.3
Rent home	138	58	81	71.7	38.5
Marital status:					
Married	418	106	129	82.1	61.3
Divorced/Widowed	170	78	114	68.8	62.5
Single	162	91	110	82.1	48.0
Children in household					
None	426	92	119	77.0	57.9
One	132	91	111	81.8	54.1
Two or more	174	105	128	82.2	59.6
High-Tech Oriented <sup>1</sup>					
No	596	95	122	78	59.2
Yes	154	101	122	83.1	55.4

<sup>1</sup> Includes both users and non-users of this media.

<sup>2</sup> Based on responses to a series of questions on technology ownership and use.

**Table 3b. Broadcast Radio Use by Demographic Characteristics**

<b>Demographic Characteristics</b>	<b>Number of Days Observed</b>	<b>Daily Use: Average Minutes (All)</b>	<b>Daily Use: Average Minutes (Users Only)</b>	<b>Daily Reach</b>	<b>Daily Share of All Audio</b>
Total	752	84	109	77.3	50.8
Sex:					
Male	348	87	110	79.3	49.0
Female	394	81	108	75.4	52.2
Age:					
18-34 years	202	82	104	79.2	43.5
35-54 years	304	86	107	80.6	49.2
55+ years	228	85	122	69.7	62.0
Race/ethnicity:					
White	580	80	104	77.1	49.6
Black	100	98	124	79	59.9
Hispanic	84	74	104	71.4	43.0
Education:					
High school or less	156	74	107	68.6	54.9
Some college	230	88	113	77.8	50.2
College degree	244	89	113	78.7	50.4
Advance degree	118	72	86	83.9	46.1
Household income:					
< \$30,000	156	61	99	61.5	47.4
\$30,000-\$59,999	196	83	105	78.6	55.8
\$60,000-\$99,999	216	95	116	81.5	51.2
\$100,000+	172	94	111	84.3	47.4
Employment status:					
Employed	474	90	109	82.7	48.6
Other employment status	274	73	109	67.5	56.4
Owner/renter:					
Own home	604	92	115	79.8	54.2
Rent home	138	52	75	68.8	34.2
Marital status:					
Married	418	89	111	80.1	51.7
Divorced/Widowed	170	72	108	66.5	57.4
Single	162	83	103	80.9	44.0
Children in household					
None	426	83	110	75.8	52.7
One	132	79	98	80.3	47.0
Two or more	174	82	104	78.7	46.5
High-Tech Oriented <sup>1</sup>					
No	596	82	107	76.7	51.0
Yes	154	92	115	79.9	50.0

<sup>1</sup> Includes both users and non-users of this media.

<sup>2</sup> Based on responses to a series of questions on technology ownership and use.

**Table 3c. Satellite Radio Use by Demographic Characteristics**

<b>Demographic Characteristics</b>	<b>Number of Days Observed</b>	<b>Daily Use: Average Minutes (All)</b>	<b>Daily Use: Average Minutes (Users Only)</b>	<b>Daily Reach</b>	<b>Daily Share of All Audio</b>
Total	752	12	81	15.3	7.5
Sex:					
Male	348	18	115	15.2	9.9
Female	394	8	54	14.5	5.0
Age:					
18-34 years	202	7	57	12.9	3.9
35-54 years	304	20	116	17.4	11.5
55+ years	228	7	46	14.9	5.0
Race/ethnicity:					
White	580	13	80	15.7	7.8
Black	100	10	104	10	6.3
Hispanic	84	14	83	16.7	8.1
Education:					
High school or less	156	8	71	10.9	5.8
Some college	230	14	96	14.8	8.1
College degree	244	8	53	15.6	4.7
Advance degree	118	23	109	21.2	14.9
Household income:					
< \$30,000	156	5	61	8.3	4.0
\$30,000-\$59,999	196	16	106	15.3	11.0
\$60,000-\$99,999	216	12	76	15.3	6.3
\$100,000+	172	16	73	21.5	8.0
Employment status:					
Employed	474	16	96	16.9	8.8
Other employment status	274	6	45	12.4	4.2
Owner/renter:					
Own home	604	14	88	15.6	8.1
Rent home	138	7	45	14.5	4.3
Marital status:					
Married	418	17	94	17.7	9.6
Divorced/Widowed	170	6	57	11.2	5.1
Single	162	8	59	13	4.0
Children in household					
None	426	8	11	77	5.3
One	132	12	98	12.1	7.1
Two or more	174	23	109	21.3	13.2
High-Tech Oriented <sup>1</sup>					
No	596	13	87	15.1	8.1
Yes	154	10	66	14.9	5.3

<sup>1</sup> Includes both users and non-users of this media.

<sup>2</sup> Based on responses to a series of questions on technology ownership and use.

**Table 3d. CD/Tape Use by Demographic Characteristics**

<b>Demographic Characteristics</b>	<b>Number of Days Observed</b>	<b>Daily Use: Average Minutes (All)</b>	<b>Daily Use: Average Minutes (Users Only)</b>	<b>Daily Reach</b>	<b>Daily Share of All Audio</b>
Total	752	27	72	37.1	16.1
Sex:					
Male	348	25	72	35.1	14.2
Female	394	28	72	39.3	18.1
Age:					
18-34 years	202	36	78	46.0	18.9
35-54 years	304	27	74	36.2	15.2
55+ years	228	20	64	30.7	14.2
Race/ethnicity:					
White	580	24	67	36.2	15.0
Black	100	28	74	38.0	17.2
Hispanic	84	42	96	44.0	24.5
Education:					
High school or less	156	30	82	36.5	22.2
Some college	230	28	74	37.8	15.9
College degree	244	26	73	35.2	14.6
Advance degree	118	20	52	39.0	13.0
Household income:					
< \$30,000	156	35	99	35.9	27.7
\$30,000-\$59,999	196	20	58	35.2	13.7
\$60,000-\$99,999	216	24	67	36.6	13.2
\$100,000+	172	28	70	40.7	14.4
Employment status:					
Employed	474	24	64	37.6	12.9
Other employment status	274	30	85	35.8	23.4
Owner/renter:					
Own home	604	24	67	36.1	14.2
Rent home	138	38	91	41.3	24.7
Marital status:					
Married	418	22	61	35.9	12.8
Divorced/Widowed	170	28	80	34.7	22.1
Single	162	37	87	42.6	19.6
Children in household					
None	426	27	74	36.2	16.9
One	132	26	71	36.4	15.3
Two or more	174	25	63	40.2	14.3
High-Tech Oriented <sup>1</sup>					
No	596	26	70	36.9	16.1
Yes	154	30	78	38.3	16.2

<sup>1</sup> Includes both users and non-users of this media.

<sup>2</sup> Based on responses to a series of questions on technology ownership and use.



**Table 3e. Portable Audio (MP3/iPod) Use by Demographic Characteristics**

<b>Demographic Characteristics</b>	<b>Number of Days Observed</b>	<b>Daily Use: Average Minutes (All)</b>	<b>Daily Use: Average Minutes (Users Only)</b>	<b>Daily Reach</b>	<b>Daily Share of All Audio</b>
Total	752	8	69	11.6	4.9
Sex:					
Male	348	11	71	15.8	6.3
Female	394	5	68	8.1	3.5
Age:					
18-34 years	202	14	68	20.8	7.5
35-54 years	304	8	72	11.5	4.7
55+ years	228	2	60	3.9	1.7
Race/ethnicity:					
White	580	8	65	12.4	5.0
Black	100	4	57	7.0	2.5
Hispanic	84	15	140	10.7	8.7
Education:					
High school or less	156	3	58	5.8	2.5
Some college	230	11	82	13.0	6.0
College degree	244	9	79	11.1	4.9
Advance degree	118	8	46	17.8	5.2
Household income:					
< \$30,000	156	3	54	5.8	2.5
\$30,000-\$59,999	196	3	52	6.6	2.3
\$60,000-\$99,999	216	12	71	16.2	6.2
\$100,000+	172	14	81	17.4	7.1
Employment status:					
Employed	474	11	75	15.2	6.2
Other employment status	274	2	41	5.5	1.7
Owner/renter:					
Own home	604	7	64	11.8	4.4
Rent home	138	11	95	11.6	7.3
Marital status:					
Married	418	8	64	12.2	4.6
Divorced/Widowed	170	3	74	3.5	2.1
Single	162	14	78	18.5	7.6
Children in household					
None	426	6	62	10.3	4.0
One	132	15	101	15.2	9.1
Two or more	174	8	53	14.4	4.3
High-Tech Oriented <sup>1</sup>					
No	596	7	71	9.7	4.3
Yes	154	12	65	18.2	6.5

<sup>1</sup> Includes both users and non-users of this media.

<sup>2</sup> Based on responses to a series of questions on technology ownership and use.

**Table 3f. Digital Audio Stored on a Computer Use by Demographic Characteristics**

<b>Demographic Characteristics</b>	<b>Number of Days Observed</b>	<b>Daily Use: Average Minutes (All)</b>	<b>Daily Use: Average Minutes (Users Only)</b>	<b>Daily Reach</b>	<b>Daily Share of All Audio</b>
Total	752	7	65	10.4	4.1
Sex:					
Male	348	10	84	11.5	5.5
Female	394	4	46	9.1	2.7
Age:					
18-34 years	202	14	71	19.8	7.4
35-54 years	304	7	63	10.5	3.8
55+ years	228	1	36	2.6	0.7
Race/ethnicity:					
White	580	7	72	10.2	4.5
Black	100	4	64	7.0	2.7
Hispanic	84	6	30	20.2	3.5
Education:					
High school or less	156	3	31	9.6	2.2
Some college	230	7	65	10.9	4.1
College degree	244	10	82	12.7	5.9
Advance degree	118	3	66	5.1	2.2
Household income:					
< \$30,000	156	4	42	8.3	2.7
\$30,000-\$59,999	196	4	47	8.7	2.7
\$60,000-\$99,999	216	9	74	12.0	4.8
\$100,000+	172	11	83	12.8	5.4
Employment status:					
Employed	474	10	72	14.1	5.4
Other employment status	274	1	25	4.0	0.8
Owner/renter:					
Own home	604	5	57	9.3	3.1
Rent home	138	13	85	15.9	8.9
Marital status:					
Married	418	9	74	11.5	4.9
Divorced/Widowed	170	1	25	3.5	0.7
Single	162	8	57	14.8	4.4
Children in household					
None	426	6	65	8.5	3.5
One	132	11	68	16.7	6.7
Two or more	174	7	60	11.5	4.0
High-Tech Oriented <sup>1</sup>					
No	596	6	59	10.2	3.8
Yes	154	10	87	11.0	5.2

<sup>1</sup> Includes both users and non-users of this media.

<sup>2</sup> Based on responses to a series of questions on technology ownership and use.

**Table 3g. Digital Audio Streamed to a Computer Use by Demographic Characteristics**

<b>Demographic Characteristics</b>	<b>Number of Days Observed</b>	<b>Daily Use: Average Minutes (All)</b>	<b>Daily Use: Average Minutes (Users Only)</b>	<b>Daily Reach</b>	<b>Daily Share of All Audio</b>
Total	752	6	67	9.3	3.8
Sex:					
Male	348	9	86	10.6	5.1
Female	394	4	49	7.9	2.5
Age:					
18-34 years	202	5	49	10.9	2.8
35-54 years	304	11	78	13.5	6.1
55+ years	228	2	58	3.1	1.3
Race/ethnicity:					
White	580	7	64	10.7	4.2
Black	100	3	46	7.0	2.0
Hispanic	84	5	63	8.3	3.0
Education:					
High school or less	156	2	54	3.8	1.5
Some college	230	2	26	7.8	1.2
College degree	244	12	93	13.1	6.9
Advance degree	118	8	68	11.9	5.2
Household income:					
< \$30,000	156	1	19	4.5	0.7
\$30,000-\$59,999	196	5	52	9.7	3.4
\$60,000-\$99,999	216	7	96	7.4	3.9
\$100,000+	172	12	73	16.3	6.0
Employment status:					
Employed	474	9	73	12.7	5.0
Other employment status	274	1	31	3.6	0.9
Owner/renter:					
Own home	604	7	72	9.1	3.9
Rent home	138	5	53	10.1	3.5
Marital status:					
Married	418	8	71	10.5	4.4
Divorced/Widowed	170	1	32	4.1	1.1
Single	162	8	71	11.7	4.4
Children in household					
None	426	5	81	6.3	3.2
One	132	5	40	12.9	3.0
Two or more	174	11	80	13.2	6.0
High-Tech Oriented <sup>1</sup>					
No	596	6	71	8.7	3.9
Yes	154	7	56	11.7	3.6

<sup>1</sup> Includes both users and non-users of this media.

<sup>2</sup> Based on responses to a series of questions on technology ownership and use.

**Table 3h. Other Source of Audio by Demographic Characteristics**

<b>Demographic Characteristics</b>	<b>Number of Days Observed</b>	<b>Daily Use: Average Minutes (All)</b>	<b>Daily Use: Average Minutes (Users Only)</b>	<b>Daily Reach</b>	<b>Daily Share of All Audio</b>
Total	752	21	53	39.8	12.8
Sex:					
Male	348	18	48	36.8	9.9
Female	394	25	57	43.1	15.9
Age:					
18-34 years	202	30	66	45.5	15.8
35-54 years	304	16	41	40.1	9.4
55+ years	228	21	58	35.5	15.1
Race/ethnicity:					
White	580	22	52	42.8	13.8
Black	100	15	47	31.0	8.9
Hispanic	84	16	46	34.5	9.2
Education:					
High school or less	156	14	45	31.4	10.4
Some college	230	25	64	40.0	14.5
College degree	244	22	50	44.3	12.6
Advance degree	118	21	47	44.1	13.4
Household income:					
< \$30,000	156	19	61	30.8	14.8
\$30,000-\$59,999	196	16	50	32.7	11.1
\$60,000-\$99,999	216	27	54	49.1	14.4
\$100,000+	172	23	50	46.5	11.7
Employment status:					
Employed	474	24	55	44.3	13.0
Other employment status	274	16	49	33.2	12.6
Owner/renter:					
Own home	604	20	50	40.4	12.0
Rent home	138	26	68	37.7	16.9
Marital status:					
Married	418	21	48	43.1	12.1
Divorced/Widowed	170	14	48	30.0	11.6
Single	162	30	68	43.2	15.6
Children in household					
None	426	23	58	39.2	14.3
One	132	19	45	42.4	11.5
Two or more	174	21	50	41.4	11.7
High-Tech Oriented <sup>1</sup>					
No	596	20	54	37.8	12.7
Yes	154	24	50	48.1	13.1

<sup>1</sup> Includes both users and non-users of this media.

<sup>2</sup> Based on responses to a series of questions on technology ownership and use.

**Table 4. Broadcast Radio Usage among Users of Other Forms of Audio Media**

<b>Source of Audio</b>	<b>Days Observed (Users Only)</b>	<b>Daily Use: Average Minutes (Users Only)</b>	<b>Daily Reach (Users Only)</b>
Satellite Radio	115	109	87.8
Digital Audio Streamed on a Computer	70	98	85.7
Portable Audio (MP3/iPod)	87	97	81.6
CDs/Tapes	279	95	80.6
Digital Audio Stored on a Computer	78	86	79.5
Audio via Mobile Phone	--- <sup>1</sup>	---	---
Other Sources of Audio	301	100	83.1

<sup>1</sup> Statistics suppressed due to small sample size.

**Table 5a. Reach of Key Consumer Media by Demographic Characteristics**

<b>Demographic Characteristics</b>	<b>Number of Days Observed</b>	<b>Live TV</b>	<b>Broad-cast Radio</b>	<b>Web / Internet</b>	<b>Newspapers</b>	<b>Magazines</b>
Total	752	93.5	77.3	63.7	34.6	26.5
Sex:						
Male	348	92.0	79.3	67.2	37.6	19.8
Female	394	94.6	75.4	61.4	32.3	32.7
Age:						
18-34 years	202	91.1	79.2	76.2	21.3	17.8
35-54 years	304	93.1	80.6	69.4	30.6	26.0
55+ years	228	95.6	69.7	46.1	50.0	34.6
Race/ethnicity:						
White	580	92.4	77.1	68.8	38.6	26.0
Black	100	99.0	79.0	47.0	21.0	30.0
Hispanic	84	96.4	71.4	52.4	13.1	27.4
Education:						
High school or less	156	98.7	68.6	32.7	34.0	21.2
Some college	230	93.5	77.8	65.2	30.9	29.6
College degree	244	92.6	78.7	74.6	34.0	27.9
Advance degree	118	88.1	83.9	80.5	42.4	25.4
Household income:						
< \$30,000	156	94.2	61.5	42.3	31.4	30.8
\$30,000-\$59,999	196	92.3	78.6	59.2	41.8	24.5
\$60,000-\$99,999	216	93.5	81.5	71.8	27.8	20.8
\$100,000+	172	93.6	84.3	80.2	37.8	33.1
Employment status:						
Employed	474	92.4	82.7	74.1	28.7	21.3
Other employment status	274	95.3	67.5	46.7	44.5	35.0
Owner/renter:						
Own home	604	92.5	79.8	65.9	36.4	27.2
Rent home	138	97.1	68.8	55.1	25.4	22.5
Marital status:						
Married	418	91.9	80.1	67.9	34.4	25.8
Divorced/Widowed	170	98.2	66.5	47.8	49.4	39.4
Single	162	92.6	80.9	70.4	18.5	14.8
Children in household						
None	426	93.4	75.8	58.5	38.3	27.7
One	132	97.0	80.3	75.8	31.8	26.5
Two or more	174	90.8	78.7	71.3	27.6	25.3
High-Tech Oriented <sup>1</sup>						
No	596	92.4	76.7	60.4	36.2	26.8
Yes	154	76.8	79.9	76.6	27.9	25.3

<sup>1</sup> Based on responses to a series of questions on technology ownership and use.

**Table 5b. Average Minutes Daily Use (Users only) of Key Consumer Media by Demographic Characteristics**

<b>Demographic Characteristics</b>	<b>Number of Days Observed</b>	<b>Live TV</b>	<b>Broad-cast Radio</b>	<b>Web / Internet</b>	<b>Newspapers</b>	<b>Magazines</b>
Total	752	331	109	77	41	22
Sex:						
Male	348	314	110	86	36	19
Female	394	331	108	68	46	23
Age:						
18-34 years	202	260	104	77	26	25
35-54 years	304	303	107	84	27	17
55+ years	228	400	122	62	58	26
Race/ethnicity:						
White	580	293	104	77	42	22
Black	100	481	124	76	44	25
Hispanic	84	326	104	72	25	22
Education:						
High school or less	156	445	107	50	50	17
Some college	230	329	113	87	36	26
College degree	244	276	113	73	38	21
Advance degree	118	245	86	82	45	19
Household income:						
< \$30,000	156	478	99	68	43	24
\$30,000-\$59,999	196	314	105	93	47	23
\$60,000-\$99,999	216	298	116	73	42	23
\$100,000+	172	224	111	72	31	18
Employment status:						
Employed	474	266	109	80	29	19
Other employment status	274	421	109	68	55	25
Owner/renter:						
Own home	604	309	115	74	39	23
Rent home	138	388	75	90	53	15
Marital status:						
Married	418	272	111	77	34	20
Divorced/Widowed	170	425	108	67	55	22
Single	162	345	103	83	35	28
Children in household						
None	426	359	110	72	49	25
One	132	287	98	92	26	18
Two or more	174	257	104	67	25	15
High-Tech Oriented <sup>1</sup>						
No	596	333	107	79	43	22
Yes	154	373	115	71	29	19

<sup>1</sup> Based on responses to a series of questions on technology ownership and use.

**Table 5c. Share of Time for Key Consumer Media by Demographic Characteristics**

<b>Demographic Characteristics</b>	<b>Number of Days Observed</b>	<b>Live TV</b>	<b>Broad-cast Radio</b>	<b>Web / Internet</b>	<b>Newspapers</b>	<b>Magazines</b>
Total	752	66.5	18.4	10.7	3.1	1.3
Sex:						
Male	348	64.1	19.3	12.8	3.0	0.8
Female	394	68.3	17.7	9.1	3.3	1.6
Age:						
18-34 years	202	61.1	21.2	15.2	1.4	1.2
35-54 years	304	64.3	19.6	13.3	1.9	1.0
55+ years	228	71.6	15.9	5.3	5.4	1.7
Race/ethnicity:						
White	580	63.6	18.9	12.4	3.8	1.4
Black	100	76.0	15.7	5.7	1.5	1.2
Hispanic	84	72.2	17.0	8.7	0.7	1.4
Education:						
High school or less	156	79.9	13.4	2.9	3.1	0.6
Some college	230	65.3	18.7	12.1	2.4	1.6
College degree	244	61.2	21.3	13.1	3.1	1.4
Advance degree	118	57.2	19.0	17.4	5.1	1.3
Household income:						
< \$30,000	156	80.3	10.8	5.1	2.4	1.3
\$30,000-\$59,999	196	64.0	18.3	12.2	4.4	1.2
\$60,000-\$99,999	216	63.1	21.4	11.8	2.6	1.1
\$100,000+	172	55.5	24.7	15.3	3.1	1.6
Employment status:						
Employed	474	60.4	22.1	14.5	2.0	1.0
Other employment status	274	74.4	13.6	5.9	4.5	1.6
Owner/renter:						
Own home	604	64.0	20.5	10.9	3.2	1.4
Rent home	138	76.1	10.5	10.0	2.7	0.7
Marital status:						
Married	418	61.3	21.8	12.7	2.9	1.2
Divorced/Widowed	170	74.9	12.9	5.7	4.9	1.6
Single	162	67.7	17.6	12.4	1.4	0.9
Children in household						
None	426	68.9	17.1	8.7	3.9	1.4
One	132	63.2	18.0	15.9	1.9	1.1
Two or more	174	62.4	21.8	12.9	1.8	1.0
High-Tech Oriented <sup>1</sup>						
No	596	67.1	17.9	10.4	3.4	1.3
Yes	154	64.3	20.6	12.2	1.8	1.1

<sup>1</sup> Based on responses to a series of questions on technology ownership and use.



**Table 6. Percentage of Audio Media Time by Concurrent Activities**

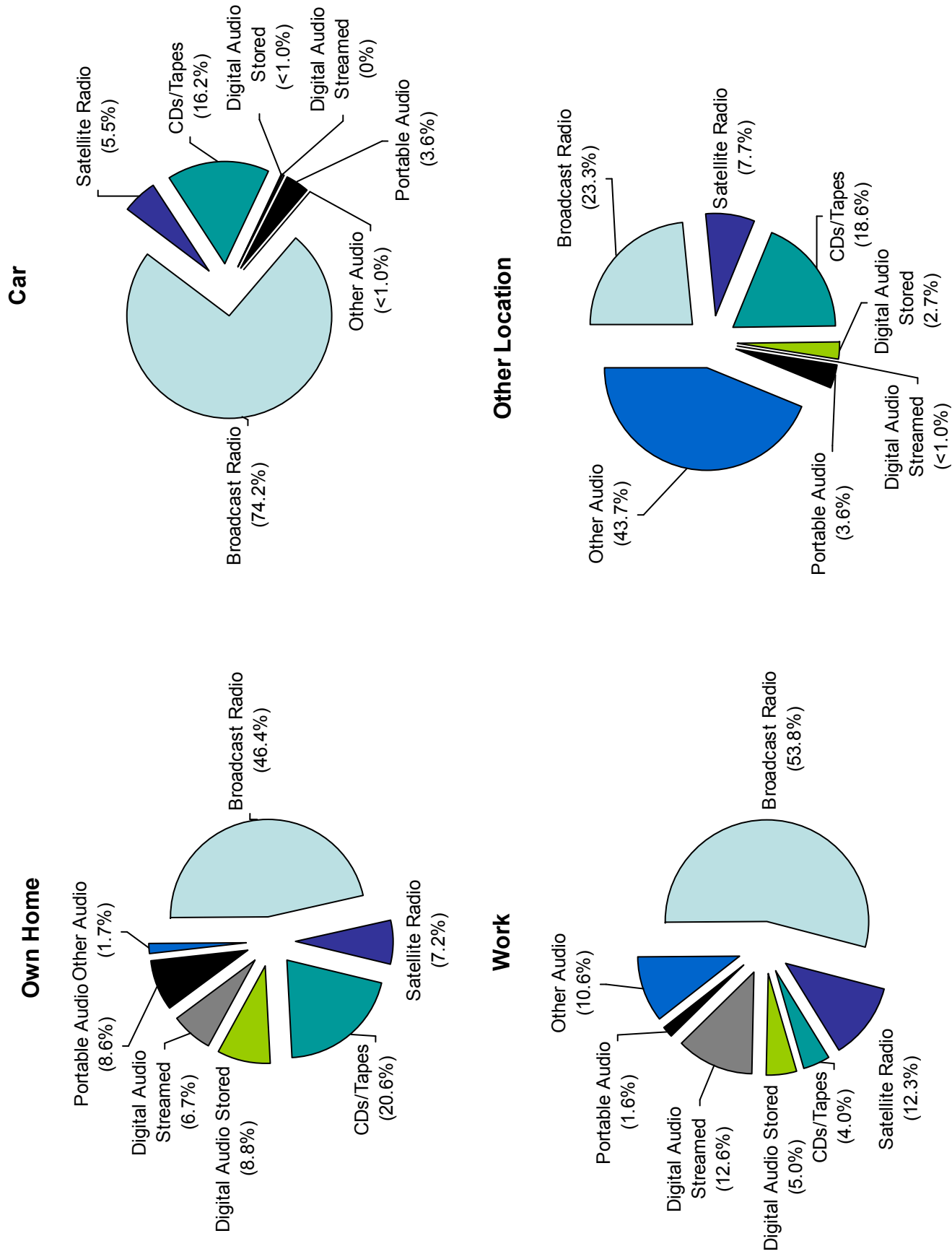
<b>Concurrent Activity<sup>1</sup></b>	<b>Broad- cast Radio %</b>	<b>Live TV %</b>	<b>Web / Internet %</b>	<b>Newspapers %</b>	<b>Magazines %</b>
Media use only	9.7	64.0	53.9	78.0	76.5
Work	16.8	3.0	32.8	1.3	3.1
Meal preparation	3.0	3.9	0.5	0.3	2.6
Meal eating	4.6	5.5	2.0	8.5	3.5
Travel/commuting	44.2	0.0	0.1	0.2	1.2
Caring for personal needs	3.6	5.1	2.2	4.9	2.5
Home activities/chores	8.2	8.8	2.8	4.3	2.4
Care of others	1.1	2.6	1.4	0.0	3.0
Shopping	4.7	0.2	0.1	0.1	0.7
Socializing	2.0	5.3	3.3	2.0	2.7
Exercise/sports/hobbies	2.1	1.6	0.9	0.4	1.8
Minutes Observed <sup>1</sup>	57,587	208,142	34,306	9,199	3,559

<sup>1</sup>Note: Concurrent activity codes were missing for some observations. Percent of audio use by concurrent activity was calculated only for those observations that contained a concurrent activity code. The percent of total audio minutes for each source for which a concurrent activity code were missing was: broadcast radio, 8.8%; live television, 8.6%; Web, 6.5%; newspaper, 13.4%; and magazine 17.3%.

**Table 7. Effects of Employment and Workplace on Media Exposure**

<b>Media Source</b>	<b>Employed w/ Observations at Workplace</b>		<b>Employed with No Observations at Workplace</b>		<b>Other Employment Status</b>	
	Reach	Avg. Min. (Users)	Reach	Avg. Min. (Users)	Reach	Avg. Min. (Users)
Live TV	92.0	172	93.6	318	95.3	421
Broadcast Radio	90.2	146	77.3	85	67.5	109
Web	79.9	77	70.6	82	46.7	68
Newspaper	36.2	23	24.1	34	44.5	55
Magazines	18.4	18	22.7	20	35.0	25
(n)	(174)		(299)		(274)	

**Figure 1. Percentage of Minutes for Audio Sources by Location**



**Figure 2. Percentage of Time Spent with Five Key Media Sources by Weekday/Weekend**

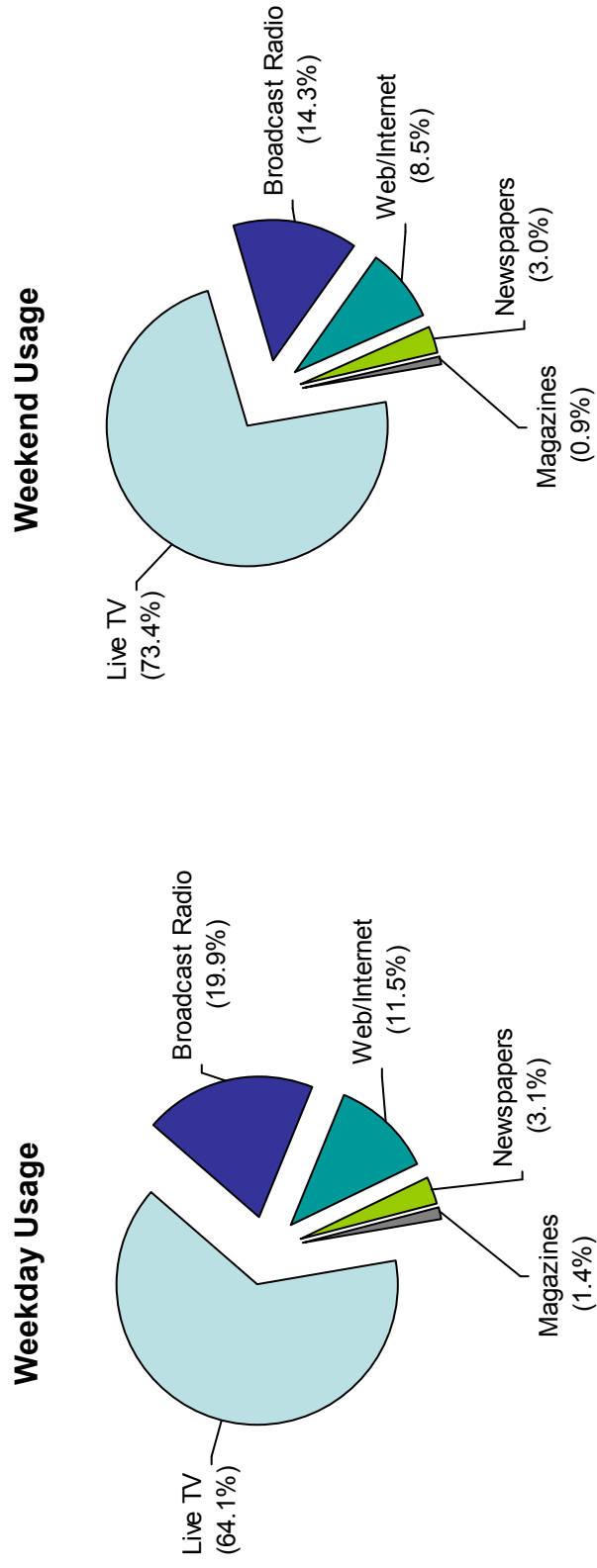


Figure 3. Weekdays: Average Hourly Reach for Key Media Sources

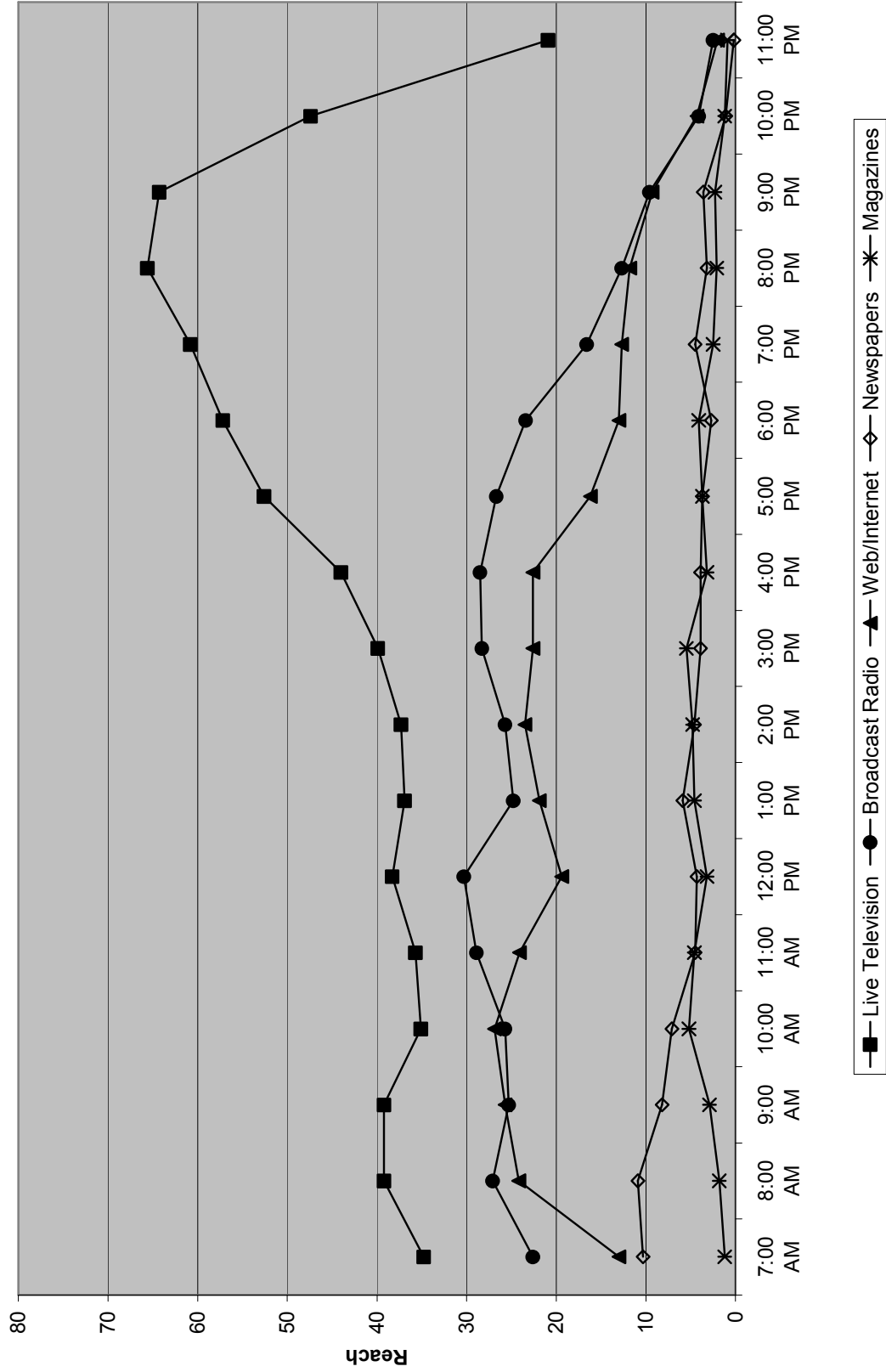


Figure 4. Weekend: Average Hourly Reach for Key Media Sources

